Report to General Manager

Attachments:
1. Western Harbour Tunnel & Warringah Freeway Upgrade EIS Submission
2. Secretary's Environmental Assessment Requirements

SUBJECT: Council Submission to the Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement

AUTHOR: Neal McCarry, Team Leader Strategic Planning Policy

ENDORSED BY: Joseph Hill, Director City Strategy

EXECUTIVE SUMMARY:

On 29 January 2020 the NSW Government released the Western Harbour Tunnel (WHT) and Warringah Freeway Upgrade (WFU) Environmental Impact Statement (the EIS) for the proposed projects. The public exhibition period has recently been extended and now concludes on 30 March 2020.

This report provides a description of the key elements and impacts of the Western Harbour Tunnel and Warringah Freeway upgrade projects and seeks Council's endorsement to submit a formal response on the Environmental Impact Statement to the Department of Planning, Industry and Environment.

This report has been prepared with input from a multi-disciplinary team across Council's divisions as well as some external specialist consultant input. Given the short timeframe relative to the scale of the project and volume of exhibition documentation, some sections of the EIS have not been the subject of detailed review and the response prepared to such a voluminous and highly technical document, has been influenced by the time available to comment. At the time of completion of this report, a formal request by Council to extend the consultation period for an extension of time until 12 May 2020, was yet to receive a response.

The review of the EIS for these projects has identified significant concerns including; inadequate justification and need, loss of open space, construction and operational road network impacts, air quality and human health concerns, environmental, visual, social, amenity and heritage impacts as well as numerous key (State and Local) strategic projects having the potential to be compromised. The analysis has also concluded that aspects of the Secretary's Environmental Assessment Requirements (SEARs) have not been adequately met in the EIS.

Due to the scale and complexity of the project and nature and number of issues arising, the identified concerns are summarised and presented at a high level in this report and addressed in more detail in the submission attached to this report. Recommended mitigation measures and matters requiring further resolution, are also provided, in the event that the project proceeds in its current form.

FINANCIAL IMPLICATIONS:

Due to the limited time available a detailed evaluation of likely financial implications of the WHT and WFU project is yet to be undertaken. Depending on the metrics applied, financial implications are likely to be substantial.

RECOMMENDATION:

1. THAT the submission to the Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement, included at Attachment 1, be endorsed by Council and forwarded to the NSW Department of Planning, Industry and Environment.

2. THAT the General Manager be delegated authority to incorporate any amendments or additions by Council and finalise the submission to be forwarded to the NSW Department of Planning, Industry and Environment.

3. THAT Council make separate written representations regarding the need to establish a process for determining terms of reference setting out guiding principles and a framework for the development of any future Interface Agreement or Deed of Agreement in relation to all Council assets and to adequately ameliorate the identified adverse impacts of the project on the North Sydney Community.

4. THAT the submission form the basis of any further near-term discussions and negotiations with the proponent with respect to proposed compulsory land acquisitions and construction leases.

5. THAT Council re-iterate its previous request for an extension of time, until 12 May 2020, to allow the community adequate time to review the EIS documentation as well the impacts identified in Council's detailed submission.

LINK TO COMMUNITY STRATEGIC PLAN

The relationship with the Community Strategic Plan is as follows:

Direction:	1. Our Living Environment
Outcome:	1.2 North Sydney is sustainable and resilient 1.3 Quality urban greenspaces 1.4 Public open space and recreation facilities and services meet community needs
Direction:	2. Our Built Infrastructure
Outcome:	2.1 Infrastructure and assets meet community needs 2.2 Vibrant centres, public domain, villages and streetscapes 2.3 Sustainable transport is encouraged 2.4 Improved traffic and parking management
Direction:	3. Our Future Planning
Outcome:	3.1 Prosperous and vibrant economy 3.2 North Sydney CBD is one of NSW's pre-eminent commercial centres 3.3 North Sydney is smart and innovative 3.4 North Sydney is distinctive with a sense of place and quality design
Direction:	4. Our Social Vitality
Outcome:	4.1 North Sydney is connected, inclusive, healthy and safe

BACKGROUND

In 2011, the NSW Government adopted the Infrastructure NSW Act (INSW Act), establishing INSW and giving it responsibility for developing the *State Infrastructure Strategy*. Clause 17 (3) of the Act states that:

> *Infrastructure NSW must, in preparing or reviewing the strategy, have regard to any State strategic priority of which Infrastructure NSW has been advised by the Premier.*

On 31 July 2014, former NSW Premier used this clause 17 (3) provision as follows:

> *The Premier also directed that, in developing* (the SIS)*, Infrastructure NSW should take into account the following State strategic priorities in accordance with section 17(3) of the Act:* (in part) *...major projects to address congestion on key arterial routes across Sydney, including in Southern Sydney, the West and Northern Beaches, and the augmentation of WestConnex with greater north/south connectivity*. (Source - Chapter 1.1 of the State Infrastructure Strategy Update 2014).

This is significant as it effectively prioritised motorway construction before a comparative evidence-base was generated or detailed regional analysis of current and future travel patterns was undertaken, to inform decisions about the preferred transport mode or route alignment from

a broad set of options. This analysis is ordinarily expected to occur in best practice strategic transport planning. The Premier's directive resulted in inclusion of the Western Harbour Tunnel (*WHT*), on an alignment premised on a future motorway connection to the Northern Beaches (Beaches Link), in INSW's 2014 update of the *State Infrastructure Strategy*.

In July 2018 the NSW Government released the '*Western Harbour Tunnel and Beaches Link Project Update'*. In response to this, a report was considered by Council on 29 October 2018. Council made a submission to the *WHT/BL* consultation, requesting clarification of numerous issues identified in the report as well as the following:

- that state government release a strategic/final business case for WHT/BL;
- that more information regarding the design, construction and operational impacts of *WHT/BL* on North Sydney be provided;
- that *WHT/BL* exhaust stacks be filtered; and
- that clarification of the impacts of *WHT/BL* on existing and future open space, sports facilities and water treatment infrastructure at Cammeray Golf Course be provided.

On 22 January 2020 the NSW Government released the Western Harbour Tunnel & Warringah Freeway Upgrade (WHT&WFU) Environmental Impact Statement (EIS) for consultation. The suite of exhibition documents totals over 9000 pages. The final date for acceptance of submissions was recently extended from 12 March to 30 March 2020. It is highlighted that the EIS documentation currently on display does not include, in detail, the 'Beaches Link' element of project, however, it is referenced throughout the EIS. It is understood that a second EIS will be released later this year for the Beaches Link component.

CONSULTATION REQUIREMENTS

The community consultation for these projects is being conducted by TfNSW. Council has, however, endeavored to keep the community updated wherever possible on matters relating to these projects through provision of updates on Council's website and hosting of exhibition documentation in Council's Administration Building and the Stanton Library. Whilst Council has not requested written submissions input and concerns raised by community members have helped inform the assessment process and Councils submission.

SUSTAINABILITY STATEMENT

This report deals with State Government Transport Planning, which will have a substantial effect on sustainability. The sustainability of the project is discussed in more detail in the detailed submission (Attachment No.1).

DETAIL

1. Project Description

Due to the complexity and scale of the Western Harbour Tunnel and Warringah Freeway project a Project Overview is provided at Attachment No 2. This is not a comprehensive summary of every aspect of the project but attempts to capture the key elements and features of the projects that are likely to be of most interest to the North Sydney community and identify how they will interact with the existing surrounds.

The proposed WHT project comprises twin motorway tunnels with three traffic lanes in each direction, connecting traffic from WestConnex's Rozelle Motorway Interchange with the Warringah Freeway at North Sydney (Figure 1). In addition to the south bound entry portals within the Warringah Freeway corridor, proposed surface connections for *WHT* in and around the North Sydney CBD include a north bound off-ramp to Falcon Street and a south bound on-ramp accessed via Berry Street. Permanent *WHT&WFU* supporting infrastructure includes:

- the widening of Berry Street to four (4) lanes;
- a ventilation outlet at the Ernest Street overpass, Cammeray;
- operational facilities including a motorway control centre in Cammeray Park, Cammeray;
- groundwater and tunnel drainage management and treatment systems;
- signage and tolling infrastructure;
- fire and life safety systems; lighting; emergency evacuation and emergency smoke extraction infrastructure; CCTV; and other traffic management systems.

The complexity of current Warringah Freeway lane arrangements means that a major re-design of the Warringah Freeway, between the Sydney Harbour Bridge and Cammeray, is required to accommodate WHT portals and associated increases in cross harbour traffic. A summary table is provided in Attachment 1 detailing current connections/access arrangements and those proposed under the WHT and WFU projects.

The re-alignment of the existing southbound bus lane on the Warringah Freeway requires the construction of four (4) new under/ overpasses on the eastern edge of the Warringah Freeway, adjacent to North Sydney residential precincts.

Other key aspects of the project include the temporary and permanent acquisition of various parcels of land (public and private) to facilitate the construction of the projects which is estimated to take around 5 years.

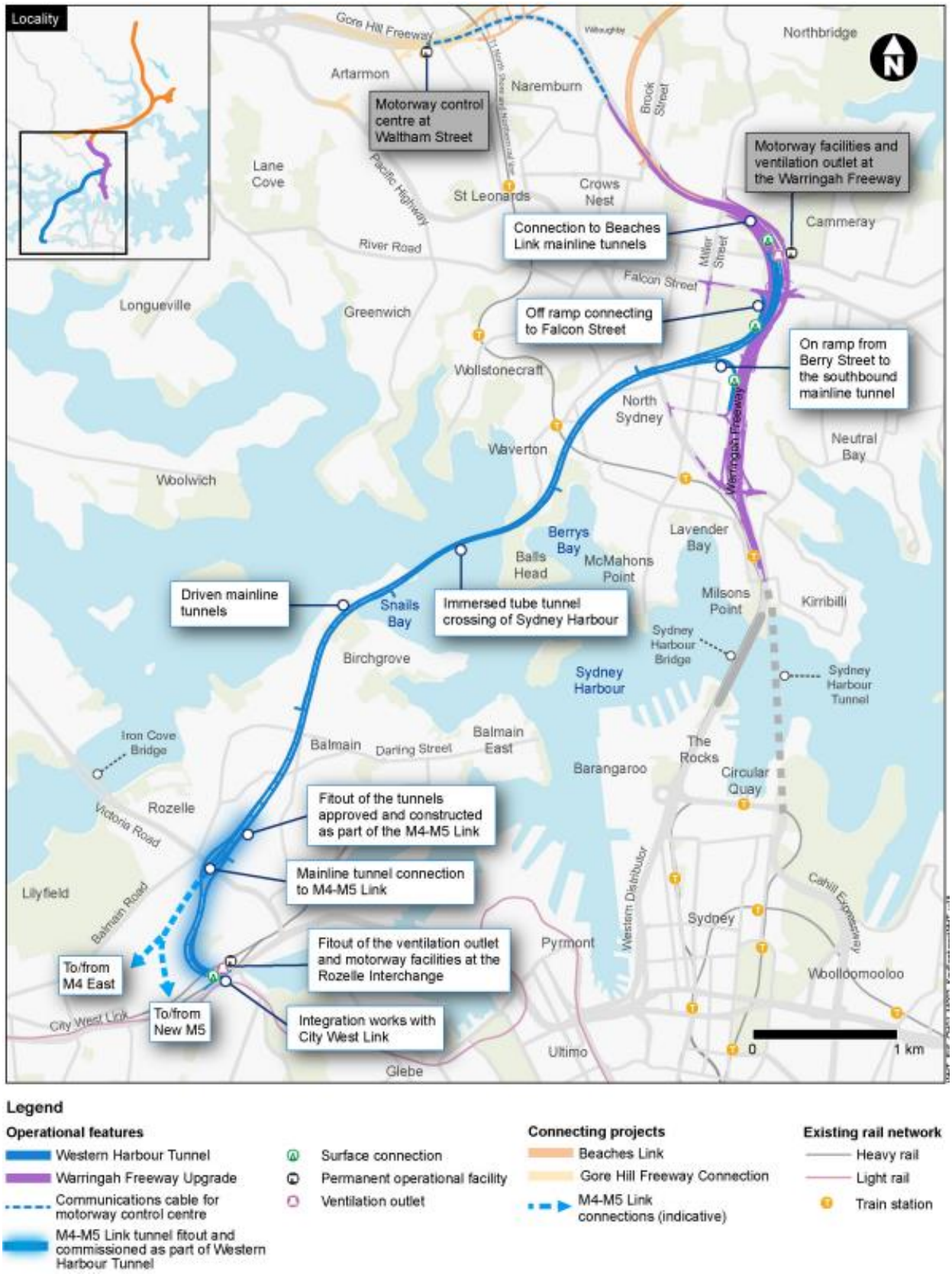

Figure 1 – Key Elements of the WHT and WFU component of the project

2. Assessment

2.1 Methodology

The Environmental Impact Statement (EIS) comprises a total of over 9,000 pages of documentation. The EIS content is presented over a series of 28 chapters and includes voluminous specialist technical reports, assessments and documentation. A 106 page 'Guide' to the EIS has also been published to accompany the exhibition documents. For the purposes of reviewing the EIS, an internal working group was formed comprising relevant staff from across Council's Directorates. Specialist external consultant expertise was sourced for some areas of the assessment including air quality and Aboriginal Heritage.

This report presents a summary of the key outcomes and findings resulting from Council's assessment. More detailed assessment commentary to support the conclusions reached is provided in the detailed submission at Attachment No 1. Given the timeframe provided and the need to balance existing Council services and obligations the assessment is not exhaustive. In some instances where relevant specialist professional expertise was not available (e.g. geology, soils and groundwater), a detailed critique has not been undertaken. For ease of reference, key outcomes and findings below are grouped and presented under headings, however, it is recognised that many of the issues are integrally inter-related.

Commentary and recommendations are also provided with respect to mitigation measures and matters required to be further addressed and resolved, in the event that the project proceeds.

Reference is made throughout this report to the Secretary's Environmental Assessment Requirements (SEARs). These are a set of requirements, issued by the Secretary of the Department of Planning, Industry and Environment, that must be responded to in the preparation of an EIS for projects and infrastructure of this nature. These are important in that they include desired performance outcomes and objectives which the detailed specific assessment requirements must satisfy. Whilst detailed in themselves, they provide a useful, and more easily understood, framework against which, one can evaluate the adequacy of the EIS. A copy of these are provided at Attachment 2.

A detailed assessment with respect to the components of the project on the Southern side of Sydney Harbour has not been undertaken. An assessment is being undertaken of these components by Inner West Council.

It should also be noted that Beaches Link is not assessed or in any way assured by the WHT/WFU EIS. As such, the "combined" impacts of WHT/WFU and Beaches Link given in the EIS have not been able to be assessed as part of this report.

2.2 Transport Analysis and Strategic Justification

The methodology applied to the development of the project is questioned. An analysis of the project development against the TfNSW best practice guidelines has identified a number of inconsistencies. These include a lack of clear problem definition and analysis, omission of benchmarking and case studies, limited non-motorway options analysis, use of outdated modelling inputs and growth assumptions and an absence of consideration of the impacts on the Sydney Metro West project. The Sydney Metro West project is further progressed than the WHT/WFU and will result in a significant reduction in traffic demand in the Rozelle area. It's

exclusion from WHT/WFU modelling is fundamental as the analysis would potentially bring into question the need for the WHT/WFU proposal.

Although the WHT project is included in a number of Federal and State infrastructure assurance documents, each of these documents notes that inclusion of the project is predicated on submission of a final business case which has yet to be prepared. Further, a thorough assessment of WHT's consistency with the State Government's revised land use and transport planning framework for Sydney (The Region Plan & Future Transport Strategy) was not undertaken as part of the development of these planning documents.

2.3 Open Space – St Leonards Park and Cammeray Park.

The construction and post-construction impacts on the two areas of open space are substantial. The occupation of a large portion of St Leonards Park (7,272m^2) for 5 years and its proposed return state condition require re-consideration. The permanent loss of much valued land in Cammeray Park (28,896m^2) along with removal of Council's stormwater harvesting facility, is of significant concern. If the project proceeds, the development of an overarching strategy for negotiation of financial and open space loss amelioration and compensation is warranted.

2.4 Construction and Operational Road Network Impacts

The construction period for the project is estimated to be over 5 years. During construction there will be significant disruption to the Warringah Freeway Corridor including periods of partial and full closure. There will be significant flow-on impacts on other arterial and local roads in the North Sydney LGA. In addition, a number of proposed tunnel spoil and equipment routes in local streets will have substantial amenity impacts.

Following construction completion, analysis has revealed that WHT and WFU proposals, will result in various changes to function of the surrounding road networks due to changed access arrangements to the corridor and the operation of new tunnel(s). An analysis of the supplied traffic modelling has been undertaken and is contained within Attachment No 1. The project will see significant net additional traffic on Berry Street, Miller Street, Falcon Street and Pacific Highway (south of Falcon Street) as well as significant reductions in levels of service (i.e. greater waiting times) at several key intersections.

The suggested traffic volume increases and network changes are such that numerous State and Local initiatives will either be unable to occur or require significant amendment. These are outlined further in Section 2.9 of this covering report.

The EIS also notes that the proposed projects will result in:

- (in part) *Increased traffic demands and delays for traffic in the North Sydney area.*
- *Changes to access in and around North Sydney, which would streamline movements around North Sydney CBD but would also impact current arrangements for some residents and businesses in the area.*
- *Potential for increased demand and consequent increases to travel times between the Lane Cove Tunnel/Longueville Road and the Gore Hill Freeway.*
- *…impacts on public and active transport would include the potential for travel times on bus routes through North Sydney to generally increase in the absence of further mitigation measures.*

2.5 Air Quality, Human Health and Social Wellbeing

The technical report accompanying the EIS has been referred to an external industry specialist. This analysis included a review of the methodology applied and provides subject matter expertise in this area. The location of the proposed ventilation stacks is a key concern for the community as has been repeatedly articulated at various forums since the announcement of the projects.

One aspect of the methodology that warrants further interrogation is the assumption that background air quality growth will continue on its current trajectory (under a no-project scenario). Modelled emissions increases (resulting from the project) are then represented as a portion or measure above the projected air quality. This methodology appears flawed in that the same modelling also takes some account of projected emissions reductions likely to occur over time, assumedly to present the proposed project in a more environmentally favourable light. Further, it has been identified that soon to be revised NO_2 (Nitrogen Oxide) standards are proposed in the National Environment Protection Measure (Ambient Air Quality) should be applied to the project as part of a more general reassessment of the potential impacts of the proposal.

The (non) filtration of ventilation stacks on motorways across Sydney has been a highly contentious issue throughout communities surrounding these areas. The detail provided in support of this project is extensive and highly technical in nature. It ultimately reaches the conclusion that the appropriate design of ventilation outlets would achieve the same outcomes as installing air filtrations systems and do not represent an unreasonable risk to the community. The community's willingness of acceptance of any risk to human health (associated through the concentration of an emissions point as a result of this project), is understandably low.

Even if one were to accept the evidence on face value, precautionary application of a filtration system, in line with various international practices, should be considered a prudent and more responsible approach to this issue. This would better satisfy the SEARs Air Quality objective '*to minimise air quality impacts to minimise risks to human health and environment to the greatest extent practicable'*. The additional cost associated with this would be negligible in the context of the total project cost.

2.6 Environmental Impacts

The proposal includes the use of submerged tunnel construction method that requires significant dredging and sediment disturbance of the harbour floor. In consideration of the Sydney Metro City and South-West project, (currently under construction), this method of construction was deemed to present an unacceptable level of risk and tunnel boring (under the harbour floor) was deemed the most environmentally sensitive construction method. This is clearly articulated in the Metro EUS (Chapter 4.6) *"the likely environmental impacts associated with dredging and cofferdam construction in the harbour would be considerable."*

Several significant environmental concerns have been identified with respect to impacts on water quality in Balls Head Bay, marine biodiversity, foraging habitat as well as known roosting sites of threatened species. Other related bushland impacts, including the loss of Council's stormwater harvesting and filtration facility in Cammeray Park, and access concerns are outlined in the detailed submission.

More broadly, the project facilitates and promotes more journeys being undertaken by private vehicle. As is broadly accepted in traffic planning, greater road capacity generally leads to "induced demand" as motorists take advantage of such increased capacity and the congestion problems, over time, continue to be replicated on an increasing scale. This will lead directly to an increase in greenhouse gas emissions and particulate matter. In the context of the recent declaration of a National Climate Emergency by many jurisdictions, including North Sydney Council, this along with the loss of Council's stormwater harvesting facility in Cammeray Park is incongruous from an environmental perspective.

2.7 Visual Amenity/General Amenity

Several key visual and amenity impacts have been identified. As part of the Warringah Freeway Upgrade, four (4) new underpasses/overpasses are proposed along the eastern edge of the corridor to provide for a designated south-bound bus only lane (accessed from Military Road). Apart from the immediate visual impact of the structures on adjacent residential communities, the WFU will necessitate the installation of acoustic screens in some sections, which in themselves result in further amenity (overshadowing and visual) impacts. The bulk and scale of the proposed motorway operation facilities within Cammeray Park are also of concern, particularly in the context of an LGA trying to manage population growth pressures with a finite amount of open space. As further expressed in Attachment 1, considerable critical detail is missing from the supplied documentation to allow a reasonable level of assessment. The inadequacy of information provide is in clear contravention of both the performance outcome and the detailed requirements of the SEARs. Several photo montages have been presented from extremely distant observation points and obscured by vegetation so as to seemingly obscure the true extent of visual impact.

2.8 Heritage

The project interfaces with, and impacts upon, numerous Heritage items of State and Local Significance. Input has also been requested from the Aboriginal Heritage Office to provide further advice. Due to estimated vibration and subsidence levels associated with tunneling construction, Aboriginal rock carvings such as Whale Rock and other remnant evidence of first inhabitants are at risk.

The degree of impact upon several items of maritime and convict heritage is also of particular concern including the level of potential subsidence (up to 30mm) under Council's coal loader facility. The nature of this structure is such that subsidence could render it unsafe or unable to be rectified.

2.9 Key (State and Local) Strategic Projects

The proposal will both directly and indirectly impact upon numerous adopted and draft State and Local Government strategic projects and initiatives. Some of these include; endorsed (Stage 1) North Sydney Public Domain Strategy (stage 2 is presented to Council on this agenda under separate cover), endorsed North Sydney CBD Transport Masterplan (including delivery of Miller Place), endorsed Ward Street Masterplan, Stage 1 Military Corridor Planning and draft Civic Precinct Planning studies. This will likely curtail the ability of Council to deliver upon the employment and housing targets established by the Greater Sydney Commission and reflected in Council's recently endorsed Local Strategic Planning Statement.

Council's collaboration with State Agencies on the significant improvements being discussed as part of the preparation of the *North Sydney Integrated Transport Plan,* will be significantly undermined as a result of the pursuit of the WHT project.

Whilst not specifically outlined in the SEARs as a matter to be addressed, the responsible consideration of these project needs to done in the context of the Greater Sydney Commission's *'A Metropolis of Three Cities'*, *'The North District Plan'* as well as other State Government strategies such as the Pacific Highway and Miller Street *'Road Network Plans'* and *'Principle Bike Network Business Case'*. The WFU and WHT project will either directly prevent or significantly hinder the achievement of numerous endorsed strategic directions, priorities and actions as well as specific projects within these plans.

2.10 Council Assets

The project includes the compulsory acquisition of certain sites and construction leases over other parcels of land. These are outlined in more detail within the attachment. Most, notably in late 2019 Council received formal notice to compulsorily acquire various parcels of land within Anzac, St Leonards and Cammeray Parks, for the purposes of the Warringah Freeway upgrade in accordance with the provisions of Section 106A. of the Crown Lands Act 1989 (now repealed). Transport for NSW have claimed that despite the provisions of Section 106A, of the Crown Lands Act 1989 applying to compensation, Transport for NSW are planning to restore the land and as such no structural improvements would be affected, and therefore no compensation would be payable pursuant to the compulsory acquisition in accordance with Section 106A.

As referenced under relevant headings, the permanent loss of open space and the occupation of other areas of the public domain (including open space) for extended periods of time has a tangible impact upon the well-being of a wide range of members of the broader and local community.

Whilst not part of the formal EIS documentation, TfNSW has also indicated its intention to prepare an 'Interface Agreement' to enter into with Council. The interface agreement is a legal document requiring detailed processes to be followed for related works and impact upon Council assets. Considering the relatively early stage of the project, and some of the fundamental concerns arising, this is considered premature and it is recommended that this not be progressed until further negotiations with respect to the project take place. It is recommended that Council make separate written representations regarding the need to establish a process for determining terms of reference setting out guiding principles and a framework for the development of any future Interface Agreement or Deed of Agreement in relation to all Council assets and to adequately ameliorate the identified adverse impacts of the project on the North Sydney Community.

A future Interface Agreement would provide more detail on the scope, rights and obligations for both the delivery and operational phases of the project if it proceeds. The contents of the terms sheet should first be informed by the issues raised in the detailed submission attached to this report.

3. Mitigation Measures

3.1 As presented under relevant headings in the detailed submission, a range of mitigation measures have been identified as being necessary to more clearly define and attempt to ameliorate the adverse impacts of the project. Key measures may include:

- Review modelling using revised assumptions including current population growth/distribution forecasts and Metro West;
- Include the delivery of Masterplan objectives (including delivery of Miller Place) in WHT/WFU scope;
- Review options analysis to compare the project with a Metro spur from Chatswood to Brookvale/Dee Why;
- Exploration of an open space connection between Cammeray Park and Anzac Park (NB international precedent for this kind of treatment);
- Replacement of a stormwater harvesting and reuse facility of similar operational capacity at no cost to Council;
- A substantial contribution be sought from the WHT & WFU project towards the realising of the St Leonards Park Master Plan;
- The NSW Government be requested to fund the full cost of the creation of proposed parkland at Berry's Bay, in accordance with plans developed by Council and the community;
- Consultation and community engagement commitments;
- On-going monitoring of noise construction disturbance levels;
- Provision of further detail with respect to specific properties requiring acoustic treatments; and
- Funding of additional Council staff positions to manage the wide range and complex nature of future inter-agency liaison, design and permit review, legal processes, community engagement and the like.

3.2 The identified mitigation measures have not been costed but are likely to add considerably to the overall project cost. Notwithstanding this these suggested measures are all identified as being necessary and reasonable so as to reduce the level of adverse impacts on the North Sydney community.

Next Steps

Following public exhibition of the EIS, DPIE will forward all submissions to the Applicant to prepare a Response to Submissions Report. It is understood this report will be published by DPIE and may request that Council respond to the report.

It is noted that the majority of questions and concerns raised in Council's submission of October 2018 have, for reasons unspecified, not been adequately responded to. This includes suggestions and issues raised at officer level over the past 3 years.

A firm timeframe has not been indicated as to when the Minister for Planning will determine the application.

It has also been indicated that the EIS for the Beaches Link project will be released in mid-2020.

Conclusion

This report and attachments have identified the range and nature of impacts that the WHT & WFU projects will have on North Sydney and surrounding areas. In general, it is suggested that, information provided in the EIS tends to overestimate the project benefits while underestimating the project costs, while, at the same time, suggesting that mitigation measures will be developed as problems arise.

Most fundamentally, the need and justification for the projects remains vaguely defined, particularly in an era of greater emphasis on more sustainable transport solutions to accommodate a fast growing city like Sydney. The EIS itself notes that: (in part) *Increased traffic demands and delays for traffic in the North Sydney area.* In the absence of release of a compelling business case the project represents the expenditure of considerable public monies (estimated to be in the order of $20-$30billion) for apparently minimal social, economic or environmental benefit. Notwithstanding, the higher level transport imperatives and justification for the project, this report has highlighted various tangible and ongoing significant impacts on the North Sydney Local Government Area, which are elaborated on in Attachment 1.

If the spending of such significant sums on WHT/WFU will not result in a transport network that can both accommodate future growth and improve the safety, amenity and capacity for growth in North Sydney, an integral part of the Eastern Harbour City, then an alternative transport solution that addresses both of these issues should be pursued.

SUBMISSION FROM NORTH SYDNEY COUNCIL TO THE DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT

WESTERN HARBOUR TUNNEL AND WARRINGAH FREEWAY UPGRADE ENVIRONMENTAL IMPACT STATEMENT

MARCH 2020

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Appendices

1.0 EXECUTIVE SUMMARY

This submission was considered by Council at its meeting of 23 March 2020 in response to the public exhibition of the Environmental Impact Statement (EIS) for the Western Harbour Tunnel (WHT) and Warringah Freeway Upgrade (WFU) projects.

This submission has been prepared with input from a multi-disciplinary team across Council's divisions as well as external specialist consultant input. Given the short timeframe relative to the scale of the project and volume of exhibition documentation, some sections of the EIS have not been the subject of detailed review and the response prepared to such a voluminous and highly technical document, has been influenced by the time available to comment.

The review of the EIS for these projects has identified significant concerns including; inadequate justification and need for the project, loss of and impact on open space, construction and operational road network impacts, air quality and human health concerns, environmental, visual, social, amenity and heritage impacts as well as numerous key (State and Local) strategic projects having the potential to be compromised. The analysis has also concluded that aspects of the Secretary's Environmental Assessment Requirements (SEARs) have not been adequately met in the EIS.

In general, it is also suggested that, information provided in the EIS tends to overestimate the project benefits while understating the project costs and impacts. At the same time, it suggests that mitigation measures will be developed as problems arise. This approach is problematic as it provides little assurance or confidence in the process and places an unwarranted level of trust that the community's best interests will be at the forefront of decisions by the proponent.

Due to the scale and complexity of the project and nature and number of issues arising, in some sections, the identified concerns are summarised and presented at a high level in this submission. Recommended measures to somewhat mitigate or soften impacts and matters requiring further resolution, are also provided, in the event that the project proceeds in its current form.

The EIS suggests that the negative impacts of the WHT and WFU projects on the North Sydney CBD will be minimised through:

> *…the ongoing development of the North Sydney Integrated Transport Program (NSITP) by Transport for NSW.*

It should, however, be noted that most recent communications with TfNSW suggest that development of NSITP has been postponed indefinitely.

Council has also identified the need for the preparation of Terms of Reference setting out the guiding principles and a framework for the eventual preparation of an Interface Agreement between Council and TfNSW. The Interface Agreement would provide more detail on the scope, rights and obligations for both the delivery and operational phases of the project if it proceeds. However, the contents of the Terms of Reference should first be informed by the issues raised in this submission and a meaningful and tangible response provided by the proponent.

2.0 BACKGROUND

In 2011, the NSW Government adopted the Infrastructure NSW Act (INSW Act), establishing INSW and giving it responsibility for developing the *State Infrastructure Strategy*. Clause 17 (3) of the Act states that:

> *Infrastructure NSW must, in preparing or reviewing the strategy, have regard to any State strategic priority of which Infrastructure NSW has been advised by the Premier.*

On 31 July 2014, the former NSW Premier used this clause 17 (3) provision as follows:

> *The Premier also directed that, in developing* (the SIS)*, Infrastructure NSW should take into account the following State strategic priorities in accordance with section 17(3) of the Act:* (in part) *…major projects to address congestion on key arterial routes across Sydney, including in Southern Sydney, the West and Northern Beaches, and the augmentation of WestConnex with greater north/south connectivity*. (Source - Chapter 1.1 of the State Infrastructure Strategy Update 2014).

This is significant as it effectively prioritised motorway construction before a comparative evidence-base was generated or detailed regional analysis of current and future travel patterns was undertaken, to inform decisions about the preferred transport mode or route alignment from a broad set of options. This analysis is ordinarily expected to occur in best practice strategic transport planning. The Premier's directive resulted in the inclusion of the Western Harbour Tunnel (*WHT*), on an alignment premised on a future motorway connection to the Northern Beaches (Beaches Link), in INSW's 2014 update of the *State Infrastructure Strategy*.

In July, 2018 the NSW Government released the '*Western Harbour Tunnel and Beaches Link Project Update'*. In response to this, a report was considered by Council on 29 October 2018. Council made a submission to the WHT/BL consultation, requesting clarification of numerous issues and concerns identified in the report as well as the following:

- that state government release a strategic/final business case for WHT/BL;
- that more information regarding the design, construction and operational impacts of WHT/BL on North Sydney be provided;
- that WHT/BL exhaust stacks be filtered; and
- that clarification of the impacts of *WHT/BL* on existing and future open space, sports facilities and water treatment infrastructure at Cammeray Golf Course be provided.

Whilst substantial volumes of information have been prepared and placed on public exhibition, the majority of the previously posed questions and issues remain unresolved in this EIS which may suggest that detailed submissions have not been addressed in any meaningful manner.

3.0 INTRODUCTION

The Environmental Impact Statement (EIS) is presented over a series of 28 chapters, includes voluminous specialist technical reports, assessments and documentation and totals over 9,000 pages. A 106 page 'Guide' to the EIS has also been published to accompany the exhibition documents. For the purposes of reviewing the EIS, an internal working group was formed comprising 14 staff from across Council's Directorates. Specialist external consultant expertise was sourced for some areas of the assessment including air quality and Aboriginal Heritage.

This submission presents the key outcomes and findings resulting from Council's assessment. Given the timeframe provided and the need to balance existing Council services and obligations, this assessment is not exhaustive. Whilst all chapters of the EIS were reviewed, in some instances a detailed critique has not been undertaken. For ease of reference, key outcomes and findings are grouped and presented under headings. However, it is recognised that many of the issues presented over different chapters in the EIS are integrally inter-related. For clarity of reading, in some instances additional information and analysis that informed the findings are provided as appendices.

Commentary and recommendations are also provided with respect to mitigation measures and matters required to be further addressed and resolved, in the event that the project proceeds.

Reference is made throughout this submission to the Secretary's Environmental Assessment Requirements (SEARs). These are important in that they include desired performance outcomes and objectives which the detailed specific assessment requirements must satisfy. Whilst detailed in themselves, they provide a useful framework against which, one can evaluate the adequacy of the EIS.

A detailed assessment with respect to the components of the project on the Southern side of Sydney Harbour has not been undertaken.

It should also be noted that Beaches Link is not assessed or in any way assured by the WHT and WFU EIS. As such, the combined impacts of WHT and WFU and Beaches Link in the EIS have not been able to be assessed as part of this report even though references to that project are found in the EIS.

4.0 KEY ISSUES

4.1 TRANSPORT PLANNING

Summary

The methodology applied to the development of the project is questioned. An analysis of the project methodology against best practice *How We Plan Transport* (TfNSW 2016) transport planning processes is provided below. A number of inconsistencies are identified, including: a lack of clear problem definition and analysis; omission of benchmarking and case studies; limited non-motorway options analysis; use of out-dated modelling inputs/ growth assumptions and an absence of consideration of the impacts of the Sydney Metro West project. The Sydney Metro West project is further progressed than the WHT and WFU, and will result in a significant reduction in traffic demand in the Rozelle area. It's exclusion from WHT and WFU modelling is fundamental as its inclusion in the analysis would potentially further bring into question the need for the WHT and WFU proposal.

4.1.1 Travel Behaviour Analysis

TfNSW's *How We Plan Transport* best practice transport planning manual identifies analysis of ABS journey to work data, Opal trip data, household travel survey data and travel behaviour modelling as the starting point for understanding current travel behaviour in the project precinct. This analysis has not been provided in the *EIS*. Without a clear understanding of travel patterns/problems in the project area, it is unclear:

- what problem/s the project is intended to address;
- how the project team has determined appropriate project options for investigation; or
- how the proposed projects address the Vision for Transport detailed in the State Government's *Sydney Region Plan* and *Future Transport Strategy*.

4.1.2 Benchmarking & Case Studies

National and international benchmarking of how different project options such as motorway, rail, bus rapid transit or the like, might address identified problems has not been provided as part of the EIS. However, research shows that, in general, arterial motorways result in:

1. induced traffic demand (the Lewis-Mogridge Position);
2. increased congestion at up-stream and down-stream pinch-points, particularly on local roads where future traffic capacity projects would be capitalised by Council; and
3. the undermining of existing/planned public transport services (mode shift to private vehicle due to short term improved traffic travel times) and under-investment in future public transport infrastructure and services (the Downs-Thompson Paradox).

The EIS does not provided case studies demonstrating how similar projects have delivered long-term congestion reduction and improved network resilience.

4.1.3 Customer Feedback

Infrastructure Australia's *Infrastructure Plan* notes that:

> *Instances of publicly committing to a project before detailed analysis has been completed and published can undercut public confidence in government decision making. Engaging the community at the strategic stage of infrastructure planning engenders a greater understanding within the community of future challenges and reduces the likelihood of opposition resulting from a lack of genuine consultation.*

North Sydney Council is a key *WHT and WFU* stakeholder, representing communities that, by the *EIS*'s own analysis, will bear disproportionate project costs to secure *broader network travel time and reliability benefits*.

4.1.4 Land Use Analysis and Projections – Travel Demand and Network Modelling

Roads and Maritime Services' Traffic Modelling Guidelines quote the common aphorism:

All models are wrong some are useful.

The EIS assumptions that affect the accuracy and, therefore, usefulness of EIS modelling include:

1. EIS modelling uses LU16v1.3 (2017) population growth assumptions, reflective of *A Plan for Growing Sydney* population growth projections, rather than more recent population forecasts based on growth targets detailed in the Greater Sydney Commission's *District Plans*. *Sydney Strategic Travel Model* assumptions were updated in 2019 to reflect the new population growth targets and the land use planning strategies detailed in the *Region Plan*.

2. The EIS also notes that Sydney Metro West is not included in its modelling assumptions. This means that the mode shift impacts of Metro West, including reduced traffic demand in the Rozelle area, is not accounted for in the project modelling. This results in traffic demand and congestion being overestimated in the "no project" scenario with future congestion reduction and improved travel time then over-estimated under the "project" scenario as a result.

3. EIS traffic network modelling seems to show traffic demand expanding beyond the expected ceiling capacity of certain network links in the "no project" scenario. Again, this results in traffic demand and congestion being overestimated in the "no project" scenario with future congestion reduction and travel time benefits then over-estimated under the "project" scenario. This is inconsistent with the finding of Supreme Court Judge David Kirby who, in his role as Commissioner of the Warringah Transport Corridor Commission of Inquiry (in 1983), stated that:

   "Although forecasting is always a hazardous business, there is a degree of unanimity in the predictions. The picture is one of traffic stability. Present day problems are likely to persist. But they are unlikely to get worse."

This is not to suggest that a road network planning approach of simply sitting back and allowing networks to reach a state of extended delay is acceptable. Rather, this observation is a prompt to question the perpetuation of a fixed mindset of public investment in high cost road projects which recent observations (e.g Cross-City and Lane Cove Tunnels) demonstrate are not a sustainable or cost effective long term transport solution.

4.1.5 A Vision for Transport in Sydney

In 2018, the NSW Government adopted a suite of strategies that define a clear Vision for land use and transport planning in Sydney. These documents all respond to the overarching principles detailed in the The *Greater Sydney Region Plan: A Metropolis of Three Cities* (*Region Plan*) and *The Future Transport Strategy 2056* (*FTS*). While WHT is frequently referenced in these documents, all of them recognise that WHT has not been the subject of the *complementary sectoral processes* and *strengthened disciplines that apply to the State's major infrastructure investments to ensure best value for money for taxpayers* (source - Chairman INSW) and nor has there been a final business case provided for the project.

4.1.6 Defining the Problem

While the EIS provides some general commentary regarding Sydney-wide population growth and congestion on the existing Harbour motorway crossings, it is unclear from the information provided what specific travel behaviour problem/s the projects are intended to solve. In planning for transport, problems are more usually defined in terms of current/future populations and travel behaviour with consideration given to the network impacts of future transport infrastructure. Traffic congestion and network reliability should be viewed as symptoms of travel behaviour, not problems themselves.

4.1.7 Options Development and Assessment

With no clear definition of problems and with less than 7 pages of the 9,000 page EIS document given to non-motorway option identification and analysis, the relative merits of different motorway and non-motorway project options are unclear.

It is unclear from the EIS why the original corridor, identified in INSW's original *State Infrastructure Strategy* (2012), which was defined as a *"motorway from the airport to the Victoria Road corridor, with a potential extension North to the M2"* was abandoned in preference for the current alignment.

It is also unclear why rail-based alternatives that contribute towards a more connected heavy rail network were not explored in more depth during WHT and WFU development. Analysis completed by the University of Technology's Institute for Sustainable Futures (UTS:ISF) found that a Metro spur connecting the Northern Beaches to the Sydney rail network at Chatswood (Figure 1) would:

- *Provide higher hourly capacity to destinations outside the northern sector than a WHT and BL motorway option;*
- *Enhance access along an east-west alignment to key activity centres for which there appears to be higher demand (Macquarie Park, Norwest, etc.);*

- *Enable activity centres at Dee Why, Brookvale and the Northern Beaches Hospital Precinct to form around points of concentrated pedestrian activity;*
- *Enable access to regional jobs centres where parking and road space has restricted viable ceiling capacities;*
- *Require less land-take than a motorway and expanded local distribution road network option;*
- *Cost less than motorway construction, and*
- *Provide mobility options for people who do not drive, including an aging population*

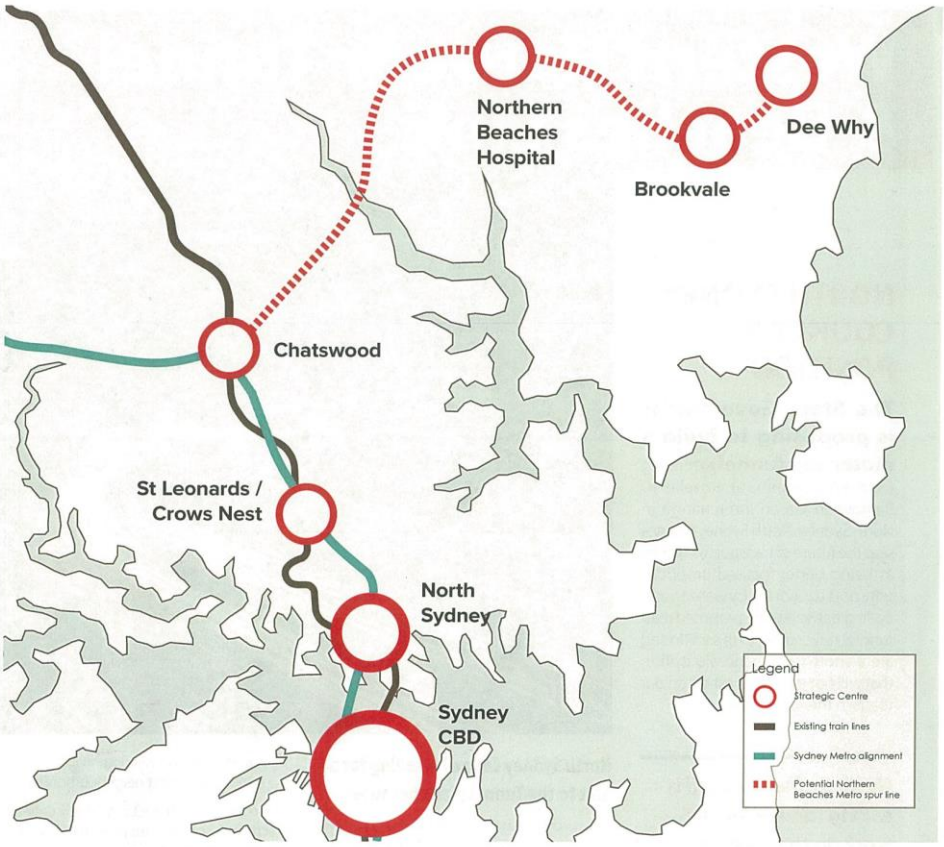


FIGURE 1 - UTS:ISF - Review of travel and transport issues affecting the North Shore in response to proposed motorway constructions

Key metrics for existing Harbour crossings (EIS Chapter 3) show that a single bus lane can accommodate nearly 50% of the person movements accommodated on the seven general traffic lanes on the Sydney Harbour Bridge. This supports the proposition that the "movement of people" in dense urban areas is most efficiently achieved by public transport and suggests that improvements to North District bus services (e.g. Military Road Bus Rapid Transit) would likely achieve better project and cost/benefit outcomes than the proposed WHT and WFU (and *BL*) projects.

The *EIS*'s dedicates less than 7 pages of its 46 page analysis of alternative project options to

alternate land use and non-motorway project options, with the remainder dedicated to different motorway tunnel alignments, alternative portal locations and construction methods. It is not possible to determine the overall relative merits (cost/benefit) of the identified options using the information provided in the EIS due to the absence of meaningful analysis of alternative non-motorway options.

The WHT and WFU proposals are not underpinned by the level of governance and transparency required to determine the best long terms transport solutions for Sydney. Undertaking a more considered and transparent development process, grounded in due process and stakeholder consultation, might have given these projects greater credibility.

4.2 STRATEGIC JUSTIFICATION

The EIS presents WHT's inclusion in federal and state strategic transport and infrastructure assurance documents as justification for the further development and delivery of both projects. However, each of these documents notes that inclusion of the project is predicated on submission of a final business case, which has yet to be completed or made available.

Further, a thorough assessment of WHT's consistency with the State Government's revised land use planning framework for Sydney (*The Region Plan*) was not undertaken as part of the development of TfNSW's *Future Transport Strategy*.

A review the WHT and WFU against NSW Government land use and transport planning strategies is provided below.

4.2.1 Infrastructure Australia: Australian Infrastructure Audit (2015), Australian Infrastructure Plan (2016) & Infrastructure Priority List (2018)

The Australian Infrastructure Audit identified the corridor between the Northern Beaches and across Sydney Harbour as among the top 30 most congested corridors in Australia. The Australian Infrastructure Plan identifies federal government policy reforms required to support better planning of major infrastructure projects. A key recommendation of this Plan is that project development studies must provide:

- *Strategic options assessments: demonstrate the nature and scale of the problem(s) and identify solutions which may or may not involve the delivery of new infrastructure; and*

- *Project business cases: provide more detailed economic assessments, including cost-benefit analysis.*

The Infrastructure Priority List identifies the WHT/BL projects as a "*priority initiative*", requiring *"further development and rigorous assessment to determine and evaluate the most appropriate option for delivery*". This means that, while Infrastructure Australia agrees that WHT/BL may be potential infrastructure solutions, a business case for these projects has not been provided to Infrastructure Australia's satisfaction.

4.2.2 State Infrastructure Strategy 2018-2038 (2018)

Infrastructure NSW has observed that *without corrective action, congestion will worsen – and the costs to business and the community will escalate – as the city's population grows* (INSW, 2014). In no way does this suggest that arterial motorways are the solution to congestion in Sydney.

Recommendation 56 of the 2018 *State Infrastructure Strategy* states that future investment in WHT should be:

…subject to completion of the business case in 2018…

Comments in Infrastructure Australia's Infrastructure Priority List (2018) suggests that this business case was not completed in the identified time-frame.

As per comments by Nick Greiner and Graham Bradley, both former chairmen of INSW during the release of *SIS 2012* and *SIS 2014*, the inclusion of the WHT project in the *SIS* should not be seen as a substitute for "*complementary sectoral processes*" and "*strengthened disciplines that apply to the State's major infrastructure investments to ensure best value for money for taxpayers.*"

4.2.3 Greater Sydney Region Plan (2018), North District Plan (2018) & Eastern City District Plan (2018)

In 2018, this suite of plans identified a new *Three Cities* approach to land use planning in Sydney. The *Region Plan* also envisions a Sydney where:

> "*…people can reach their nearest metropolitan and strategic centres within 30 minutes, seven days a week by public transport.*"

The *Region Plan* and the *North District Plan* also both note that:

> *"Committed projects of Western Harbour Tunnel and Beaches Link … are subject to final business case, no investment decision yet."*

While improved connectivity from the Mount Street overpass to the re-aligned Warringah Freeway bus lane may marginally improve bus priority in this area, the *EIS* does not list any other options for increasing 30-minute bus catchments that will be delivered as part of WHT and WFU projects or whether proposed bus lane "improvements" are the most cost-effective approach to doing this.

The EIS highlights the potential for more direct bus services running through the WHT as a potential benefit of the proposed project, However it also notes that *the inclusion of new public transport services is not proposed as part of the project" (EIS Appendix F page.41).*

It is clear that new motorways are not the most cost effective way of delivering the 30-minute public transport city escribed in these plans. Furthermore, in order to include these public transport benefits in the EIS, the project team should have *a)* determined whether re-directing buses into the tunnel is desirable and *b)* sought commitments from TfNSW's bus planning team to deliver these bus improvements as an integral part of the WHT works program.

4.2.4 Future Transport Strategy (2018), Greater Sydney Services and Infrastructure Plans (2018) & NSW Freight and Ports Plan (2018)

Identified NSW transport strategies were *updated* at the same time as *Region Plan* and *North District Plan* development in 2018. However, because these *updates* did not include a *thorough review* of transport projects already in the planning pipeline, there was no clear assessment of which *Long Term Transport Masterplan (2014)* projects support the revised land-use structure detailed in these land-use strategies.

The Future Transport Strategy and Greater Sydney Services and Infrastructure Plan also both note that the WHT/BL projects are '*Subject to Final Business Case and Funding.'*

4.2.5 Pacific Highway Road Network Plan (TfNSW 2018)

An underlying assumption of the proposed project is that designated arterial roads will continue to perform and, in some cases, increase their movement function to support the delivery of the WHT and WFU projects:

Continue to provide motorway access only via existing major road corridors.

This is at odds with the objectives detailed in TfNSW's Road Network Plans, which identify that the *place and movement* designations of the Pacific Highway and Miller Street will change to '*vibrant street'* and '*a place for people'* respectively in response to population growth, increased local walking demand in the North Sydney CBD and the introduction of Victoria Cross Metro Station on Miller Street.

Removal of the left turn slip lane between the Warringah Freeway (northbound) and Falcon Street (westbound) means that all northbound Pacific Highway traffic, with destinations between Crows Nest and Chatswood, will be channelled through the North Sydney CBD as a result of WHT and WFU proposals. This is a major change from the 50-50 split that currently occurs between the Pacific Highway and Falcon Street routes and the preferred outcome identified in the *North Sydney Integrated Transport Program*, which sought to encourage more traffic to use the Falcon Street route in preference to the Pacific Highway through the North Sydney CBD.

A *place and movement* assessment for Berry Street should have been undertaken prior to the *EIS* development in order to better understand desired *place* and *local movement* outcomes for this key barrier/connector between the current North Sydney CBD core and the future Ward Street development precinct. The proposed widening of Berry Street (under WHT) will increase the regional traffic movement function of Berry Street at the expense of local movement and place outcomes. This is inconsistent with the vision for Berry Street detailed in North Sydney Council's *Public Domain Strategy* and numerous other policies and documents as well as challenges optimal urban outcomes for growth in the Ward Street precinct. This is discussed in more detail in Section 4.14 of this submission.

Without further analysis of future *place and movement* requirements, it is unclear how proposed mitigation measures in the North Sydney CBD address *place and movement* principles *to help reprioritise access and support efficient connections for traffic, pedestrians,*

and other transport customers.

4.2.6 North Sydney Council Planning Policy

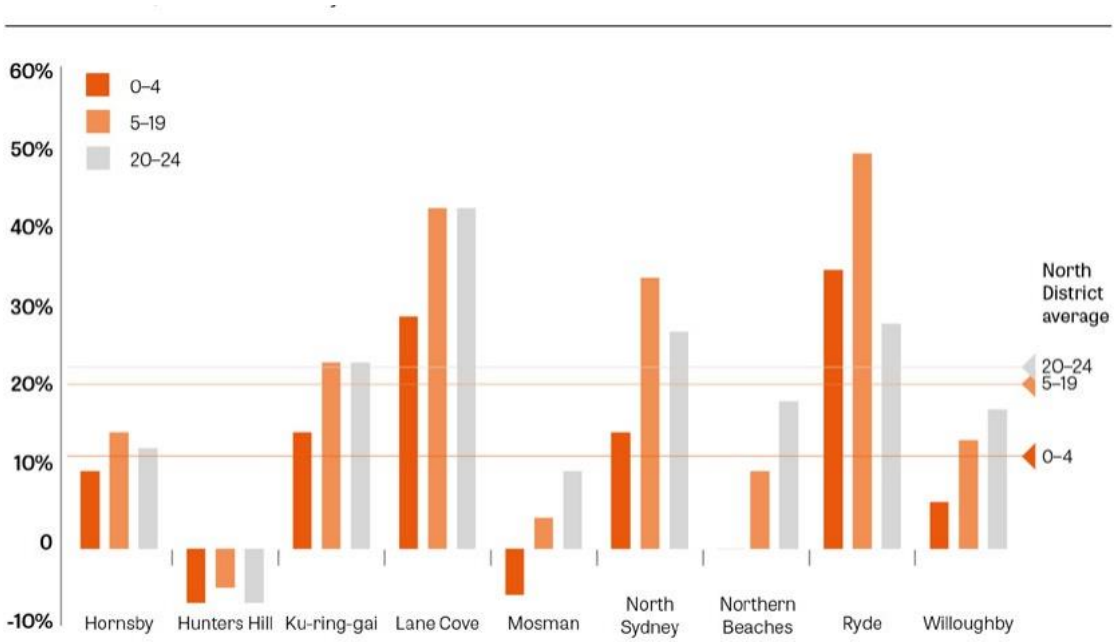
Delivery of the proposed WHT and WFU projects is inconsistent with the vision and community priorities detailed in the *North Sydney Transport Strategy* (2017) and will necessitate a comprehensive review of all North Sydney CBD planning studies developed using *North Sydney CBD Transport Masterplan* modelling outcomes: *The North Sydney Public Domain Strategy, The Ward Street Masterplan and potentially the draft Civic Precinct Planning Study*. This is discussed in more detail in Section 4.14 of this submission.

4.3 PROJECT NEED

As noted in previous commentary, best practice (TfNSW's) *How We Plan Transport* methodologies have not been used to identify regional population growth/travel behaviour problems or to ensure consistency between the projects and the state government's identified Vision for Sydney's transport. Even if traffic reduction, reduced congestion, and improved network reliability in and around the Eastern Harbour City are accepted as proxies for more traditional travel behaviour objectives, the WHT and WFU projects do not appear to achieve these objectives.

4.3.1 Sydney's Future: Population Growth

General commentary regarding population growth forecasts for the whole of Sydney give a sense of the scale of the transport problem/s that Sydney is set to face in the coming years. However, slightly more detailed analysis of population growth in the North District shows that, under the *Three Cities* approach and GSC growth targets (below), higher levels of population growth will occur in areas closer to the Central Harbour City (e.g. Ryde and Lane Cove) with less occurring in areas east of North Sydney. This suggests that improved connections between North District growth precincts and the Central Harbour City should be given higher priority than triplication of Eastern Harbour City motorway connections under adopted *Three Cities* land-use planning scenarios.



Source: NSW Department of Planning and Environment, 2016 *New South Wales State and Local Government Area Household Projections and Implied Dwelling Requirements 2016 to 2036*, NSW Government, Sydney.

Figure 2 – Projected North District projected population change (2016 – 2036) by LGA

4.3.2 Arterial Network Capacity and Congestion Reduction

Analysis of EIS modelling in Appendix F (Part 1) shows that the increased capacity provided under the "with project" scenario, results in increased traffic using existing Harbour crossings to enter constrained road networks in the Sydney CBD as well as dramatic increases in congestion on roads in and around the North Sydney CBD. Any contended arterial network capacity improvements need to be carefully balanced against additional congestion impacts on more constrained local networks. The demonstrated imbalance and direct impacts arising as a result of this project brings its effectiveness further into question. Further analysis of specific impacts is provided in Section 4.4.2 of this submission.

4.3.3 Simplifying the Warringah Freeway

Infrastructure Australia's *Infrastructure Audit* identified the Warringah Freeway as one of the most "complex" sections of motorway in Australia. Adding six new motorway tunnel portals to this network corridor, as per the completed WHT/BL project proposal, does not "simplify" the Warringah Freeway. Indeed, introducing three new portals that can only be accessed/egressed via what were originally designed as local roads in the North Sydney CBD and surrounds (Berry Street and Falcon Street), is likely to increase the complexity of trips in and around this critical section of the Sydney motorway network.

4.3.4 Traffic Network Resilience

Increased traffic capacity/traffic volumes will, invariably, result in increased redundancy requirements that can never be fully resolved by adding another crossing in the same location as other Harbour crossings. As additional capacity fills due to induced demand, the demand for even more infrastructure for incident management/network resilience also increases. It is unclear from this document how many separate road crossings are expected to be required at/around the Sydney Harbour Bridge in order to minimise network interruptions during traffic incidents in the long-term future. The reduced level of inter-operability of different 'channels' also becomes an issue for incident management.

4.3.5 By-Pass vs Destination Traffic

The North Sydney CBD is identified as a key part of the Eastern Harbour City in the *Region Plan*. The *Future Transport Strategy 2056* identifies 'Successful Places' as one of the six outcomes for the planning and management of NSW's transport network and sets out a vision for better balancing *place and movement* outcomes in major centres. It is incongruous to suggest that WHT offers a City by-pass route when one of the identified impacts of the project is to channel more regional traffic through the heart of the North Sydney CBD via Berry Street and Miller Street.

Traffic analysis provided in Appendix F (Part 1) demonstrates that delays, reduced intersection level of service and, as a result, pedestrian and driver amenity will decline on Berry Street due to proposed WHT/BL portal arrangements. The widening of Berry Street, provision of a scramble crossing and re-allocation of phase time away from pedestrians are all proposed to facilitate through traffic access in the middle of the North Sydney CBD.

It remains unclear why by-passing the Eastern Harbour City further to the west, as per the original INSW proposal, does not provide even greater opportunity for separating by-pass traffic from traffic accessing Eastern Harbour City CBDs.

4.3.6 30-minute Traffic Catchments

Analysis of pre and post WHT 30-minute traffic catchments provided in the *EIS* Chapter 9 and Appendix F (Part 1), demonstrate the fundamental disconnect between the identified outcomes of the WHT and WFU projects and the strategic objectives of adopted state land-use and transport planning strategies. The 30 minute city paradigm described in the Region Plan is public transport specific. The EIS shows increases in private vehicle accessibility. These notions are at odds with each other.

Increased accessibility by private transport increases the likelihood of trips being made by car, inducing traffic demand, increasing pressures on the existing road network, particularly at identified pinch-points, and increasing demands for further expansion of the motorway network. These come at the detriment of expansion of Sydney's public transport networks in future which Sydney will increasingly reply on to efficiently and safely transport existing and future population.

4.4 OPERATIONAL NETWORK IMPACTS

4.4.1 Summary

Following construction completion, analysis has revealed that WHT and WFU proposals, will result in various changes to the function of the surrounding road networks due to changed access arrangements to the corridor and the operation of new tunnel(s). An analysis of the supplied traffic modelling outputs has been undertaken. The project will see significant net additional traffic on Berry Street, Miller Street, Falcon Street and Pacific Highway (south of Falcon Street) as well as significant reductions in levels of service (i.e greater waiting times) at several key intersections. Channelisation of access between Ernest Street and Sydney Harbour Tunnel is also likely to result in more traffic on Military Road.

Forecast increases in traffic delay and proposed access arrangements are such that numerous State and Local initiatives, such as Miller Place, will either be unable to occur or require significant amendment as a result of WHT and WFU proposals.

The EIS documentation includes commentary that the proposed projects will result in:

- (in part) *Increased traffic demands and delays for traffic in the North Sydney area.*
- *Changes to access in and around North Sydney, which would streamline movements around North Sydney CBD but would also impact current arrangements for some residents and businesses in the area.*
- *Potential for increased demand and consequent increases to travel times between the Lane Cove Tunnel/Longueville Road and the Gore Hill Freeway.*
- *…impacts on public and active transport would include the potential for travel times on bus routes through North Sydney to generally increase in the absence of further mitigation measures.*

4.4.2 Detail

Below is a table detailing key changes proposed under the WHT and WFU projects. This table of changes along with supplied modelling data has been used to evaluate impacts and present the findings following further below.

	Current Connection	**Proposed *WHT and WFU* Connection**
1.	Warringah Freeway Tidal Flow	No Warringah Freeway Tidal Flow
2.	Sydney Harbour Bridge (SHB) and Sydney Harbour Tunnel (SHT) to Falcon Street (east- and west-bound)	Sydney Harbour Bridge and Sydney Harbour Tunnel to Falcon Street (east-bound only*)
3.	SHB to Ernest Street (no access from SHT to Ernest Street)	SHT to Ernest Street only (no access from SHB to Ernest Street)
4.	SHB to Kirribilli (free flowing via the Mount Street overpass and Arthur Street contra-flow)	SHB to Kirribilli (via Warringah Freeway-High Street slip-lane and the High Street signalised intersection)
5.	Berry Street to Warringah Freeway (northbound)	Berry Street to WHT portal, Miller Street and Brook Street (and future BL portal) only Pacific Highway to Warringah Freeway (northbound) via new High Street on-ramp
6.	Falcon Street/Military Road to Eastern Suburbs via the Cahill Expressway or SHT	Falcon Street/Military Road to Eastern Suburbs via the Sydney Harbour Tunnel only

7.	Falcon Street to Brook Street via Warringah Freeway	Falcon Street to Brook Street via Crow's Nest local roads
8.	Warringah Freeway (southbound) to Kirribilli slip-lane turning left into Arthur Street (northbound)	Warringah Freeway (southbound) to Kirribilli slip-lane to Alfred Street North (southbound) to High Street (westbound) to Arthur Street (northbound) to Mount Street overpass (eastbound) to Arthur Street underpass (northbound)**
9.	Re-alignment of the existing Warringah Freeway – Cahill Expressway bus lane	new Miller Street–Warringah Freeway overpass new Military Road-Kirribilli slip-lane overpass new Warringah Freeway–Mount Street overpass new Warringah Freeway-Mount Street overpass (above)-Cahill Freeway underpass

Table 1 - Current connections and key changes proposed

*removal of the Warringah Freeway-Falcon Street left turn off ramp will channel all Sydney Harbour Bridge traffic with destinations on the Pacific Highway south of Chatswood through the North Sydney CBD

**access to 373-437 Alfred Street North via High Street overpass-Arthur Street-Mount Street overpass only

Note – The proposed re-alignment of the existing southbound Warringah Freeway bus lane is incorrectly identified as a *new dedicated southbound bus lane* in the *EIS*.

EIS operational traffic modelling provided in Appendix F (Part 1) provides a range of existing and forecast traffic, trip-time, delay and level of service data for "no project" and "project" scenarios. In the "no project" scenarios, the modelling seems to show traffic demand expanding beyond expected network ceiling capacities. This approach appears erroneous in that when (or if) traffic conditions pass tolerable levels, motorists (particularly those driving by choice rather than absolute necessity) typically turn to alternative routes, move to public transport or adjust journeys.

Assuming that the current motorway network is currently at or approaching capacity and comparing these "ceiling limits" to future "with project" modelling scenarios, a clearer picture of how WHT and WFU traffic outcomes will compare to current traffic conditions is presented.

4.4.3 Current vs Forecast Traffic Volumes on Cross-Harbour Links

Road	**Direction**	**Traffic Volumes**					
		2016		2027 (WHT&WFU)		2037 (WHT&WFU)	
		AM	PM	AM	PM	AM	PM
Western Harbour Tunnel	Northbound	-	-	2,650	2,500	3,700	3,050
	Southbound	-	-	2,650	1,950	3,500	2,650
Sydney Harbour Bridge	Northbound	4,850	6,150	5,500	5,450	5,800	6,250
	Southbound	5,500	3,150	5,600	3,500	5,950	3,700
Cahill Expressway	Southbound	2,600	2,500	2,650	2,500	2,850	2,600
Sydney Harbour Tunnel	Northbound	3,950	3,850	2,900	3,050	3,300	3,200
	Southbound	3,700	2,850	3,950	2,900	4,200	3,300
Total	Combined	20,600	18,500	**25,900**	**21,850**	**29,300**	**24,950**
Traffic Growth		-	-	**+26%**	**+18%**	**+42%**	**+35%**

Reduced Traffic	

Increased Traffic	
Significant Traffic Growth (+25%)	

Figure 3 - Traffic volumes on cross harbour links (Sourced from EIS Appendix F)

Figure 3 shows that:

- under the "project" scenario, there will be more southbound traffic entering the Sydney CBD via existing Harbour crossings than in 2016;
- within 1 year of opening, WHT and WFU will stimulate +26% and +18% total traffic growth for Harbour crossings in the PM and AM peak respectively, with +42% and +35% additional traffic demand stimulated by the projects by 2037; and
- short-term reductions in traffic demand for Harbour Bridge northbound lanes will disappear in the longer term and, although there will be more significant reductions in northbound traffic demand in the Sydney Harbour Tunnel in the short-term, this will edge back towards equilibrium by 2037.

This suggests that the WHT and WFU proposals do not deliver on the congestion reduction objectives detailed in the EIS and that alternative, non-motorway options should be explored that might better solve Sydney's transport & traffic network problems.

While the EIS paints a flattering picture of travel time improvements within the Warringah Freeway Corridor, these travel time improvements are, in some part, due to the impact that Metro mode shift is expected to have on traffic demand in the Metro corridor, do not appear to account for downstream delays due to limited traffic capacity in the Sydney CBD, and rely on channelisation of specific trips within the Warringah Freeway, which could be achieved with or without the introduction of WHT.

4.4.4 Current vs Forecast Delay and Intersection Level of Service

Road	Delay/Intersection Level of Service (LOS)											
	2016				2027 (WHT&WFU)				2037 (WHT&WFU)			
	Average Delay (sec)		Level of Service		Average Delay (sec)		Level of Service		Average Delay (sec)		Level of Service	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Miller Street/ Ernest Street	34	31	C	C	44	42	D	C	44	57	D	E
Miller Street/ Falcon Street	35	69	C	E	27	65	B	E	41	79	C	F
Ernest Street/ Warringah Freeway	<5	15-18	A	B	19	14-23	B	B	21	14-18	B	A-B
Falcon Street/ Warringah Freeway ramps	38	46	C	D	31	79	C	F	47	89	D	F
Berry Street/ Walker Street	32	50	C	D	48	75	D	F	55	76	D	F
Berry Street/ Miller Street	30	27	C	B	53	56	D	D	55	>100	D	F
Mount Street/ Arthur Street	84	32	F	C	27	34	B	C	33	63	C	E
Mount Street/ Walker Street	43	31	D	C	35	93	C	F	46	>100	D	F
Pacific Highway/ Arthur Street	53	19	D	B	23	16	B	B	25	23	B	B
Pacific Highway/ Walker Street	53	48	D	D	38	71	C	F	33	70	C	F
Pacific Highway/ Miller Street	52	41	D	C	63	63	E	E	65	>100	E	F
Pacific Highway/ Berry Street	9	11	A	A	35	97	C	F	61	>100	E	F
Miller Street/ McLaren Street	24	17	B	B	41	41	C	C	50	76	D	F
Miller Street/ Ridge Street	39	26	C	B	45	18	D	B	66	38	E	C
High Street/ Clark Road	>100	36	F	C	32	94	C	F	59	82	E	F
High Street/ Alfred Street	60	18	E	B	18	58	B	E	21	53	B	D
Mount Street/ Alfred Street	24	11	B	A	12	12	A	A	13	11	A	A

Improved Intersection Level of Service	
Somewhat Reduced Intersection LOS	
LOS Blow-outs	

Figure 4 - Comparison of current intersection delays vs projected (Sourced from EIS Appendix F)

Figure 4 presents an analysis of delays and intersection level of service in and around the North Sydney CBD and demonstrates how proposed changes to road access and network arrangements in North Sydney Central Business District (CBD) will result in dramatic increases in congestion in and around the North Sydney CBD. Significant increases in congestion at the Berry Street/Walker Street, Berry Street/Miller Street and Pacific Highway/Berry Street intersections will make it impossible to deliver road closures,

pedestrianisation and major place improvements in the North Sydney CBD such as Miller Place. These improvements were feasible in the *North Sydney CBD Transport Masterplan* due to low traffic growth scenarios identified using Greater Sydney Commission growth targets and mode share outcomes identified using Metro EIS passenger modelling. Since the development of the CBD Transport Masterplan, early data has indicated the first stage of the North West Metro operation (Rouse Hill – Chatswood) has exceeded Metro modelling and passenger predictions. This is supportive a wider increase across Sydney of mode shift to public transport and further evidence of Council's preferred strategic direction and vision being the correct path to take.

4.4.5 Bus Travel Times – Warringah Freeway and surrounds

Route	**Direction**	**Bus Travel Times**					
		2016		2027 (WHT&WFU)		2037 (WHT&WFU)	
		AM	PM	AM	PM	AM	PM
Sydney Harbour Bridge to Amherst Street (via Miller Street and North Sydney Station)	Northbound	13.02	13.08	10.38	13.01	11.15	23.41
	Southbound	11.21	11.51	10.08	19.23	11.58	15.20
Sydney Harbour Bridge to Bay Street (Via North Sydney Station and Pacific Highway)	Northbound	9.29	6.41	5.57	8.12	6.22	11.30
	Southbound	7.28	7.29	9.46	15.15	14.48	19.45
Sydney Harbour Bridge to Ben Boyd Road	Northbound	6.39	6.45	4.59	4.43	5.05	4.45
	Southbound	6.14	5.34	5.13	5.36	5.49	5.10
Sydney Harbour Bridge to Lane Cove Tunnel (via Gore Hill Freeway)	Northbound	7.10	6.13	5.40	6.13	5.38	6.13
	Southbound	7.09	6.36	6.35	6.46	7.12	6.36
Total Bus Travel Time Change		1.08.32	1.04.07	58.56	1.07.09	1.08.17	1.29.00
% change in Bus Travel Times		-	-	-14%	+5%	~0%	+39%

Reduced Bus Travel Times	
Increased Bus Travel Times	
Significantly Increased Bus Travel Times (+25%)	

Figure 5 – Projected Bus Travel Times (Sourced from EIS Appendix F)

Figure 5 above provides and an analysis of the EIS modelling and reveals that short-term AM peak bus travel time benefits are off-set by poorer travel times in the PM peak and will disappear rapidly in the medium-term under the "project" scenario. Given that no additional bus services and limited bus infrastructure improvements are delivered as part of the WHT and WFU proposals, these short-term bus travel time benefits may be more reasonably attributed to the impact of Sydney Metro on traffic demand in the project area.

The EIS suggests that these impacts will be minimised through:

> "…*proposed changes to road access and network arrangements in North Sydney Central Business District (CBD), as well as the ongoing development of the North Sydney Integrated Transport Program* (NSITP) *by Transport for NSW."*

…and that:

> *"The broader network travel time and reliability benefits delivered by the project are expected to outweigh increases to localised delays."*

However, the proposed changes to road access and network arrangements in the EIS (e.g. Warringah Freeway-Falcon Street slip-lane removal and widening of Berry Street) are inconsistent with key project recommendations and directions agreed previously through the NSITP. A reduction in regional through-traffic in the North Sydney CBD and delivery of Miller Place are at complete odds with the road and network changes proposed under the WHT and WFU project. The impact of the proposed projects on traffic demand in the North Sydney CBD mean that it is extremely unlikely that delivery of the majority of NSITP and Public Domain projects will be achievable if the WHT and WFU projects proceed.

4.4.6 Operational Network Conclusion

The analysis above reveals that, generally any regional journey travel time benefits are short lived and come at a direct and profound impact on North Sydney in terms of local traffic and amenity. The analysis supports Council's position that the development of mass transit is the only responsible direction that can be taken.

Council has participated in the NSITP process which has been a collaborative one with placemaking and city building for the North Sydney CBD being key considerations and drivers for the programme. Council's Transport Masterplan and Public Domain Strategy were important inputs into this process which clearly articulate Council's vision for the CBD, particularly in a post Metro world. Whilst it is encouraging that the EIS has referenced this work, in reality, its future appears to be more uncertain. Indeed, pursuit of the WHT project in its current form, would necessarily undermine the realisation of many of the positive city building interventions identified by Council. These are discussed further in Section 4.13 of this submission.

4.4.7 Recommended Actions Required

1. That the scope of the WHT and WFU projects is revised to include the delivery of agreed North Sydney Integrated Transport Program directions.
2. That, subject to the delivery of a business case for the WHT and WFU projects, a comparative analysis of the relative costs and benefits of WHT and WFU and a Metro Spur between Chatswood and Brookvale/Dee Why be undertaken.
3. This analysis should be undertaken prior to the inclusion of the WHT and WFU projects in future state strategies or delivery funding allocations are made in the NSW budget and that costs and benefits for each project are assessed in accordance with GSC Performance Dashboard criteria.
4. That updated travel demand and network modelling be undertaken for the WHT and WFU EIS using the following modelling assumptions:

- Use of updated land-use planning assumptions reflective of Sydney Region Plan strategic land-use outcomes and North District Plan growth targets.
- Inclusion of Metro West in network modelling assumptions.
- Recognition of the impact of road ceiling capacities on traffic demand under “no project” scenarios.

4.5 CONSTRUCTION TRAFFIC NETWORK IMPACTS

4.5.1 Summary

The construction period for the project is estimated to be over 5 years. During construction there will be significant disruption to the Warringah Freeway Corridor including periods of partial and full closure. There will be significant flow-on impacts on other arterial and local roads in the North Sydney LGA. In addition, a number of proposed tunnel spoil and equipment routes and access to construction support sites (via local streets) will have substantial amenity and infrastructure impacts.

4.5.2 Detail

Key elements and impacts of the construction aspects of the WHT and WFU include;

- 13 construction support sites proposed along the corridor within the North Sydney LGA which each generate associated construction traffic.
- The temporary occupation of land within ANZAC Park would be required to support construction activities. There is no further detail about what specific activities will be undertaken within Anzac Park and at what stage in the project schedule this will occur.
- The project also proposes significant temporary and permanent changes to traffic and parking conditions on Alfred Street North associated with the Ridge St pedestrian bridge relocation/reconstruction; Alfred Street widening; Mount Street interchange
- Upgrades at the signalised intersection of Ernest Street and Merlin Street to signalise the proposed secondary construction access into Cammeray Park – opposite Merlin Street.
- During construction the project will impact the Active Transport Network at Jeafferson Jackson Reserve, the Warringah Freeway overpass at Merlin Street, and shared user underpass on the eastern side of Falcon Street including extra travel distance imposed with diversions.
- Up to 128 parking spaces on local roads will be temporarily and/or permanently (73) affected by the project during construction.
- The project is expected to increase traffic, including heavy vehicle volumes, on local roads which is likely to be felt by residents. The risk to vulnerable road users also increases with more heavy vehicles travelling on local roads.
- Projected 2024 cumulative construction traffic is expected to have significant impacts on intersection performance at several intersections. This may result in traffic diverting or rat-running onto the local road network which is of concern.

A further overview of the key impacts is provided at Appendix No. 1. This table includes a summary of identified construction routes to and from different identified sites, estimated (heavy and light) vehicle movement numbers, construction duration, loss of on street parking and impact levels on pedestrians and cyclists.

4.5.3 Active Transport Impacts

Pedestrian and cycling access across the Ridge Street shared user bridge will be maintained until the new bridge is completed. Construction vehicle and cycling conflicts on Ridge Street have been identified in the EIS and are proposed to be "actively managed" during construction.

Pedestrian and cycling access across the Warringah Freeway bridge at Merlin Street will be maintained until the new overpass bridge is completed.

Pedestrian and cycling access on the underpass on the eastern side of the Falcon Street bridge will be permanently closed during the initial stage of the Warringah Freeway Upgrade works. The EIS notes that usage of this underpass is very low (12 movements per hour), however diversions via existing zebra and signalised crossings at Falcon Street and Military Road will result in up to 380m extra travel distance for these users.

Pedestrian and cycling access on the Jeafferson Jackson Reserve Shared User Path will be diverted via temporary adjustments during construction of the new shared user bridge resulting in an additional 400m of travel distance.

Pedestrian and cycling access on the Warringah Freeway shared path adjacent to the Cammeray Golf Course will be temporarily realigned to travel along the rear of the construction support site to connect to the Merlin Street and Ernest Street intersection. This will result in an additional 100m of travel distance for these uses, however will not coincide with the Jeafferson Jackson Reserve diversions.

Sydney's Cycling Future (2013) states that bicycle infrastructure will be delivered as part of "*major transport and development projects*" and that:

"*We will invest in state priority corridors to safely link inner Sydney customers to Sydney's CBD from the north, east, south and west. This includes connections to North Sydney...*"

While the WHT and WFU project does include the "*new for old*" replacement of existing North Sydney walking and cycling infrastructure (e.g. Ridge Street walking and cycling bridge) to accommodate the geometric requirements of traffic on the re-designed Warringah Freeway, it is clear that little consideration has been given to Council's walking and cycling infrastructure priorities as there is no commitment to the delivery of new walking or cycling infrastructure in in the EIS.

4.5.4 Parking Impacts

The proposal will result in the temporary loss of approximately 32 parking spaces for the duration of construction in Ridge Street, Merlin Street and Ernest Street.

In addition, up to 96 parking spaces will be removed on Alfred Street North between Wyagdon Street and Whaling Road to facilitate construction works, and only 23 of those spaces will be replaced at the completion, representing a permanent net loss of 73 parking spaces on Alfred Street North.

Parking in the North Sydney LGA is in very high demand and the removal of this quantum amount of parking is likely to be felt by the local community, and place additional demand on the remaining limited parking resource in the surrounding localities.

4.5.5 Alfred Street North Impacts

Alfred Street North is not identified as a specific construction site, however, works associated with the Ridge Street pedestrian bridge reconstruction, Alfred Street widening, and Mount Street interchange will involve temporary long-term closures throughout construction which will impact local traffic access in Alfred Street North and the adjoining streets.

4.5.6 Construction Traffic Impacts

Modelling of the relative increase in volumes on local roads as a result of the projected 2022 construction traffic in Chapter 6 & 8 of the EIS shows minimal impact in terms of intersection performance and mid-block capacity on local roads when compared with the 2022 base case without construction traffic. As with operational traffic modelling, these figures are reliant on the efficacy of traffic modelling assumptions.

The definition of the impact on residential/environmental amenity by varying levels of traffic flow is extremely complex. Perceptions of impact vary greatly from person to person. Traffic flows that one person may find perfectly acceptable may be considered excessive by another. Impact is affected by the nature of the street and the area in which it is located, its width, building setbacks, grades, etc. as well as by the speed of traffic and the mix of cars and heavy vehicles.

The relative increases in traffic volumes as a direct result of construction of this project, including increase in heavy vehicles, on local roads is almost certain to be felt by the community, particularly in residential streets with low to moderate traffic volumes including Bay Road, Balls Head Road, Ridge Street and Rosalind Street which are likely to see noticeable increases in overall traffic volumes and noticeable increases in the proportion of heavy vehicle traffic as a result of the construction works for this project. North Sydney has experienced a dramatic increase in heavy vehicle traffic through high pedestrian areas in recent years associated with private development and major transport infrastructure projects. With the increase in the number of heavy vehicles, the risk to vulnerable road users including pedestrians and cyclists increases.

Modelling of the relative increase in volumes on the local road network as a result of the projected 2024 cumulative construction traffic in Chapter 6 & 8 of the EIS shows significant impacts on intersection performance at several intersections. Intersection service level of D indicates the intersection is operating close to capacity; intersection service level of E indicates the intersection is operating at capacity, and at signals incidents will cause excessive delays; intersection service level of F indicates average delay of more than 70 seconds per vehicle. Intersections with service levels of E or F are likely to result in drivers choosing to divert to other streets to avoid congested intersections which may result in additional traffic using the surrounding local road network or “rat-running” which is concerning.

The intersections where service levels are expected to reduce to E or F under cumulative 2024 construction traffic conditions are presented in the table below:

Intersection	LOS 2024 Base Case	LOS 2024 Cumulative Construction	Period Affected
Brook Street/Warringah Freeway	E	F	AM Peak
Miller Street/ Falcon Street	D	E	AM Peak
Mount Street/ Arthur Street	E	F	PM Peak
Pacific Highway/ Bay Road	E	F	AM Peak

Table 2 – Intersection levels of service during construction

4.5.7 Recommended Mitigation Measures

- Site specific Construction Traffic Management Plans for approval by North Sydney Traffic Committee or Sydney Coordination Office in consultation with North Sydney Council
- Heavy Vehicle Road Safety Campaign coordinated by Transport for NSW
- Site specific green travel plans including consideration of shuttle bus services between public transport hubs and construction support sites to reduce number of private vehicle trips of construction workers.
- All pedestrian and cycling facilities and shared user paths, including temporary diversions, must be designed and constructed in accordance with RMS Bicycle Guidelines and Austroads Cycling Guidelines.

4.6 OPEN SPACE IMPACTS

4.6.1 Summary

The construction and post-construction impacts on a number of areas of public open space cannot be overstated. Of most significance is the permanent loss of over 2.89Ha of much valued land in Cammeray Park along with removal of Council's stormwater harvesting facility. Also of strong concern, is the proposed occupation of a large portion (7,272m^2) of St Leonards Park for 5 years of construction and its proposed return state condition. If the project proceeds, the development of a strategy for negotiation of financial and open space offset compensation is warranted. Council resolved at its meeting on 24 February 2020, that it seek assurances that the NSW Government "guarantee that there will be no net loss of public recreation space as a result of (the WHT) project". Given the extent and nature of impacts outlined further below, a broader approach is also recommended so that the substantive negative impacts generated by this project are offset by a commensurate mitigative response. There is no reason why such a major project as this should not strive to also leave a lasting positive legacy for those who reside in, work in, and visit North Sydney.

4.6.2 Detail

The proposed WHT and WFU involves the following direct impact on areas of public open space;

Cammeray Park/Golf course

Total Area to be occupied during construction – **48,187m^2**

Area (included in figure above) to be used during construction and be permanently lost due to placement of operation facilities – **28,896m^2**

Removal of existing stormwater harvesting and recycling facility (providing 30million litres per annum for re-use/irrigation purposes)

St Leonards Park

Area to be occupied during construction only - **7,272m^2**

Note – Return state unclear due to lack of clarity in plans. Final designs may reveal areas of parkland will not be returned in acceptable or useable state.

Anzac Park

Area to be occupied during construction only – **1083m^2**

Diagrams depicting the location of areas to be the subject of construction licences and permanent acquisitions are provided at Appendix 2.

Open Space - Alfred Street Park and High Street Reserve

Whilst not Council owned Open Space two further areas of open space that are currently publicly accessible will also be impacted upon as follows;

Alfred Street Park - Area to be occupied during construction only – **1800m^2.**

Alfred Street Park - Area to be permanently lost due to associated road works and intersection changes – **1096m^2.**

High Street Reserve - Area to be occupied during construction only – **2100m^2**.

Berrys Bay

The EIS proposes that the Berrys Bay ex-industrial lands, including the former BP site working waterfront parcel and the former Woodleys ship-yard be utilised as a major work-site (WHT7) for tunnelling operations, including utilisation of existing structures for site administration facilities, construction of an excavated access decline tunnel through the cliff-face on the northern perimeter of the former BP site parcel and construction of a number of maritime facilities for operation of barges and other vessels.

The NSW Government has announced that following the completion of the works that the site will be converted to public parkland and transferred to Council's management. The NSW Government has undertaken to work with Council and the community towards achieving this objective.

Whilst this announcement has been welcomed, there is concern that the extent of intervention proposed for the temporary worksite will cause irreparable damage to significant heritage elements. These likely impacts include:

- Damage to the cliff-face by removal of rock for the decline access tunnel,
- Damage to potential archaeological remains on the former BP site including to the possible remains of the former torpedo store, former Berry storehouse and associated out-buildings and remnants associated with the BP phase of site occupation and
- Damage to the historic Woodleys slipway.

Due to the high heritage significance [Waverton Peninsula Conservation Management Plan - Godden Mackay Logan, 2000] of the Berrys Bay foreshore area (and in particular the head of the western arm of the Bay known informally as Woodley's Cove), it is critical that the proposed worksite construction and operation does not in any way damage the elements deemed to be of high – moderate heritage significance. The EIS document only notes *"**Where feasible,** the construction support site has been designed to retain and protect these structures"* This is unacceptable. A formal undertaking needs to be provided that the project construction will not damage any elements of heritage significance.

The qualitative impact of the prolonged (+ 5 years) and permanent loss of open space will be profound. Open space provides a vital role in the social, mental, physical health and well-being of the population. As recognised in the Greater Sydney Commissions North District Plan, open space is under ever increasing pressure to provide for the needs of a growing population. In North Sydney this issue is further heightened as the majority of new dwellings and growth is

occurring in the form of residential flat buildings where alternate private areas of open space and relief are simply not available in the form of the traditional back yard.

The loss of, and impact upon open space as a result of the WHT and WFU represents a gross and demonstrable harm that needs prioritised review.

Prior to the project proceeding, a comprehensive open space and compensation/damage mitigation strategy needs to be negotiated in order to plan for and ameliorate the lost and degraded utility of all impacted areas of open space. This strategy requires inter-governmental support and sign off prior to progression of the project. The strategy or 'Terms of Reference' need to be binding and would then inform more detailed matters relating to consultation, detailed design, project timing, land tenure, maintenance and the like. This approach, also recommended across Council's other Asset classes (refer commentary under heading 4.15), will reduce the level of contestability on a site or issue specific basis over the life of the project.

4.6.3 Recommended Mitigation Measures

It is recommended that, if the project proceeds, the impact of loss of open space and visual intrusion of the permanent motorway facilities proposed be addressed by the following:

Cammeray Park Recommendations

1. That the permanent motorway facilities to be set down into the landscape such that the roof of the building is in the order of 500 mm below the height of the Ernest Street footpath level. The roof of the motorway facility building is to be designed as a slab suitable for a green roof over, thus allowing the park to extend over the building. This will allow for the view to the north to be unhindered by the building envelope, enabling the open space to flow from the proposed green connection across the freeway north of the Ernest Street bridge. Any additional excavation or construction disturbance associated with this approach would be offset by the benefits of enabling the park landscape to extend over the buildings at (Ernest) street level, and better enable some view preservation and open space connections.
2. That a substantial land-bridge be constructed linking the south west corner of Cammeray Park with the western side of Anzac Park. The scheme in the EIS proposes a narrow green 'median' only as part of the 'shared user path' section of the reconstructed Ernest Street bridge. Rather, the land-bridge should seek to create a generous reconnection of open space parcels that were severed by the construction of the Warringah Freeway in the 1960s. Both of the above are conceptually illustrated below:

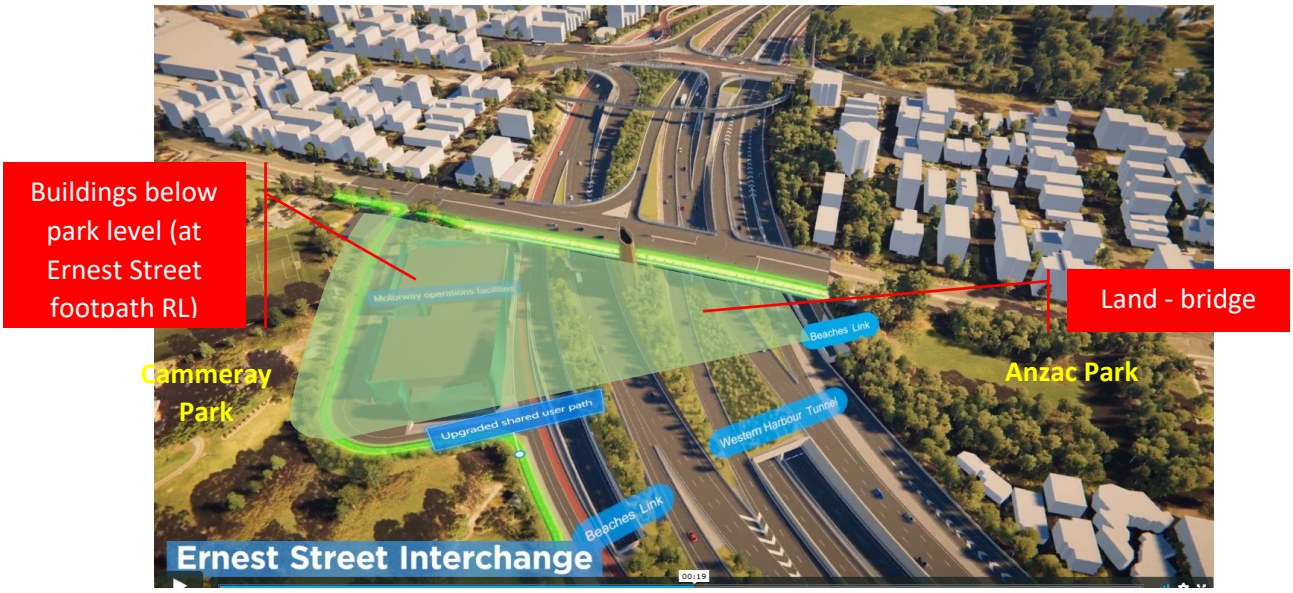


Figure 6 – Land bridge concept

3. That a further, smaller section of land-bridge be established if feasible where the Ernest Street off- ramp joins Ernest Street linking to the existing open space along the western side of the corridor, and a crossing point be established across Ernest Street at this point to the new land-bridge. This will assist to facilitate continuous pedestrian & open space corridor through to Jeaffreson Jackson Reserve to the south and towards St Leonards Park, as illustrated below:

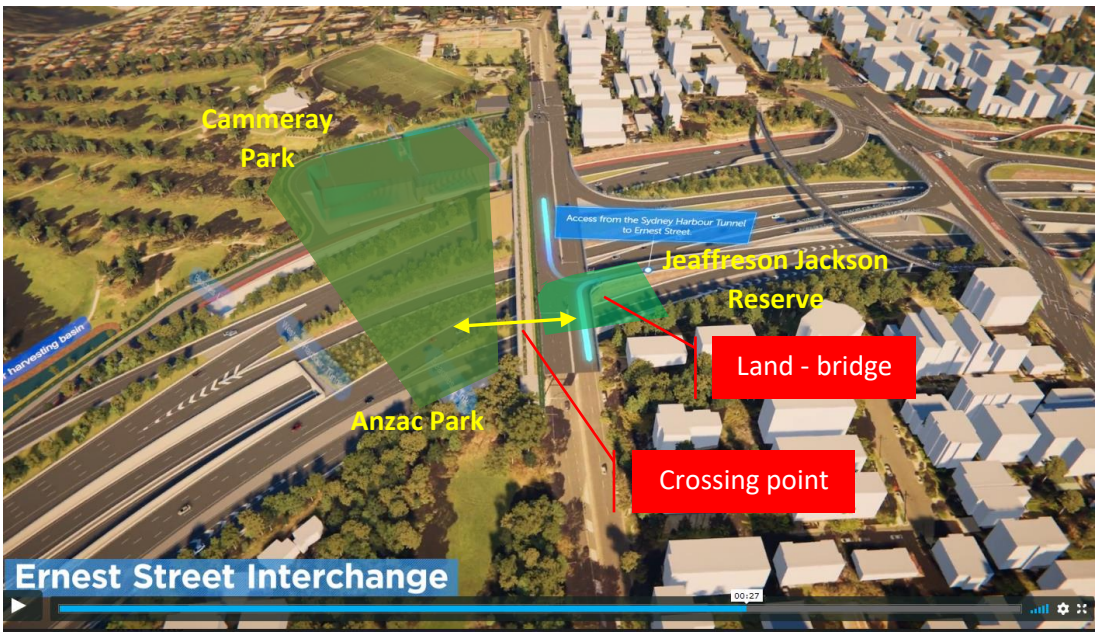


Figure 7 - Land bridge concept and suggested treatments

4. That the proposed ancillary facilities structure shown to be located on north side of Ernest Street, opposite Merlin Street be re-designed where possible to also be under the park.

St Leonards Park Recommendations

1) That a substantial contribution be sought from the WHT and WFU project towards the realising of the St Leonards Park Master Plan.

Berry's Bay Recommendations

1) That the project is conditioned to ensure there is no loss of heritage due to the occupation of the Berrys Bay sites for the construction activities.

2) That Council engage the services of an independent heritage consultancy to assess the potential impacts of the project to the heritage of Berrys Bay.

3) That the services of an independent heritage assessor should be engaged (at no cost to Council) to monitor the ongoing protection of heritage elements for the duration of the construction project.

4) That should the cliff-face be disturbed for the incline tunnel entrance that the sandstone bedrock be carefully removed in sections, stored for replacement at the end of works (a similar approach was successfully achieved with the tunnel portal at Tunks Park for the Northside Storage Tunnel incline entry point).

5) That in order to ensure that future open space reflects the values of the North Sydney community the NSW Government be advised that Council wishes to take the lead on consulting the community and preparation of design plans for the future open space parcels. Appropriate levels of funding are requested to support this process.

6) That the NSW Government be requested to fund the full cost of the creation of the parkland (including remediation), in accordance with plans developed by Council and the community immediately, following the cessation of the tunnel project.

A copy of draft principles and related matters to be considered in the redevelopment of the Berrys Bay sites is included at Appendix 3). A copy of these draft principles have previously been provided to the WHT design team.

The temporary use of the Berrys Bays sites will cause substantial impacts to the Waverton Peninsula during the years of tunnel construction activities (in the order of 4 or more years). This will include loss of the foreshore access path that connects between the western end of Carradah Park and Balls Head Road (a popular pedestrian route) for this period. In order to offset some of these impacts in the short term, it is further recommended that:

7) That Council seek the necessary support and sufficient funding from the NSW Government to establish (as soon as possible and before the Berrys Bay lands are occupied for the tunnelling project) a replacement link path - following the route from the end of Balls Head Road, southwards along the existing access driveway behind the Woodleys administration building, then connecting via a boardwalk to the pathways within the former Quarantine Depot, and then to the existing track within Balls Head Reserve.

8) That this link pathway includes stair access to the existing Council beach in the head of the western arm of Berrys Bay (Woodley's Cove).

This link pathway will in some way provide an offset to the Carradah Park to Balls Head Road pathway to be lost during the tunnel construction period.

A copy of the proposed pedestrian pathway route is also included at Appendix 3. This pathway proposal has previously been discussed with the WHT project team, who have indicated general support for this idea. These concepts are presented for illustrative and discussion purposes and do not represent any final formal position of Council.

4.7 AIR QUALITY

The report accompanying the EIS has been referred to an external industry specialist. This analysis included a review of the methodology applied and provides subject matter expertise in this area with respect to the technical aspects and overall adequacy of the report.

The location of the proposed ventilation stacks is a key concern for the community as has been repeatedly articulated at various forums since the announcement of the projects.

One aspect of the methodology that warrants further interrogation is the assumption that background air quality growth will continue on its current trajectory (under a no-project scenario). Modelled emissions increases (resulting from the project) are then represented as a portion or measure above the projected air quality. This methodology appears flawed in that the same modelling also takes some account of projected emissions reductions likely to occur over time, assumedly to present the proposed project in a more environmentally favourable light. It has also been identified that the soon to be revised NO_2 (Nitrogen Oxide) standards proposed in the National Environment Protection Measure (Ambient Air Quality) should be applied to the project as part of a more general reassessment of the potential impacts of the proposal. These include that;

- Sensitivity tests should be performed for the surface roads which could have a much greater impact on the predicted concentrations at sensitive receptors.
- Consider the limitations in the assessment of odour impacts from traffic and reassess proposal.
- Consider the limitations in the meteorological modelling and reassess proposal.
- Assess and consider mitigation measures near surface roads such as barriers, setbacks, gradient, vegetative barriers, etc.

The (non) filtration of ventilation stacks on motorways across Sydney has been a highly contentious issue throughout communities surrounding these sites. The detail provided in support of this project is extensive and highly technical in nature. It ultimately reaches the conclusion that the appropriate design of ventilation outlets would achieve the same outcomes as installing air filtrations systems and do not represent an unacceptable health risk to the community. The community's willingness of acceptance of any risk to human health (associated through the concentration of an emissions point as a result of this project), is understandably low.

Even if one were to accept the evidence on face value, the precautionary application of a filtration system, in line with various international practices, should be considered, a prudent and more responsible approach to this issue. This would better satisfy the projects SEARs Air Quality objective '*to minimise air quality impacts to minimise risks to human health and environment to the greatest extent practicable'*. The additional cost associated with this would be negligible in the context of the total project cost. The need to implement real time dust monitoring programs for construction sites and other high risk areas including the provision of localised air quality management plans is also highlighted.

4.8 HUMAN HEALTH, SOCIAL AND ECONOMIC IMPACTS

4.8.1 Summary

A review of several chapters of the EIS has been undertaken, issues grouped and synthesised into the commentary below. Some aspects of the project are also addressed more specifically under separate headings. The overarching comment however, is that despite a dedicated chapter entitled 'cumulative impacts', the EIS approach of compartmentalising each aspect of the project under individual technical headings fails to adequately take into account the more human and lived aspects of the project and likely impacts on individuals and groups arising. As a result, this submission reaches a conclusion that the project has not adequately *'minimised adverse social and economic impacts'* nor *'minimised impacts to property and business, including appropriate access to community facilities*' as is identified in the SEARs issued for the project.

4.8.2 Acquisitions

Included in Chapter 20 are sites within the North Sydney LGA affected by compulsory acquisitions. Council owned/controlled sites are addressed in Section 4.14 of this submission. Privately owned lands impacted by full and partial acquisitions include;

172 Falcon Street - Sections of private non-residential property on Falcon Street would be permanently acquired for permanent road corridor works on the Warringah Freeway. Its current function is as Hare Krishna Catering and the Hare Krishna Movement place of worship.

Figure 8 - 172 Falcon Street – proposed partial acquisition

Whilst specific areas (m^2) are not identified it is expected that the current uses and activities on the site will be able to continue.

Morden and Bellevue Street properties - Detailed addresses (Lots/DP descriptions) are not provided in the EIS, however, a location plan and description are provided below.

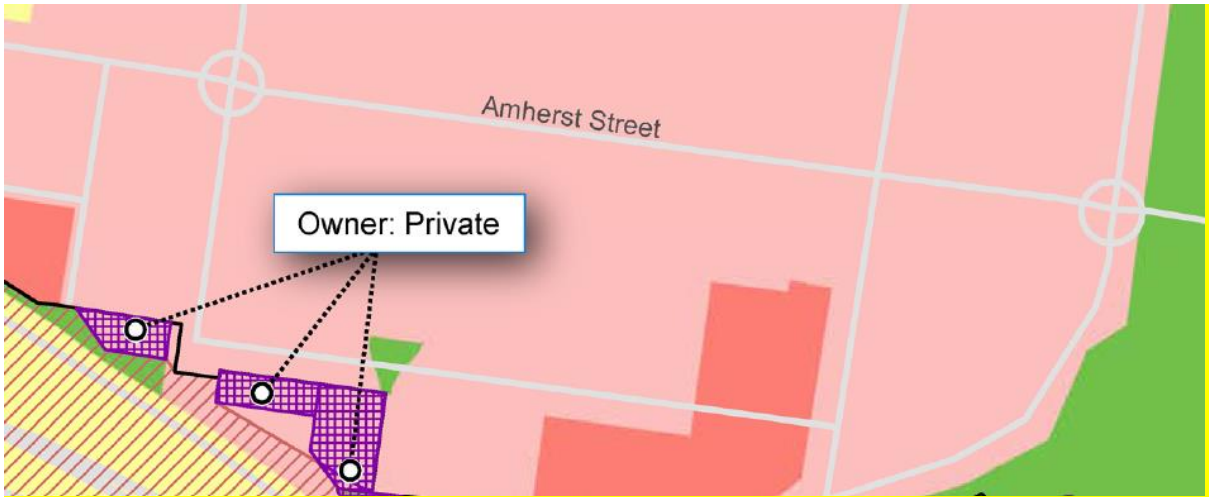


Figure 9 - Location plan of acquisition sites – Morden and Bellevue Streets Cammeray

A residential flat building comprising twelve (12) units on Morden Street at Cammeray would be fully acquired and demolished for use during construction. Following construction, the site would be re-habilitated with an undetermined future use and ownership.

Two (2) residential dwellings on Bellevue Street Cammeray would also be fully acquired and demolished for use during construction. Following construction, the sites would be re-habilitated with an undetermined future use and ownership.

Figure 10 - Ernest Street – partial acquisition

A section of privately owned residential property (refer Figure 10 above) would be permanently acquired for the permanent road works. The area the subject of acquisition is not specified but is described as being around 5% of the total property area. No qualitative description has been provided with respect to impact.

All compulsory property acquisitions are required to be carried out in accordance with the Land Acquisition (Just Terms Compensation) Act 1991. The EIS also states that landowners and tenants affected by acquisition will be supported by access to counselling services throughout the process and a community relations support phone line to respond to community concerns.

Concern is raised that compulsory acquisitions associated with projects of this nature, whilst having a legislative process, do not have adequate regard to and impact upon affected community members in varying ways including;

- Mental health issues such as ongoing stress, anxiety and uncertainty;
- Ongoing engagement with State Government and the Justice system over a long period of time, in some cases lasting years;
- Forced relocation to potentially distant locations due to unaffordability to remain in the local community due to inadequate compensation;
- Physical health issues; and
- Loss of connection to their local community, social infrastructure and in certain cases family networks.

The extent of these genuine 'human' impacts can vary greatly between individuals depending on a large number of variables including the immediate surrounding support network that may or may not be available. These impacts do not appear to have been given detailed consideration in the EIS.

4.8.3 - Human Health

Vibration, noise, dust and pollution as a result of the project have an impact on a variety of social infrastructure and amenities. Construction close to child-care centres impacts on the need for children to sleep at various times through the day along with the higher levels of pollution potentially affecting health and development. Equally, shift workers or persons in a more fragile state of health can feel the noise impacts more greatly than other individuals. As detailed further under Section 4.10.2 the extended length of the construction process and severity of disturbance can have significant impacts.

The Public Domain Strategy which includes Council's flagship projects in Ward Street and future pedestrianisation of Miller Street between the Highway and Berry Street would be significantly affected. Council's plans to activate and enrich these areas making them family and pedestrian friendly zones would be frustrated and Council's placemaking strategies further jeopardized. The EIS does not undertake any detailed assessment of the impact of the WHT and WFU upon a number of endorsed policies and strategies in terms of lost opportunities that could have improved the amenity, human health and well being of North Sydney residents, workers and visitors.

Whilst difficult to quantify, it is highly likely that some residents or businesses will move out of the area due to the impact of construction and it is very possible that damage will occur to property as a result of tunnelling as has been the case most recently with the 'Westconnex' project. It is not clear how the State Government will meaningfully address such concerns during and post construction. Evidence from "*The Impact of the WestConnex Project"* report

indicates that such impacts are typically not resolved satisfactorily for residents, property and business owners. The obtaining of financial compensation in regard to damage to homes has been shown in this report to be problematic and inadequate.

4.8.4 - Economic Impacts

Potential positive economic impacts associated with the project include increased employment and trade during the construction period. Were the network improvements and need for the project and various impacts justified, then theoretically there may be some wider economic benefits arising from increased access and connectivity across wider Sydney.

These potential benefits are far outweighed by the identified negative economic impacts which include;

- increased congestion, traffic noise and pollution in North Sydney LGA during construction and operation;
- reduced availability of short-term public parking during operation and construction;
- loss of revenue, relocation and business closure from acquisitions and leasing during construction; (e.g. Cammeray Golf Course and The Greens)
- loss of visual amenity, noise, light spill and dust during construction increased traffic, reduced access/loading and servicing during construction;
- opportunity cost – the investment in the project will negate other projects such as an extension to the Sydney Metro, which offer more proven long-term and sustainable economic and social benefits;
- the North Sydney Economic Development Strategy recommends a range of actions to reduce congestion and improve the pedestrian experience in North Sydney CBD, St Leonards and other commercial centres, the project will have a negative impact on this work;
- the North Sydney Visitor Economy Strategy identifies the importance of a sustainable approach to developing the North Sydney LGA as a destination, the project will have a negative impact on this work.

Overall, the WHT and WFU project will cause significant health, well-being and economic impacts, the majority of which will be borne by the North Sydney community including residents, workers and visitors. The issues and impacts arising from the project have been included and considered in the EIS, however, have done so in a segmented and clinical manner such that the full extent of impacts, as they will be experienced by people, have not been appreciated and holistically accounted for.

4.8.5 – Recommended Mitigation Measures

Should the project proceed it is recommended that;

1. Impacted businesses be compensated where indirectly and financially impacted by the project (ie. Not be limited to just those impacted by acquisitions).
2. Provision of adequate dispute resolution processes and communications.
3. Provision of adequate offsets for lost open space and recreation opportunities.
4. Provision of adequate and readily navigable systems for redress in the event of severe

impacts, particularly those the subject of acquisitions.

5. Provision of counselling and support services to those impacted by the project by way of financial, physical or emotional distress.

4.10 ENVIRONMENTAL IMPACTS

4.10.1 Summary

The detailed technical content with respect to Environmental Impacts is presented over several chapters in the EIS. A review has been undertaken, issues grouped and synthesised into the commentary presented below under headings.

The proposal includes the use of submerged tunnel construction method that requires significant dredging and sediment disturbance of the harbour floor. In consideration of the Sydney Metro City and South-West project, (currently under construction), this method of construction was deemed to present an unacceptable level of risk and tunnel boring (under the harbour floor) was deemed the most environmentally sensitive construction method. This is clearly articulated in the Metro EIS (Chapter 4.6) *"the likely environmental impacts associated with dredging and cofferdam construction in the harbor would be considerable."*

Several significant environmental concerns have been identified with respect to impacts on water quality in Balls Head Bay, marine biodiversity, foraging habitat as well as known roosting sites of threatened species. Other related bushland impacts, including the loss of Council's stormwater harvesting and filtration facility in Cammeray Park, and other access concerns, are also outlined.

More broadly, the project facilitates and promotes more journeys being undertaken by private vehicle. As is broadly accepted in traffic planning, greater road capacity generally leads to 'induced demand' as motorists take advantage of such increased capacity and the congestion problems, over time, continue to be replicated on an increasing scale. This will lead directly to an increase in greenhouse gas emissions and particulate matter. In the context of the recent declaration of a National Climate Emergency by many jurisdictions, including North Sydney Council, this along with the loss of Council's stormwater harvesting facility in Cammeray Park, renders the WHT and WFU projects incongruous from an environmental perspective.

4.10.2 - Construction Noise and Vibration

Chapter 10 of the EIS examines the potential noise and vibration impacts associated with construction of the project including the predicted noise and vibration impacts to what are referred to as 'receivers' through all construction aspects of the project. Throughout the project, it is identified that noise and vibration will impact residential receivers; other sensitive receivers such as childcare centres, places of worship, educational facilities; and commercial premises, during daytime, evening and night-time periods.

The report advises that predicted noise management levels will be exceeded for a given number of receivers by various degrees, with the majority of receivers being impacted by less than 10 decibels dB(A) over the noise management levels. It should be noted that the noise management level represents the background noise level (the noise without the construction noise) plus 10 decibels dB(A). Therefore, an exceedance of the noise management level is more than 10 dB(A) above the background noise level. The report advises of the number of potentially impacted receivers in the North Sydney Council suburbs and the predicted degree

to which they will be impacted.

Having described the different sources of noise and forms of noise and vibration that may impact receivers, the report goes on to advise that these matters will be addressed by a Construction Noise and Vibration Management Plan.

The Construction Noise and Vibration Management Plan for the project has not been provided at this stage. The EIS outlines the broad intended content that this Plan will contain however concerns are raised over this approach as it is not known;

- what noise and vibration mitigation measures will be adopted;
- approach and methodology for such;
- how many of the noise affected receivers will benefit from mitigation measures;
- the degree of noise reduction that the mitigation measures will achieve;
- the anticipated noise level that will be experienced by receivers post mitigation;
- the duration of noise events for each receiver;
- what protocols for out of hours construction works will be applied;
- what monitoring details will be undertaken nor;
- the criteria for deciding what constitutes ‘reasonable and feasible mitigation and management measures’.

This approach is concerning as it leaves a somewhat open ended and uncertain level of impact with an unconfirmed management structure during the project’s construction. Similarly, an-out-of-hours works protocol will be developed detailing the works required outside of standard construction hours including the assessment and justification for such.

Construction noise and vibration impacts will be monitored periodically throughout all stages of the construction of the project to ensure impacts are consistent with levels detailed in the Impact Statements and that impacts are being appropriately managed and are effective. Concerningly, ‘periodically’ has not been defined. As above it is not indicated at this stage what mitigation measures are to be in place or the noise and vibration reduction expected from such.

Vibration generating activities will be managed through the establishment of minimum buffer distances to achieve screening levels. Where vibration levels are predicted to exceed the screening levels, a more detailed assessment of the impacted structure and attended vibration monitoring will be carried out to ensure vibration levels remain below appropriate limits for that structure. The more detailed assessment/s have not been provided at this stage.

For heritage items, the more detailed assessment will specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed. A number of heritage structures in this LGA are predicted to be within the minimum working distances for major vibration-generating activities. These assessments have also not been provided at this stage and present an unacceptable level of risk.

Mitigation measures are identified to be implemented for surface road works, local area and

utility works, where construction activities are predicted to exceed noise management levels at receivers. Where 'feasible and reasonable' the approaches that will be used include:

a) Carrying out works during the daytime period when near residential receiver
b) Selection of plant and equipment to minimise noise and vibration impacts
c) Management of plant and equipment to minimise the generation of noise and vibration impacts
d) Community consultation, engagement and notification
e) Detailed programming and respite protocols
f) Where out of hours works are required, programming the noisiest activities to occur during the less sensitive time periods
g) Out of hours works protocols
h) Limiting timing of noise intensive work
i) Use of portable noise barriers around particularly noisy equipment such as concrete saws and rock hammers in cases where it will effectively reduce noise levels at nearby receivers
j) Management of construction traffic to minimise movements during the night periods along local roads
k) Establishing minimum vibration buffer distances for vibration intensive works
l) Vibration and blasting trials and/or monitoring along with building condition surveys.

Similarly, the terms 'feasible and reasonable' have not been defined for these situations and present a level of uncertainty as to what approaches may actually occur to mitigate impact.

The EIS also identifies the potential for blasting works to be undertaken, assumedly to expedite the construction process. A Blast Management Strategy will be prepared in consultation with the NSW Environment Protection Authority to demonstrate that all blasting and associated activities will be carried out in a manner that will not generate unacceptable noise and vibration impacts or pose a significant risk impact to structures and sensitive receivers. This strategy has not been provided at this stage.

Given the above it is difficult to assess the noise levels that are actually expected to be experienced as the information has not been provided as to exactly how the impacts will be managed/mitigated. The outcomes expected from mitigation are also not specified, nor the number of receivers who will or will not benefit from mitigation works.

4.10.3 – Operational Noise

Chapter 11 of the EIS considers the potential noise and vibration impacts associated with the operation of the WHT and WFU project.

The chapter provides guidance for assessing traffic noise from existing roads not subject to any redevelopment. This is where there is a predicted increase in traffic noise levels by more than 2 dB(A) on other roads due to changes in traffic volumes associated with the project. Guidance for considering sleep disturbance due to maximum noise levels is also provided.

Overall, forty-two per cent of receiver buildings are predicted to experience traffic noise level increases of less than 2 dB(A) which represents a minor impact that is likely to be largely

imperceptible (2058 receiver buildings during daytime near the Warringah freeway and 1223 receiver buildings at night).

One per cent of receiver buildings are predicted to experience increases greater than 2 dB(A) due to the project. (54 receiver buildings during day and night times near the Warringah freeway).

The project is predicted to decrease the number of receiver buildings exceeding the relevant noise criteria when compared to the 'Do Minimum' scenario during the day and night periods at noise catchment areas surrounding the Warringah Freeway Upgrade and the Gore Hill Freeway Connection. This is due to traffic being moved from the existing surface roads into the proposed tunnels. The premise of this assumption and methodology is challenged as it does not account for induced demand. Induced demand is the additional traffic generated by the shorter term improvements to a traffic network that typically occur following the opening of major road projects.

A noise barrier analysis was also completed to identify reasonable and feasible locations where barriers would be provided. Noise barriers were considered reasonable and feasible where four or more receivers trigger consideration of noise mitigation and are closely grouped (ie facades are separated by less than 20 metres), where the barriers do not make access to properties difficult, and where they are visually acceptable.

Noise barriers would be provided or extended as part of the project where 'reasonable and feasible' to reduce road traffic noise to acceptable levels for sensitive receivers. The indicative location of these is identified in the diagrams below.

Figure 7-1 – Noise barriers considered in the NMG analysis at Warringah Freeway and surrounds (south)

Figure 7-2 – Noise barriers considered in the NMG analysis at Warringah Freeway and surrounds (centre)

Figure 7-3 – Noise barriers considered in the NMG analysis at Warringah Freeway and surrounds (north)

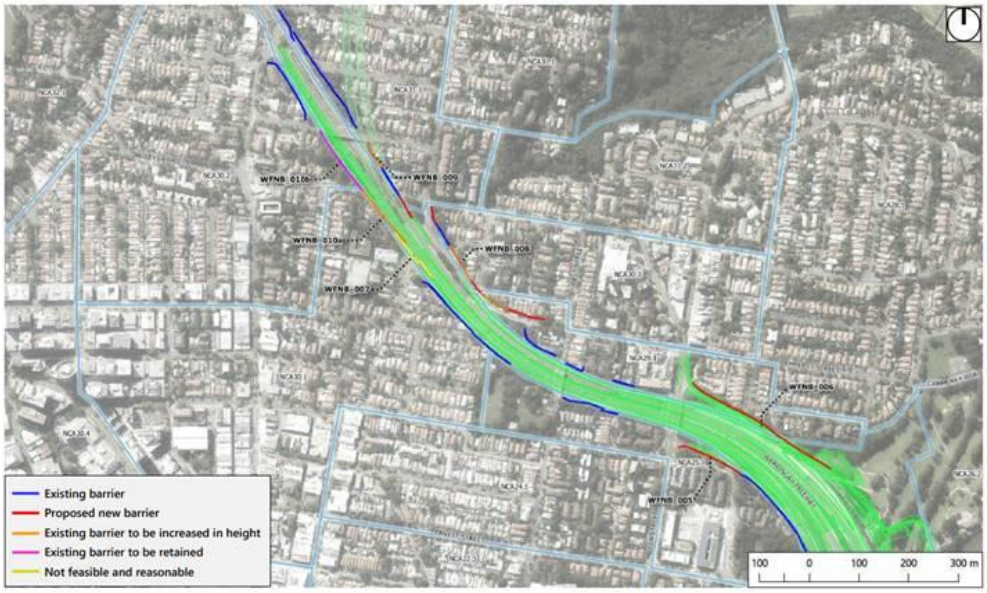


Figure 11 - Existing & Proposed Noise Barriers - WHT EIS Appendix G (Part 1), pages. 536-538.

Further assessment has been conducted to compare the 'Do minimum' and the 'Do something cumulative' scenarios, including proposed low noise pavement and proposed new and existing extended noise barriers.

The number of receivers to be considered for at-property treatment after low noise pavement and new and existing extended noise barriers have been included of which 340 receiver buildings in the North Sydney LGA identified.

At-property treatments may include; ventilation, glazing, window and door seals, sealing of vents and underfloor areas. Noise mitigation options (quieter pavement, noise barriers, at-property treatment or a combination) will be reviewed and confirmed as part of the further

design development taking into consideration community preferences.

Within 12 months of the commencement of the operation of the project, actual operational noise performance will be compared to predicted operational noise performance (as reviewed during detailed design) to analyse the effectiveness of the operational road traffic noise mitigation measures. Additional 'reasonable and feasible' mitigation will be considered where any additional receivers are identified as qualifying for consideration of noise mitigation.

4.10.4 – Biodiversity Impacts

Construction of the Western Harbour Tunnel will likely result in a concerning level of impact on terrestrial and marine biodiversity. Whilst the Biodiversity Chapter of the EIS (and related appendices) are relatively comprehensive and do identify the main potential impacts of this project, strong concerns are raised particularly with respect to the proposed coffer dam to be constructed immediately west of the Coal Loader platform/sea wall (WHT6); seabed disturbance related to tunnel trenching, and construction/ongoing operational impacts caused by the Berry's Bay support site (WHT7). Key aspects of impact and concern are presented below under relevant headings.

Sydney Harbour north coffer dam (WHT6)

Key concerns include;

- There are serious potential implications for water quality in Berry's Bay caused by disturbance of marine sediments and pollutants potentially contained within these sediments.
- Balls Head Bay is a known foraging habitat for two regularly occurring threatened species (Little Penguin and Large-footed Myotis), the latter of which occupies a permanent roost in Balls Head Bay which limits the range of its foraging habitat to local embayment's around Balls Head.
- Reduced water quality caused by suspended sediments or contamination could affect the availability and fitness of food resources for both the Myotis and the Little Penguin.
- Vibration and noise associated with the construction of the coffer dam may negatively affect the use of tunnel No. 4 under the Coal Loader platform by roosting Eastern Bent-wing bats (a listed threatened species). Eastern Bent-wings are known to be sensitive to noise and vibration and will vacate roosts where these factors are present.

Seabed tunnel

Key concerns include;

- Preparation of the seabed for tunnel installation involves dredging of and estimated 900,000m^3 of marine sediments (some which are known to be contaminated) which presents a risk to water quality in Balls Head Bay and therefore presents a risk to threatened species known to forage in Balls Head Bay.
- Other marine threatened species identified in the Biodiversity Chapter (Black Rockcod; White's seahorse etc) are also potentially placed at risk as a result of the project.
- It remains unclear why this construction method is being pursued when in relatively

recent consideration of the Sydney Metro City and South-West project, (currently under construction), this method of construction was deemed to present an unacceptable level of risk and tunnel boring (under the harbour floor) was deemed the most environmentally sensitive construction method. This is clearly articulated in the Metro EIS (Chapter 4.6) *"the likely environmental impacts associated with dredging and cofferdam construction in the harbor would be considerable."*

Berry's Bay Construction Support Site

Key concerns include;

- Tunnel access ramps, proposed for construction from the Berry's Bay support site to the main tunnels will result in noise and vibration (including the potential for rock blasting) in close proximity to a known autumn/winter roost of the Eastern Bent-wing Bat (a listed threatened species).
- Balls Head Reserve is classified as Category 1 bushfire prone land. The placement of a construction support site on the north-east boundary of Balls Head Reserve presents a potential risk to the site – particularly if rock blasting explosives are planned for storage at the facility.
- 24hr construction activity in this area may impact on the lifecycles of other native species (both terrestrial and marine), in the vicinity of Berry's Bay and North Sydney's largest remnant bushland, Balls Head Reserve.
- Currently, a narrow band of dense weedy vegetation occupies the vacant foreshore land below No.3 Balls Head Road, Waverton. This vegetation provides a vital habitat link between Balls Head Reserve and Carradah/Waverton Park. Removal of this vegetation, as part of the construction support site development, would interrupt this connecting wildlife corridor and create an impediment to wildlife movement between foreshore reserves.
- A small sandy beach located between the Old Quarantine Station and Woodleys marina is used as an access point by mooring holders in Berrys Bay. Access to the beach is currently via the Woodleys driveway. This access should be retained as part of the WHT7 site design or an alternative access point for mooring holders should be provided. In either scenario, access via the construction of new walking tracks through bushland in Balls Head Reserve must be prevented.

4.10.5 - Recommended Mitigation Measures

1. That clearer commitments and processes be provided in relation to noise monitoring and mitigation works
2. Further investigation be undertaken of the potential for water quality impacts caused by dredging/disturbance of contaminated marine sediments and coffer dam construction in Balls Head Bay.
3. Assessment of potential water quality impacts affecting the food resources/foraging habitat of the Large-footed Myotis colony that roosts in Balls Head Bay and feeds on marine invertebrates and small fish etc.
4. Measures should be set in-place to monitor vibration/noise in the Coal Loader microbat roost (Tunnel No.4) during the known roosting period (Autumn and

Winter). Where levels exceed a specified tolerance level, vibration-related works must cease, and an alternate non-impacting construction methodology adopted.

5. A bushfire hazard assessment should be undertaken in relation to WHT7 with recommended protection measures incorporated within the WHT7 site design (not the adjoining Balls Head Reserve).
6. Consideration should be given to community access to the foreshore of Berrys Bay, just north of the Old Quarantine Depot. This area is currently used by mooring holders in Berrys Bay and is accessed via the old Woodleys Marina driveway. If the operation of WHT7 results in restricted access, an alternative access point should be provided that does not negatively impact Balls Head Bushland Reserve (i.e. no new tracks in bushland).
7. WHT7 should be designed to retain a dense vegetated link between Balls Head Reserve and Carradah/Waverton Park, immediately below No.3 Balls Head Road.

4.10.6 - Geology, Soils and Groundwater

Chapter 16 of the EIS provides an assessment of the construction and operational impacts associated with aspects such as acid sulphate soils, salinity, erosion, groundwater, ground movement and soil contamination. The key impacts in this area are largely based around soil contamination both from the terrestrial and aquatic environment and how the project managers intend to remove, transport and dispose of the material. It is not clear in the EIS how this is to be achieved. Other impacts in this chapter include potential ground settlement from the tunnel construction under Balls Head and the impact on the Coal Loader buildings and Platform and the potential soil remediation of Waverton Park due to the tunnel construction.

It is identified in the EIS that there is a high potential for soil erosion on existing slopes during construction particularly at Berrys Bay, Berry St (east) and Ridge St (east) construction support sites. Excavated or stockpiled soils have the potential to runoff construction sites during periods of rainfall due to the steep nature of the sites. Detailed soil and sediment erosion management plans for those sites are required.

Chapter 16 also states that the sediments in Sydney Harbour pose a potentially high risk due to contamination associated with historical industrial use. Contaminated sediments are highly likely to be disturbed during dredging activities for the immersed tube tunnel together with establishment of the coffer dam near Balls Head. The documentation then discusses where those sediments might be disposed. The chapter presents two options, one of which is offshore disposal via an application to the Commonwealth Department of the Environment and Energy which would be assessed against the National Assessment Guidelines for Dredging. This disposal method assumes that the sediment would be stockpiled and taken by ship transportation to a disposal point offshore. The other method would be to a designated landfill and this assumes that the disposal transportation method would be via road transport. In order to determine likely impacts on the environment and amenity affects on local residents at interim stockpiling sites, it would be necessary for the documentation to be definitive on a disposal point.

Similarly, it is necessary to be made aware of the quantity of contaminated material that will be stored/stockpiled, the anticipated length of time that material will be stockpiled and the steps

that will be undertaken to ensure that material is kept in such a condition that will pose no risk to the environment, local residents and construction personnel.

Chapter 16, at page 28, estimates that ground movement of a range of 25 to 30 mm may occur in the vicinity of Berrys Bay as a result of tunnel induced movement caused by relief of stress from tunnelling through intact rock or settlement induced by groundwater drawdown. The submitted documentation defines the typical impact of this sort of settlement as:

"Cracks easily filled. Redecoration probably required. Recurrent cracks can be masked by suitable linings. Cracks may be visible externally and some repointing may be required to ensure weather tightness. Doors and windows may stick slightly. Typical crack widths between 1-5 millimeters."

Given the age of the Coal Loader structures including the platform it is necessary to require the proponent to conduct an independent dilapidation survey of the Coal Loader facility so in the event of damage occurring as a result of construction, an agreed survey is in position to rely as a reference point. This approach is also considered necessary more widely as recent similar projects in Sydney have resulted in substantial damage to private residences located above or in the vicinity of tunnelling.

4.10.7 - Recommended Mitigation Measures

1. That further details be provided on the final disposal point for contaminated material that is proposed to be removed from existing terrestrial contaminated sites and/or from aquatic dredging from the harbour floor.
2. Confirmation of the final disposal point of the contaminated material will dictate the transportation needed to reach that disposal point and hence the likely impacts on the local community ie truck and/or barge movements.
3. That details be provided on the quantity of contaminated material will be stored/stockpiled and the anticipated length of time that material will be stockpiled for.
4. A detailed dilapidation survey be prepared for the Coal Loader buildings and the platform on the basis that tunnelling and construction of the nearby coffer dam may result in ground settling in the vicinity of the Coal Loader structures.
5. That further details of the soil and sediment erosion management plan for the Berrys Bay construction support site be priovided.

4.10.8 - Flooding

Chapter 18 of the EIS provides an assessment of the potential impact on flooding as result of the project both during construction and in its proposed finished state. Key issues and concerns identified include;

- Berry Street north (WHT8) will have the potential to increase flooding for the downstream properties, particularly in Hampden Street and subsequently downstream to the existing harbour tunnel.

- Ridge Street north (WHT9) will have the potential to increase the rate of flow within the Warringah Freeway. It is also unclear at this stage what impacts this will have in the Ridge Street minor catchment
- Cammeray golf course (WHT10 and WFU8) will have the potential to increase flooding conditions for the downstream properties. The proposed works to increase the size of the undersized line installed under the Tollway from ANZAC Park to the golf course will have the effect of increasing the pressure on the downstream system. There are known existing issues with flooding downstream of the golf course, particularly in Creek Lane which will be exacerbated by increasing the flow in this line. Mitigation works will need to be undertaken to minimize this impact.
- Arthur Street east (WFU4) will have the potential to increase flooding inundation along the properties along Arthur Street and needs to be assessed in detail.
- James Milson Village would have an increase of 75mm of peak flood depth. There have been flooding issues in the village previously and whilst works were undertaken approximately 5 years ago to lessen the effects, it is unclear whether the increase has been adequately modelled.
- Nook Avenue would have an increase of 55mm of peak flood depth. Again, there are already issues at the end of Nook Avenue where it flows into the Sydney Water channel.
- The North Sydney reuse dam is also now classified as a stormwater detention and reuse basin. The final use of the golf course needs to be determined in order to design and construct a suitable facility before works commence in order to maintain the viability of this important scheme during as well as after construction. This is a large interconnected system that needs a lot of work to finalise before the dam is removed for construction purposes, and cannot be left until an undefined point in the future.
- Similarly, the new freeway crossing needs to consider the impact on the downstream properties in Falls Street, Park Avenue, Grafton Street, Cammeray Road Warringa Road, and Creek Lane – that are already under pressure in the current regime. The increase in flows will worsen this situation.
- The change in flood depth maps are hard to read with the use of very similar shades of green for both ”***land rendered flood free”*** and ***“land flooded as a result of the changes”.*** More detail of the affected properties is required.

4.10.8 Recommended Mitigation measures

1. That stormwater and flooding impacts be satisfactorily resolved prior to any construction works commencing.
2. That adverse impacts identified be satisfactorily addressed and further detailed analysis guide appropriate actions. Once the final design levels, details, impacts are known, a full design impact analysis needs to be undertaken with suitable rectifications of the impacts of this project.

4.10.9 – Sustainability, Resource Use and Waste Management

Water use

The average total water demand during construction is estimated to be 1327 kilolitres per day. Approximately 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). While the significant component of non-potable water use is supported, the remaining use seems excessive given the current drought and climatic conditions. The proponent is urged the to look for further ways to reduce the potable water intensity of this project. For example, install an additional stormwater collection & filtration scheme to the one that will be replaced in Cammeray, elsewhere in the North Sydney Local Government area in consultation with Council.

Electricity use

The indicative temporary power requirements of the construction support sites are extraordinarily high (4-8.5 MVA). By way of comparison, this could power 16 to 34 North Sydney Olympic Pools (Council's most energy intensive facility). More concerningly is the anticipated operational electricity consumption of the project of some 32 MVA or 128 times the power requirements of the North Sydney Olympic Pool. Given the current climate emergency, North Sydney Council strongly urges the NSW government to ensure that the project is powered by 100% renewable energy, including onsite generation at the construction sites (eg: solar PV systems) and particularly that renewable energy is integrated into the ongoing operation of the resulting infrastructure project itself.

Water quality

The majority of wastewater generated during construction would be through groundwater infiltration in the tunnels. It is unclear what level of water testing and treatment will occur and whether this will guarantee the groundwater is not contaminated. North Sydney Council requires that water is tested and treated at construction wastewater treatment plants prior to reuse or discharge. The indicative average wastewater treatment plant discharge volumes summarised in this chapter are equivalent to one olympic sized swimming pool being discharged into Berry’s Bay and Willoughby Creek every 10 days. It is unclear what remedial actions are planned to ensure the likely impacts of this amount and velocity of water are minimised on the receiving waters (such as erosion and scouring) and what modelling has been done and preventative measures will be put in place.

Indicative sustainability objectives and target themes

Minimise energy use and greenhouse gas emissions: Rather than limiting the target theme to energy efficient lighting wit is suggested that this be broadened to "energy efficiency" of the entire project and that "renewable energy" is added as a target theme.

Optimise resource efficiency and waste management - Given the current waste and recycling crisis, the state mandate to support a circular economy, and the federal 80% average resource recovery target by 2030, rather than limiting recycled content to road.

Efficiently manage water - To ensure the Cammeray stormwater reuse scheme, or equivalent, remains operational through and after construction, it is suggested that the addition of "Retain existing non-potable water capture, treatment and supply" be included in the target theme.

Maximise sustainable procurement - To maximise sustainable procurement, it is suggested that adding "Recycled content" and "Australian made" be added as target themes.

Application of the principles of ecologically sustainable development to the project (Table 25-5)

Below are several ESD principles contained within the EIS followed by commentary challenging their actual effectiveness.

"Contribution to improving the capacity, functionality and safety of Sydney's transport network for motorists, buses and freight" - The efficacy of the cited long-term traffic and transport benefits of this project are strongly questioned (as detailed in Section 4.1-4.4 of this submission) and therefore the merit of a car/vehicle based approach to achieving ESD principles.

"Reduction of operational greenhouse gas emissions on Sydney's road network when compared to the project not being built" There is no tangible evidence for the provided for the basis of this statement.

"About seven hectares of vegetation would be removed however no vegetation consistent with any plant community types or threatened ecological communities would be impacted." No value has been applied to the value as habitat for fauna such as insects, birds, lizards and the like nor the value as a permeable surface. This is inconsistent with ESD principles.

"Impacts to marine habitats would not be significant and would recover quickly through natural processes" This is an unsubstantiated statement. Available evidence would suggest to the contrary.

"The opportunities identified in the design development to improve local amenity, improve public transport access and active transport connections, and create additional green spaces" As detailed under other sections of this submission there is an identified net adverse impact across all these parameters. The inclusion of this statement in this manner is specious.

Cammeray Dam

The EIS (at chapter 5) states *"A new, relocated storage dam within the Cammeray Golf Course would replace the existing storage dam which forms part of the North Sydney Council stormwater harvesting scheme. The new dam would have a stormwater harvesting yield comparable to the existing one. The operational stage of the project would not impact the operation and volume of water harvested for the North Sydney Council stormwater harvesting scheme. The new, storage dam is anticipated to be located directly north of the existing basin (the exact location of the dam would be determined in consultation with the Cammeray Golf club), and would not be constructed until the Beaches Link and Gore Hill Freeway Connection*

project construction support site at Cammeray Golf Course would no longer be in use. The indicative location of the storage dam is shown in Figure 5-4."

If the new dam is not constructed until the Beaches Link and Gore Hill Freeway Connection project construction support site at Cammeray Golf Course would no longer be in use, Council will not be able to access recycled water continuously during the construction of the project.

The Cammeray stormwater reuse dam and associated drainage, pumping, treatment and storage infrastructure was completed in 2008 to provide up to 90 million L of recycled water to irrigate the golf course, St Leonards Park, North Sydney and Bon Andrews Ovals, Primrose, Tunks and Forsyth Parks. The project was constructed as a result of the millennium drought at a cost of approximately $2.5 million and helps Council and the golf course significantly reduce their potable water consumption. Given NSW is again in drought and that Council has declared a climate emergency acknowledges that the climate is getting hotter and drier, and has committed to meeting ambitious water reduction targets, this is a critical part of infrastructure that must either:

1. Not be compromised by the project and remain operational throughout and after construction and operation, or
2. Be replicated and operational elsewhere in the LGA at the expense of the NSW Government to achieve the same potable water savings prior to the existing system going offline.

Waste Management

Chapter 24 of the EIS discusses the likely sources and types of resources and materials to used be during the construction and operation of the project. The chapter also describes the likely waste streams to be generated by the project, including estimated quantities of each stream and the waste management strategies to be employed. The project has recognised the current legislative and policy framework which aims to avoid unnecessary resource usage, maximise resource reuse and recovery, and minimise landfill disposal.

Notwithstanding the approach detailed in this chapter, it has been identified that 2.1million cubic metres of soil and rock will be produced from the land-based construction components of the project. Depending on the bulking factor applied, which for sandstone can be as high as 1.7 times, the volume of extracted material may be closer to 3 million cubic metres. It is also estimated that around 900,000 cubic metres of dredging spoil will be generated. These volumes create considerable resource use (energy to extract, store, transport) which will come with amenity impacts.

Further detailed waste management plans are identified as being necessary to mitigate impact with respect to waste.

4.10.10 Recommended Mitigation measures

1. That with respect to Cammeray Dam this facility remain operational throughout and after construction and operation, or be replicated and

operational elsewhere in the LGA at the expense of the NSW Government to achieve the same potable water savings prior to the existing system going offline.

2. That a greater commitment be sought from the State Government to reduce water use, impacts on water quality and energy consumption throughout the construction and operation of the project.
3. Appropriate Waste Management Plans must be prepared. These plans must include:
   - Procedures for classifying waste streams, including testing regime.
   - Procedures for the safe handling, storage and disposal of hazardous wastes.
   - Procedures for the management of each waste stream and policies encompassing the use of recycled/recovered materials.
   - Procedures for managing spills and cross-contamination, including incident reporting.

4.10 VISUAL AMENITY IMPACTS

4.10.1 Summary

The project will have a significant and permanent impact on the landscape character and visual amenity of residential areas, conservation areas and public open space. As part of the Warringah Freeway Upgrade, four (4) new underpasses/overpasses are proposed along the eastern edge of the corridor to provide for a designated south-bound bus only lane (accessed from Military Road). Areas most acutely affected by the WHT and WFU are located along the eastern side of the freeway (Neutral Bay, North Cremorne and Cammeray residential and conservation areas).

As referenced previously, St Leonards Park, Anzac Park, Cammeray Park and surrounds will also be adversely impacted by the WHT portals, vent stack and motorway facility with a reduction in open space, vegetation loss, new transport infrastructure and views to the vent stack. Panoramic views of the Sydney CBD from the Ridge Street lookout are expected to be impacted. Considerable critical detail is missing from the supplied documentation to allow a reasonable level of assessment. The inadequacy of information provide is in clear contravention of both the performance outcome and the detailed requirements of the SEARs. Several photo montages have been presented from extremely distant observation points and obscured by vegetation so as to seemingly obscure the true extent of visual impact.

The Alfred Street and Miller Street overpasses and Falcon Street interchange will have a major impact on landscape character and views and draw traffic closer to dwellings. Significant loss of mature trees will reduce or remove the existing landscaped buffer to the freeway. Additionally, Berrys Bay and areas surrounding the proposed cofferdam location will be adversely affected during construction period.

Overall, the expansion of the freeway network will further divide the North Sydney community. No new infrastructure is proposed to address the divisive nature of the project.

4.10.2 Detail

Chapter 22 of the EIS measures the sensitivity of character areas along the freeway and the magnitude of change of the WHT and WFU on the landscape character and visual impact to those areas. The EIS classifies the long-term impacts to these areas as **Moderate** or **Moderate/High**. This is considered an underestimate.

The "Placemaking and Urban Design" performance outcomes (page 13 of the SEAR's) are:

- "*The project design complements the visual amenity, character and quality of the surrounding environment";* and
- *"The project contributes to the accessibility and connectivity of communities."*

The WHT and WFU project will have a major and lasting adverse impact on the visual amenity, character and quality of the North Sydney Local Government Area and will not achieve the stated performance outcome of the SEARs.

The areas that will be most affected by the WHT and WFU are:

- the western side of the Neutral Bay and North Cremorne residential areas that border the project, including the Whaling Road Conservation Area;
- western side of Cammeray residential area, including Cammeray Conservation Area;
- St Leonards Park, Anzac Park and Cammeray Park and nearby residences; and
- Berrys Bay and Sydney Harbour North cofferdam (construction phase only).

A summary of major urban design impacts is provided at Figure 12. Essentially, the landscape character and visual amenity of residential areas, parks and conservation areas will be heavily impacted by:

- overall expansion of the freeway network that will further divide the communities of North Sydney, Neutral Bay and Cammeray with no new infrastructure proposed to address the divisive nature of the project;
- large, new overhead bridge structures for the Alfred Street and Miller Street overpasses and new bridge structure at the Falcon Street interchange;
- proximity to new and heightened noise walls and fast-moving heavy vehicles;
- major vegetation loss that will remove the existing landscaped buffer between the freeway and dwellings/parks that currently ameliorate the impacts of the transport infrastructure;
- reduction in open space, vegetation removal and likely construction of fenced barriers around the entry portal near Hampden Street, exit portal in St Leonards park and WHT Motorway Facility in Cammeray Park;
- views and proximity to the ventilation stack, entry and exit portals; and
- construction support sites, including major works at Berrys Bay.

The EIS has classified the long-term project effects on the landscape character along the eastern side of the freeway, as '**Moderate/High'** and either **"Moderate/Low"** or **"Moderate"** along the western side. It also identifies six locations of "**High**" or "**Moderate/High**" visual impacts at the Whaling Road Conservation Area, Ridge Street Lookout, Jefferson Jackson Reserve, towards Cammeray Park and Anzac Park (Figure 13).

Many of these impact classifications in the EIS are likely to be an underestimate as they are downgraded on the basis that surrounding residential areas, parks and conservation areas are already impacted by the freeway. This rationale is not supported. These are sensitive land uses that have little to no tolerance for larger, more intensive road infrastructure. The removal of mature vegetation that currently mitigates many of the environmental effects of the freeway will be acutely felt by the community.

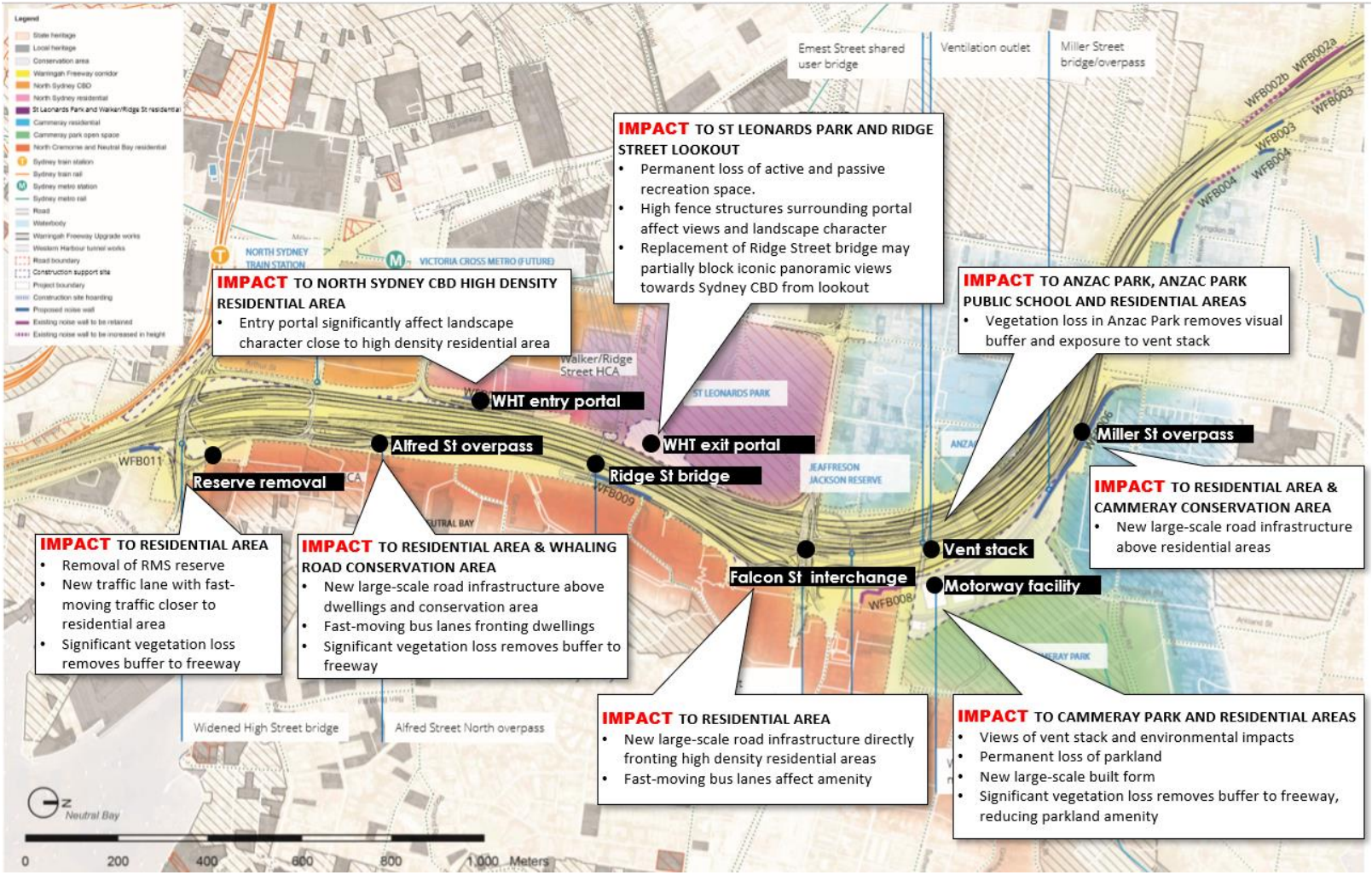


Figure 12. Summary of key impacts to landscape character and views (imaged amended from Figure 4.12 in Appendix V).

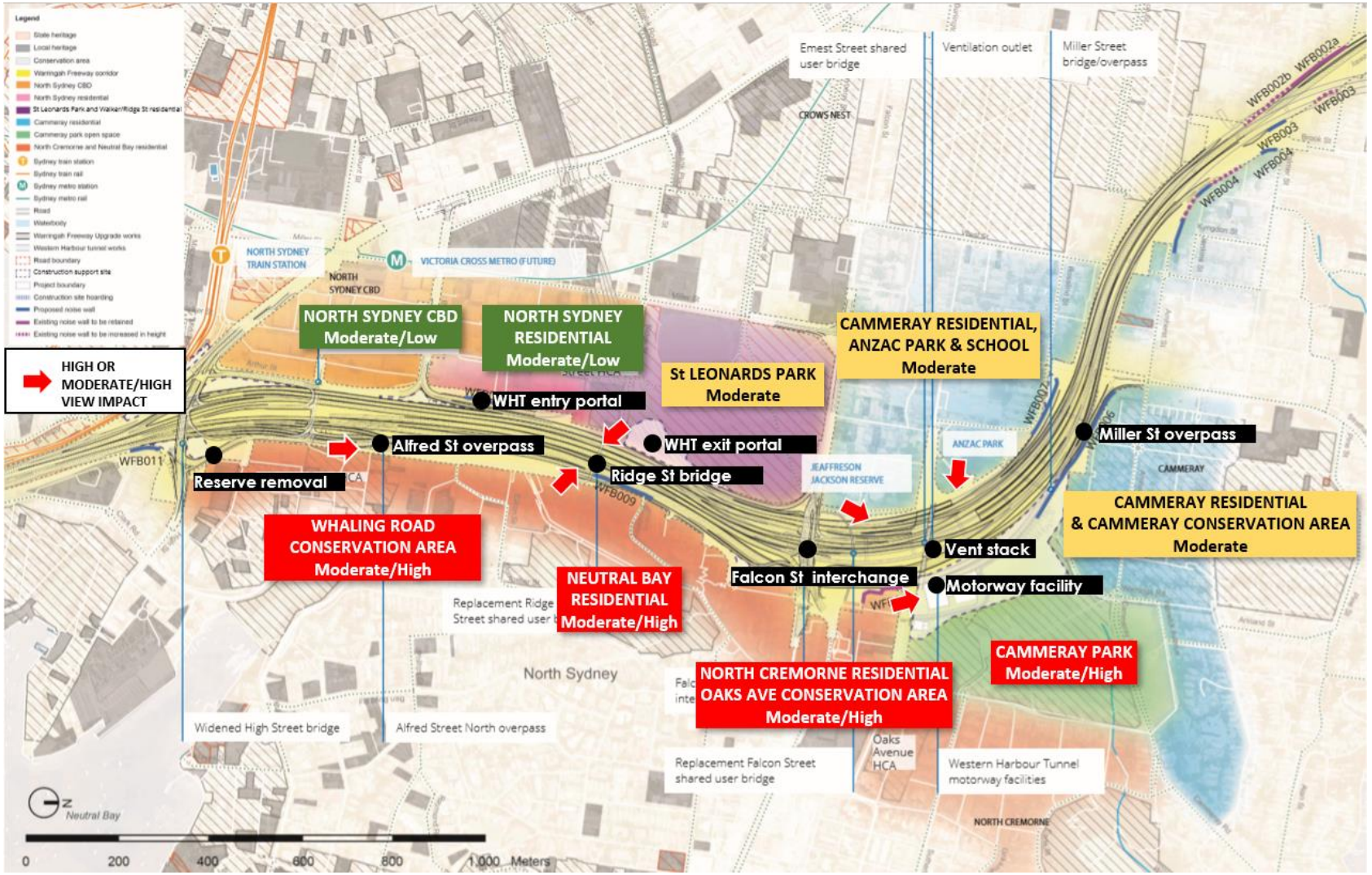


Figure 13 - Predicted severity of impacts to landscape character and views in the EIS are likely to be underestimated (amended from Figure 4.12 in Appendix V).

Visual and landscape character impact of the ventilation stack and motorway control centres

The design principle for the ventilation stack and motorway control centre is to "*minimise the physical footprint and visual impact of these structures whilst ensuring they are designed as high-quality pieces of well-integrated architecture*" (Chapter 22 page 5).

Images in the EIS documentation do not give a clear indication as to the potential final height, footprint or shape of the ventilation stack (Figure 14) so it is difficult to comment on the visual impact of the structure. Images are taken either at a distance, obscured by trees or signage or suggest a different form and therefore are misleading.

Figure 14. Images of the ventilation stack in the EIS make it difficult to assess the visual impact

The WHT Motorway Facility is estimated to have '**Moderate/High'** impacts on the landscape character of Cammeray Park due to the height and scale of the buildings in the park and consequent reduction in public open space. Again, there is very little information provided in the EIS to comment on the visual impact of the facility and whether it will achieve a *"high-quality piece of well-integrated architecture*".

Figure 15. Proposed (estimated) 4-storey WHT Motorway Facility will remove trees and have a significant visual impact on Cammeray Park

Section diagrams and further photomontages are needed to accurately assess the WHT and WFU impacts.

Visual impact of Alfred Street overpass, Miller Street overpass and Falcon Street Interchange

The design principle for road bridges is to: "*deliver elegant road bridges that integrate all architectural and engineering systems requirements whilst minimising visual impacts*" (Chapter 22 page 5).

The construction of the Alfred Street and Miller Street overpasses and the Falcon Street Interchange near residential areas will have a profound and lasting adverse impact on the community.

Figure 16 shows the Alfred Street overpass that is proposed to be constructed along the western side of the Whaling Road Conservation Area (dwellings are located just out of shot to the right of the image). It shows the scale of the infrastructure involved and its consequent visual, overshadowing, noise and amenity impacts on surrounding residences (note the dedicated fast-moving bus lane that runs under the overpass is just visible). The EIS categories the impact to the landscape character as "**Moderate/High**".

Figure 16. The landscape character impact of the Alfred Street overpass rated "Moderate/High" in the EIS.

Similar road infrastructure is proposed for the Miller St overpass, however the EIS provides limited information or diagrams to show its possible impact on the Cammeray Conservation Area. Figure 17 shows screenshots taken from the Transport for NSW website which show how close the overpass will be to homes but obscures the height of the built form. The EIS categorises the impact to the landscape character as "**Moderate**" however, having regard to the photomontage for Alfred Street, it is likely to have a greater impact than this.

Figure 17. The landscape character impact of the Miller Street overpass rated "Moderate" in the EIS.

Similarly, there are no photomontages of the Falcon Street Interchange, including the raised bus lane that will affect high density residential area in Neutral Bay.

4.11 HERITAGE

4.11.1 Summary

The WHT and WFU projects interface with, and impact upon, numerous Heritage items of State and Local Significance. The analysis finds that the project also presents significant of impact and risk to European heritage. Input has also been received from the Aboriginal Heritage Office who have raised significant concerns regarding the level of risk that the project poses in terms of potential irreparable loss to the Aboriginal community if sites are damaged.

4.11.2 Detail – Non-Aboriginal Heritage

Chapter 14 of the WHT and WFU EIS provide an impact assessment against identified items of environmental heritage. This impact assessment has referenced the EPBC Act Significant Impact Guidelines 1.2 (Department of Sustainability Environment Water Population and Communities, 2013) and given impact ratings which range from assessed as major, moderate, minor or negligible.

The impact assessment contained within the EIS and supporting documents are inaccurate and inadequate for the purposes of the State Significant Infrastructure (SSI) assessment and do not contain appropriate discussion of impact on heritage significance as outlined in the Guidelines referenced in the EIS.

The EPBC Guidelines provide the following relevant criteria for considering the level of impact on items of environmental heritage:

- **Severe:** Severe impacts generally have two or more of the following characteristics: permanent/ irreversible; medium-large scale; moderate-high intensity.
- **Moderate:** Moderate impacts generally have two or more of the following characteristics: medium-long term; small-medium scale; moderate intensity.
- **Minor:** Minor impacts generally have two or more of the following characteristics: short term/ reversible; small-scale/localised; low intensity.

The EIS heritage assessment for heritage items and conservation areas within the project corridor are included in Table 14-3 of the EIS with ratings attributed.

The ratings applied to each of the significant heritage items identified within the project Corridor have resulted in Minor ratings which is inappropriate and disproportionately relies upon mitigation measures to justify potential and direct adverse impacts on a number of significant items including the State listed items at St Leonards Park, Tarrella, the North Sydney Sewer Vent Tower and former Coal Loader Platform and Wharf.

The detailed Heritage Impact Assessments in Appendix J of the EIS are also considered to be insufficient and inadequate for the purposes of the SSI assessments and are not supported by a thorough review of the applicable Conservation Management Plans or prior heritage studies applicable to St Leonards Park, the former Coal Loader Platform and Wharf and works within the curtilage of the Sydney Harbour Bridge CMP.

It is considered that the EIS heritage assessment is inadequate and should not be accepted for the purposes of the SSI process. The impacts of the WHT and WFU project on the heritage significance of Items within the North Sydney LGA are substantial and adverse and are considered to be significant so as to warrant substantial redesign and reconsideration of the project alignment and construction footprint. A summary of key sites is provided below.

Former Coal Loader Platform and Coal Loader Wharf

The impacts arising from the proposed coffer dam at (WHTL6) have not been fully documented are likely to have significant and permanent damaging impact arising from construction activity and need for location of substantial plant within the construction footprint. The likely potential impacts are characterised as including subsidence and vibration impacts. Other sections of the EIS related to geology and tunnelling identify typical subsidence levels of 30mm (and up to 100mm) can be experienced when tunnelling through similar mediums. This level of subsidence could potentially cause structural failure of the Coal Loader platform given its construction typology.

Berry's Bay & Woodleys shipyards

The project will result in negative impact on the Marine Area of non Aboriginal Archaeology potential (ref: Figure 5-11 Item 6 Woodleys shipyard). The impacts of the proposed construction support sites/buildings WHT7 is currently unknown. Construction ramping and heavy vehicle movement will likely require substantial new infrastructure to be built within this sensitive area which is not adequately addressed within the EIS Heritage Assessments in Chapter 14 or Appendix J. Further and more detail consideration is required in this regard to understand the likely impacts arising from the project construction footprint.

St Leonards Park (WHTL9)

The impacts arising from the proposed mainline tunnels to Falcon Street and the Ridge Street north (WHT9) construction support site have not been appropriately characterised. The project footprint and construction and operational impact will result in permanent and significant impacts to the curtilage of St Leonards Park which would involve the loss of substantial vegetation as well as regrading and loss of public open space associated with the heritage significance of the site.

The supporting documentation including video fly throughs indicate an open tunnel interface is located wholly within St Leonards Park which would involve a substantial loss to the parklands and a degradation of the Park's State significance. The assessment incorrectly considers that the tunnel openings are within the Warringah freeway. A review of other plans and diagrams throughout the EIS appear inconsistent in this regard as to exactly where the tunnel is open to sky and where it is to be covered in this location.

North Sydney Sewer Vent, North Sydney

The impacts arising from the proposed works to Falcon Street interchange have not been appropriately characterised. The project footprint and construction impact may result potential and significant impacts to the curtilage of the Sewer Vent as a result of excavation required for

the proposed ventilation tunnelling contained within the park. The Heritage Assessment in Appendix J has not had regard for these potential impacts despite the location of the vents indicated on the project plans and the proximity to the vent tunnel.

The Ridge Street Lookout

The impacts to the Ridge Street lookout are not canvassed in any detailed manner within the EIS or Appendix J. The lookout is in proximity to the proposed ridge street pedestrian bridge and construction site/exit portal and will likely be adversely impacted by the proposal. The degree of the impact cannot be ascertained at this time as there is insufficient detail on the proposed construction site at WHTL9 and there is little detail on the proposed pedestrian footbridge.

Ridge Street Conservation Area (CA20 NSLEP 2013)

The project will result in negative visual impacts to the expanded visual curtilage of the properties in the north-eastern end of the Ridge Street Conservation Area which currently look over a green landscape in St Leonards Park. The proposed tunnel exit will likely introduce fencing, security measures, signage, additional screening and the like. The impacts have not been adequately identified or addressed within the EIS or Appendix J.

Holtermann Estate A Conservation Area

The project will result in potentially negative visual impacts to the character of the north-eastern Holtermann Estate A Conservation Area as a result of visually detracting high acoustic walls. Noise impacts from additional traffic volumes will detract from residential amenity in the High Street Conservation Area, Holtermann A Conservation Area, Ridge Street Conservation Area, Cammeray Conservation Area.

Cammeray Park

The project will result in major and direct loss of significant parkland space at Cammeray Park and no understanding of the exact extent of the works and the compensation or offset proposal. The ventilation shaft will have a high visual impact as it is visually intrusive with moderate direct impact.

Cammeray Conservation Area

The project will result in potentially negative visual impacts to the character of properties on Morden St, Cammeray located within the Cammeray Conservation Area.

Other Matters

The EIS has not adequate assessed impacts on the following State and Locally Listed Heritage Items:

- Tarella (3 Amhurst Street Cammeray)
- St Leonards Park
- North Sydney Sewer Vent, North Sydney
- The Ridge Street Lookout

- Ridge Street Conservation Area (CA20)
- Former Coal Loader Platform and Coal Loader Wharf, Waverton

The EIS has not had regard for a number of relevant local studies. Reference should be made to the following

- St Leonards Park Conservation Management Plan by Godden McKay Logan 2013, that notes that the site's archaeological potential has not been identified (Page 96).
- Former Coal Loader Platform CMP
- The policies in the Godden McKay Logan Berrys Waverton Peninsula Industrial Sites: BP, Caltex, Coal Loader dated May 2000 Bay Conservation Management Plan should be applied. Archaeological investigations to be undertaken prior to further design development as it may not be appropriate to undertake works at this site when it is considered that other convict sites have World Heritage Listing.

4.11.3 Recommended Mitigation Measures

The impacts of the WHTL projects are considered to be so significant as to warrant substantial redesign and reconsideration. It is however recognised that should the development proceed that it is important to identify appropriate mitigation measures to be implemented to minimise the likely adverse impacts to items of environmental heritage in the North Sydney LGA.

1. Detailed dilapidation studies must be undertaken and site-specific management plans prepared for all sites identified above.

2. Detailed archaeological studies of terrestrial and marine based areas must be undertaken prior to detailed construction development and site specific management plans prepared for the all sites identified above:

4.11.4 Detail - Aboriginal Cultural Heritage

The Western Harbour Tunnel has proposed development which will have impact on significant sites in the North Sydney LGA. Measures and mitigations proposed for the management of the sites during the construction phase of the proposed project are required to ensure the Aboriginal sites will not be harmed. The management and mitigation of 'Whale' Rock is of the greatest concern to the Aboriginal Heritage Office as it is one of the few rock engravings with multiple figures in Sydney Harbour and it has other heritage values.

'Whale' Rock is considered part of the Balls Head Aboriginal heritage sites and landscape, which has been identified as significant in other chapters of the proposal. The engravings have active involvement from Aboriginal community groups and Council and has been part of the reconciliation and heritage management eras of Australian history. Two new figures, an eel and an echidna, were located as recently as 2011 through the monitoring program established in 1999 by the Aboriginal Heritage Office through North Sydney Council.

Section 8.2 of the Technical working paper: Cultural heritage assessment report – Impact Assessment – identifies potential direct and indirect impact to the Aboriginal sites through vibration, settlement and subsidence. There is no known research regarding subsidence on rock engravings. Consequently, the safety of the rock engravings cannot be guaranteed. Projects of

this nature have a (very recent) history of unexpected subsidence during construction. The potential for irreparable damage caused due to unexpected subsidence must be highlighted as of paramount importance.

The identification of potential to harm Aboriginal sites triggers the application of an Aboriginal Heritage Impact Permit from the NSW Department of Planning, Infrastructure and Environment under the National Parks and Wildlife Act 1974. As the Western Harbour Tunnel and Warringah Freeway Upgrade is not yet approved the legislation governing the protection of Aboriginal sites is still relevant.

The Aboriginal Heritage Office has undertaken an assessment of the proposal against the SEAR's (issued December 2017). This assessment is provided at Appendix 4 and presents several important areas where the EIS has failed to satisfy the identified performance outcome or detailed requirement. Of particular concern is that the project due to its nature presents a very real risk of damage to places of high significance (such as the Whale Rock site) that if damaged can simply not be rectified. The proponent has failed to demonstrate a satisfactory level of risk nor mitigation plan. Stronger measures and commitments are sought so as to effectively reduce risk levels to zero. Such measures may include alternate construction methods, 'live' vibration monitoring and immediate stop work protocols and work methods or the like.

4.12 COMMUNITY ENGAGEMENT

4.12.1 Summary

Chapter 7 provides an overview of the stakeholder/community engagement activities undertaken during the project's development and preparation of the EIS; an overview of the engagement activities employed to support the public exhibition of the EIS; and the proposed engagement/communications framework regarding construction, should the project proceed.

The SEARs require that a draft community consultation framework be prepared for construction and operation, that identifies relevant stakeholders, details procedures for distributing information and receiving and responding to feedback, and procedures for resolving stakeholder and community complaints during construction and operation.

It has been identified that a project-specific Community Communication Strategy will be prepared should the project be approved, which will guide the TfNSW project team's interaction with stakeholders/community inclusive of set standards for proactive engagement.

Given the recent experienced level of disruption and amenity impacts of projects of this nature, a greater level of detail and commitment is sought to minimise disruption and distress for those most impacted.

4.12.2 Detail

The duration and breadth of engagement methods employed during the project development stages was far greater than that provided during the EIS public exhibition period. The EIS public exhibition duration, inclusive of the initial additional two weeks above the minimum 28-day period plus an additional 18 days is not equitable to the previous engagement stages.

This is concerning given that the EIS documentation is over 9,000 pages in length. During the project development stage, RMS staff presented to individual Precinct Committee meetings (which were in addition to their drop-in information sessions); but TfNSW staff did not make themselves available during the EIS public exhibition period. Precinct Committees should not be treated any differently to other special interest groups, as the North Sydney Community Precinct System is a well-established, geographically representative way to consult across the North Sydney LGA.

The level of participation by businesses during the project development stages seems low e.g. the number of businesses (182) that participated in the survey conducted in November 2017 (Appendix U: Technical Working Paper: Business impact assessment) cannot be a statistically representative sample for the nine local centres *"that may be more susceptible to direct or indirect effects of construction and/or operation"* (p14). It is noted that "*further engagement with businesses stakeholders would be carried out during the EIS exhibition period"* but such activities were not detailed. Further, Local Chambers of Commerce, including North Sydney and Neutral Bay are not listed as relevant stakeholders.

Page 53 of the EIS Summary Guide refers to a dedicated consultation period seeking stakeholder/community input into the new public open space at the Berrys Bay site. This

includes establishment of a "reference group, with representative stakeholder groups, the community and independent experts". It is assumed Council will be invited to participate in this reference group, however Council's preference would be to lead the consultation and design process of this element as Council is better positioned to reflect community needs. Appropriate resourcing is requested if this is to occur. Overt reference to this consultation (and other similar consultations) should be referenced within section 7.2 of the Appendix E. Additionally a project-specific engagement/community strategy should be prepared for discrete consultations such as this, as each is location specific and therefore involves difference stakeholders that the broader/overall framework may not identify.

Page 72 of the EIS Summary Guide refers to possible additional mitigation measures for noise levels during construction that disturb sleep, "such as providing respite or alternative accommodation where applicable". However, no reference to such is made in either Chapter 7 or Appendix E in the context of complaint handling. Specific reference to the provision of respite or alternative accommodation where applicable should be added to Appendix E and detailed in the Construction Noise and Vibration Management Plan.

4.12.3 Recommended Mitigation Measures

Should the project be approved, a Community Communications Strategy must be prepared that outlines the engagement (including consultation) activities that would support the design and construction of the project. The proponent must work with the appointed construction contractor to prepare and implement the Strategy based on the Community Consultation Framework detailed in Appendix E.

The purpose of the Community Communications Strategy is to guide interactions with the community and stakeholders and set standards for proactive engagement. The Framework must detail:

- consultation purpose and objectives;
- stakeholder identification;
- a complaints management system inclusive of the minimum methods to be established and available for community enquiries and complaints for the duration of construction;
- how data will be collected, monitored, reported and analysed during construction;
- establishment of a focus group to discuss the project's performance and benchmark the effectiveness of the engagement activities - noting that engagement activities/processes would be modified as required, based on feedback and/or issue that arise during the monitoring process;
- mechanisms for distributing information and seeking feedback, which will be detailed in the Strategy; and
- specific issues management, as it is anticipated that some aspects of the project's construction will require specific communications and/or management strategies due to the nature of the potential impact and/or stakeholder group. Indicative communications and management strategies are identified for traffic management (including property and pedestrian access), landscaping and urban design, construction activities and out of hours work, and noise and vibration mitigation and management. With the latter to be

detailed in a Construction Noise and Vibration Management Plan.

Previous large-scale infrastructure projects in both North Sydney and wider Sydney result have seen a high degree of community interest and impact and often accompanying levels of stress. The experience has been that many community members end up seeking assistance of Council in representing their concerns. Consideration should also be given to the project funding positions within Council for additional staff (to be Council employees) throughout the duration of the project to better facilitate discussion and communication with the community and negotiate appropriate outcomes.

4.13 STRATEGIC PROJECT IMPACTS

4.13.1 Summary

The proposal will both directly and indirectly impact upon numerous adopted and draft State and Local Government strategic projects and initiatives. Some of these include; endorsed (Stage 1) North Sydney Public Domain Strategy (stage 2 is presented to Council on this agenda under separate cover), endorsed North Sydney CBD Transport Masterplan (including delivery of Miller Place), endorsed Ward Street Masterplan, Stage 1 Military Corridor Planning and draft Civic Precinct Planning studies. This will likely curtail the ability of Council to deliver upon the employment and housing targets established by the Greater Sydney Commission and reflected in Council's recently endorsed Local Strategic Planning Statement.

Council's collaboration with State Agencies on the significant improvements being discussed as part of the preparation of the *North Sydney Integrated Transport Plan*, will be significantly undermined as a result of the pursuit of the WHT project.

Whilst not specifically outlined in the SEARs as a matter to be addressed, the responsible consideration of these project needs to done in the context of the Greater Sydney Commission's *'A Metropolis of Three Cities', 'The North District Plan'* as well as other State Government strategies such as the Pacific Highway and Miller Street *'Road Network Plans'* and *'Principle Bike Network Business Case'*. The WFU and WHT project will either directly prevent or significantly hinder the achievement of numerous endorsed strategic directions, priorities and actions as well as specific projects within these plans.

4.13.2 Detail

North Sydney Council is working to create a more engaging and resilient CBD that offers a greater range of activities and unique public spaces for workers, residents and visitors. The preparation of a Public Domain Strategy (PDS) for the CBD forms part of this work. The strategy establishes a vision for the centre's public domain, identifies a suite of short to long term projects and puts in place an implementation framework for delivery.

The vision responds to and addresses the current transformation of the CBD, including the arrival of the Metro and puts forward the framework to deliver the public domain that complements the new public transport infrastructure and commercial developments and caters for the expected growth.

The draft Strategy sets a series of objectives for the public domain and presents 19 projects in and around the CBD that will contribute to achieve them. The projects are grouped in 4 main categories: 1. Civic Spine, 2. Parks & Plazas, 3.Laneways and 4. Footpaths & Crossings.

Within these 4 groups, major projects include:

- **Miller Place.** A new 7,450m^2 pedestrianised public plaza on Miller Street created between Pacific Hwy and Berry St;
- **Post Office Square.** A new 1,675 m^2 plaza outside the Post Office;

- **Tramway Park.** Converting the under-utilised deck of the tramway viaduct into a 4,650 m^2 public space;
- **Laneway links.** Turning Denison, Mount, Hill, Spring and Little Spring Streets into pedestrian areas or shared zones;
- **Little Walker Street.** Upgrade the street as an activated shared zone with art installations; and
- **Upgrading Berry Street.** 8,300m^2 of upgraded road, footpaths and squares with new architecture offering, shops and dining on the street.

Traffic changes required to achieve these key proposals are achievable and were substantiated by the *North Sydney CBD Transport Masterplan*, (endorsed by Council on 27 August 2018). In response to this Council has participated in the North Sydney Integrated Transport Program. This has been a cross agency process with representatives from TfNSW, Sydney Metro, Government Architects Office, Greater Sydney Commission, Sydney Buses and North Sydney Council.

The process has been a collaborative one with placemaking and city building for the North Sydney CBD being key considerations and drivers for the programme. Council's Transport Masterplan and Public Domain Strategy were important inputs into this process which clearly articulate Council's vision for the CBD, particularly in a post Metro world. Whilst it is encouraging that the EIS has referenced this work, in reality, its future appears to be more uncertain due to an extended hiatus of any interaction.

Analysis of the EIS reveals that the pursuit of the WHT project in its current form, would necessarily undermine the realisation of many of the positive city building interventions and identified by Council. This would be at direct odds with key objectives of the Greater Sydney Commission's North District Plan.

The project would also compromise and challenge key aspects of Council's Ward Street Masterplan (the identified growth and focus area of the CBD) as well as the draft Civic Precinct Planning Study. This is due to the widening of Berry Street to four lanes and increased traffic function it will play as well as the identified increased modelled traffic volumes using Miller Street.

Other important Strategic Projects that are likely to be impacted are the Military Road Corridor Planning Study. This is due to the channelisation of access between Ernest Street and Sydney Harbour Tunnel being likely to result in more traffic on Military Road.

4.14 COUNCIL ASSETS

4.14.1 - Summary

The project includes the compulsory acquisition of certain sites and construction leases over other parcels of land. The affected areas and land parcels identified within Appendix 2. Most, notably in late 2019 Council received formal notice to compulsorily acquire various parcels of land within Anzac, St Leonards and Cammeray Parks, for the purposes of the Warringah Freeway upgrade in accordance with the provisions of Section 106A of the Crown Lands Act 1989 (now repealed). Transport for NSW have claimed that despite the provisions of Section 106A, of the Crown Lands Act 1989 applying to compensation, Transport for NSW are planning to restore the land and as such no structural improvements would be affected, and therefore no compensation would be payable pursuant to the compulsory acquisition in accordance with Section 106A.

As referenced under relevant headings, the permanent loss of open space and the occupation of other areas of the public domain (including open space) for extended periods of time has a tangible impact upon the well-being of a wide range of members of the broader and local community and represents a lasting negative legacy of the projects.

4.14.2 – Other assets

Balls Head and Coal Loader

The potential vibration / settlement impacts to the Coal Loader platform structure as foreshadowed in the EIS documents are of significant concern, given Council's substantial investment in the recent redevelopment of this important part of our nation's maritime heritage, and the popularity of the site as one of Sydney's newest harbourside recreational resources. It is necessary for this possibility to be managed with a sufficiently comprehensive dilapidation survey process and establishment of an undertaking from the tunnel proponent to make good any settlement damage. It is understood that the EIS is proposing a dilapidation survey process be undertaken. In that regard it is recommended:

1. That given the unique nature of the Coal Loader platform stronger measures and commitments are sought so as to effectively reduce subsidence and vibration damage risk levels to zero. Such measures may include alternate construction methods, 'live' vibration monitoring and immediate stop work protocols and appropriate work methods or the like.

2. That Council seek to retain a sufficient monetary bond from the NSW Government to cover any potential repairs and restoration of the Coal Loader structure (that may be necessary as a result of vibration and / or settlement) following completion of tunnelling activities.

3. That Council seek independent costings to establish the amount of the bond that would be required.

The EIS proposes that the existing heritage vessels moored adjacent to the Coal Loader Platform be temporarily relocated (for the duration of the construction works), to enable

demolition of the existing lower catwalk structure that the vessels used for access and construction of the proposed coffer dam in Balls Head Bay. Whilst the EIS proposes that the vessels be provided the opportunity to relocate to alternate berthings ahead of the project (ref. Chapter 6 – Construction Work Sect 6.3.1 page 6-7) it is understood that the ships cannot move under their own steam, alternate existing moorings (particularly land-based which is essential for retaining volunteer crews) are not generally available and as the ships are being restored by volunteer organisations, these vessels do not have the financial capacity to fund such a move.

Whilst not being expressly stated in the EIS, it is understood that the tunnel proponents may be proposing to relocate the heritage vessels to newly built moorings in Balls Head Bay off the south west corner of the coal loader platform. It is understood that the cost of the newly built moorings would be substantial. It is also understood that the custodians of the MV Cape Don (one of the heritage vessels) object to the move to the proposed new mooring off the south-west corner of the platform as this would greatly impact on their current access and result in a loss of their volunteer restoration crew. The MV Cape Don has only recently recovered from previous loss of access caused by demolition of their access, and now have a very active volunteer group attending fortnightly working weekends. The MV Cape Don Society has over a number of years spent large sums of their (volunteers) own time and monies reconstructing their existing access to a safe level.

Further, the nearby historic Coal Loader Jetty projecting into Balls Head Bay from the Coal Loader site, is of high heritage significance (deemed to be of state significance [ref. *Waverton Peninsula Conservation Management Plan* - Godden Mackay Logan, 2000]1) and Council's and the community's request that it be retained and adaptively reused in accordance with the principles outlined in the Waverton Peninsula Strategic Masterplan [North Sydney Council 1999]2. A copy of a draft adaptive re-use scheme is provided within Appendix 3. It is recommended:

1. That: Council make representations to the NSW Government that the monies earmarked for the new mooring structures for the heritage vessels be instead re-allocated towards an appropriate adaptive re-use scheme for the historic coal loader.

2. That: Council work with the NSW Government (incl. RMS, Heritage, Destination NSW, Sydney Ferries, NSW Fisheries et al) to determine an acceptable scheme for the jetty taking into account its high heritage significance, marine habitat value and the adaptive reuse objectives of the Waverton Peninsula Strategic Masterplan.

3. That: the heritage vessels be relocated to moorings alongside the restored jetty.

4.14.3 – Amelioration and Compensation Process

Whilst not part of the formal EIS documentation, TfNSW has also indicated its intention to prepare an 'Interface Agreement' to enter into with Council. The interface agreement is a legal document requiring detailed processes to be followed for related works, repairs and upgrades to Council assets such as roads, footpaths, lighting, drainage infrastructure and the like. Considering the relatively early stage of the project, and some of the fundamental concerns arising, this is considered premature and it is recommended that this not be progressed until further negotiations with respect to the project take place. It is recommended that Council make separate written representations regarding the need to establish a process for determining terms of reference setting out guiding principles and a framework for the development of any future Interface Agreement or Deed of Agreement in relation to all Council assets and to adequately ameliorate the identified adverse impacts of the project on the North Sydney Community. The contents of the principles and framework should first be informed by the issues raised in the detailed submission attached to this report.

Any future more detailed Interface Agreement would provide more detail on the scope, rights and obligations for both the delivery and operational phases of the project if it proceeds.

This staged approach is recommended across all areas of impact of the WHT and WFU across the LGA as it necessitates a wider, more strategic approach to negotiation of impact at an issues and principles level before approaching resolved design detail.

5.0 ASSESSMENT SUMMARY

5.1 EIS Assessment Summary

As detailed under relevant headings within this submission, the review of the EIS for the Western Harbour Tunnel and Warringah Freeway Upgrade has identified significant concerns including; inadequate justification and need for the project, loss of and impact on open space, construction and operational road network impacts, air quality and human health concerns, environmental, visual, social, amenity and heritage impacts as well as numerous key (State and Local) strategic projects having the potential to be compromised. The analysis has also concluded that aspects of the Secretary's Environmental Assessment Requirements (SEARs) have not been adequately met in the EIS.

The information provided in the EIS tends to overestimate the project benefits while understating the project costs and impacts. At the same time, it suggests that mitigation measures will be developed as problems arise. This approach is problematic as it provides little assurance or confidence in the process.

Considerable commentary has been provided on the absence of a compelling justification for the project. The majority of adverse impacts identified will be borne by the North Sydney community for a limited (if any) wider project benefit. More broadly, in the absence of a clear need and compelling business case, the wisdom of the expenditure of an estimated $20billion dollars of public monies is challenged. Any wider network benefits of reduced travel time will be short-lived and a more strategic and sustainable approach is implored.

Recommended measures to mitigate impact and issues to be addressed have been provided under headings, in the event that the project proceeds. It has also been identified that an urgent process is required for determining terms of reference, guiding principles and a framework to adequately ameliorate the identified adverse impacts of the project on the North Sydney Community.

Appendix 1 – Summary Table - Construction site traffic impacts PAGE 1

Table 1 Summary of Construction Support Sites and Key Impacts

	Site	Schedule/ Duration	Construction Routes	Daily Vehicle Movements	Parking Impacts	Ped Impacts	Cycle Impacts	Local Traffic Impacts
1	Berrys Bay (WHT7)	Q2 2021- Q4 2025 Peak Q4 2021- Q3 2023	Bay Road & Balls Head Road All spoil removal by barge	Heavy: 55 Light: 210	Nil	No direct impact	No direct impact	High
2	Sydney Harbour North Coffer Dam (WHT6)	Q4 2021 – Q4 2025	All by barge	Nil	Nil	Nil	Nil	Nil
3	Blue Street (WFU1)	Duration of construction of WF Upgrade (Q4 2020 – Q1 2026)	Pacific Highway and Blue Street	Heavy: 10 Light: 315	None stated	Minimal	Minimal	Minor
4	Arthur Street East (WFU4)	Duration of construction of WF Upgrade (Q4 2020 – Q1 2026)	Arthur St	Heavy: 10 Light: 135	None stated	Minimal	Minimal	Minor
5	High Street South (WFU2)	Duration of construction of WF Upgrade (Q4 2020 – Q1 2026)	Pacific Hwy and High Street	Heavy: 15 Light: 80	Nil	Minimal	Minimal	Minor
6	High Street North (WFU3)	Duration of construction of WF Upgrade	Pacific Hwy And Alfred St North	Heavy: 10 Light: 65	See Alfred Street North Impacts	Minimal	Minimal	Minor

Appendix 1 – Summary Table - Construction site traffic impacts PAGE 2

	Site	Schedule/ Duration	Construction Routes	Daily Vehicle Movements	Parking Impacts	Ped Impacts	Cycle Impacts	Local Traffic Impacts
		(Q4 2020 – Q1 2026)						
7	Berry Street East (WFU5)	Duration of construction of WF Upgrade (Q4 2020 – Q1 2026)	Berry Street, Warringah Fwy	Heavy: 30 Light: 30	Not stated	Minimal	Minimal	Minor
8	Berry Street North (WHT8)	Duration of construction (Q4 2020 – Q1 2026)	Berry Street and Warringah Freeway	Heavy: 130 Light: 30	Nil	Minimal	Minimal	Minor
9	Ridge Street East (WFU6)	Duration of Works associated with Ridge Street Shared User Bridge Schedule not specified	Ridge Street (during early works)	Heavy:20 Light: 70	12 spaces on Ridge St	No impacts under current conditions. Pedestrian access across existing bridge maintained until new bridge is complete.	Construction vehicle/ cycle conflicts on Ridge Street will be managed under active traffic control Cycle access across existing bridge maintained until new bridge is complete.	High
10	Ridge Street North (WHT9)	Q4 2020 – Q1 2026	Secondary: Ridge Street Primary: Warringah Freeway & Ridge Street (during early	Ridge St Heavy:20 Light: 70 Warringah Fwy Heavy: 200 Light: 165	12 spaces on Ridge St	Minimal	Minimal	High

Appendix 1 – Summary Table - Construction site traffic impacts PAGE 3

	Site	Schedule/ Duration	Construction Routes	Daily Vehicle Movements	Parking Impacts	Ped Impacts	Cycle Impacts	Local Traffic Impacts
			works only)					
11	Merlin Street (WFU7)	Duration of construction of WF Upgrade (Q4 2020 – Q1 2026)	Merlin Street	Heavy: Nil Light: 150	10 spaces on Merlin Street	Pedestrian access across Warringah Fwy bridge maintained until new bridge completed. Underpass beneath eastern side of Falcon Street bridge permanently removed during initial stage of WFU. Extra 380m via existing zebra & signalised crossings at Falcon St/ Military Rd or via Falcon Street bridge. (EIS notes currently 12 movements during peak hours) Jeafferson Jackson Reserve Shared User Path – temporary adjustments	Cycle access across Warringah Fwy bridge maintained until new bridge completed Underpass beneath eastern side of Falcon Street bridge permanently removed during initial stage of WFU. Extra 380m via existing zebra & signalised crossings at Falcon St/ Military Rd or via Falcon Street bridge. (EIS notes currently 12 movements during peak hours) Jeafferson Jackson Reserve Shared User Path – temporary adjustments	Minor

Appendix 1 – Summary Table - Construction site traffic impacts PAGE 4

	Site	Schedule/ Duration	Construction Routes	Daily Vehicle Movements	Parking Impacts	Ped Impacts	Cycle Impacts	Local Traffic Impacts
						during construction of new bridge – extra 400m diversion. But won't coincide with Ernest Street diversion	during construction of new bridge – extra 400m diversion. But won't coincide with Ernest Street diversion	
12	Cammeray Golf Course (WHT10 & WFU8)	Q1 2021 – Q4 2025	Primary: Warringah Freeway Secondary: Ernest Street	Heavy: 525 Light: 1345 (Warringah Fwy & Ernest Street combined) *WHT10* *Heavy: 485* *Light: 480* *WFU8* *Heavy: 40* *Light: 865*	10 spaces on Ernest St	Ernest St – no direct impacts Warringah Fwy Shared Path – temporarily realigned to travel along rear of support site to Merlin/Ernest intersection – additional travel up to 100m	Ernest St – no direct impacts Warringah Fwy Shared Path – temporarily realigned to travel along rear of support site to Merlin/Ernest intersection – additional travel up to 100m	Modify Ernest/Merlin intersection to control secondary site access from Ernest Street
13	Rosalind Street East (WFU9)	Duration of construction of WF Upgrade (Q4 2020 – Q1 2026)	Rosalind Street	Heavy: 15 Light: 205	Not stated	Minimal	Minimal	High
14	Alfred Street North • Ridge St pedestrian bridge • Alfred Street widening	Not Stated. Likely to coincide with WFU3	Alfred Street North	WFU3 & WFU7	47 spaces between Wyagdon St & Ridge Street 49 spaces between Ridge St &	Pedestrian access across existing bridge maintained until new bridge is	Cycle access across existing bridge maintained until new bridge is	Major Temporary long-term closures

Appendix 1 – Summary Table - Construction site traffic impacts PAGE 5

	Site	Schedule/ Duration	Construction Routes	Daily Vehicle Movements	Parking Impacts	Ped Impacts	Cycle Impacts	Local Traffic Impacts
	• Mount Street interchange	& WFU7			Whaling Rd (23 spaces to be reinstated at completion) = **permanent net loss of 73 spaces**	complete.	complete.	
15	ANZAC Park (Construction Access)	Schedule not stated Approx. 6 months duration	Ernest Street eastbound and Cammeray Avenue intersection	Heavy: 30 Light: 75	Not stated	Not stated	Not stated	Unknown

Appendix 2 – Proposed acquisition and construction license site plans

Each site has been summarised to present an overview of the lots required, either for compulsory acquisition or for temporary construction leases.

Anzac Park (Refer to Figure 1)

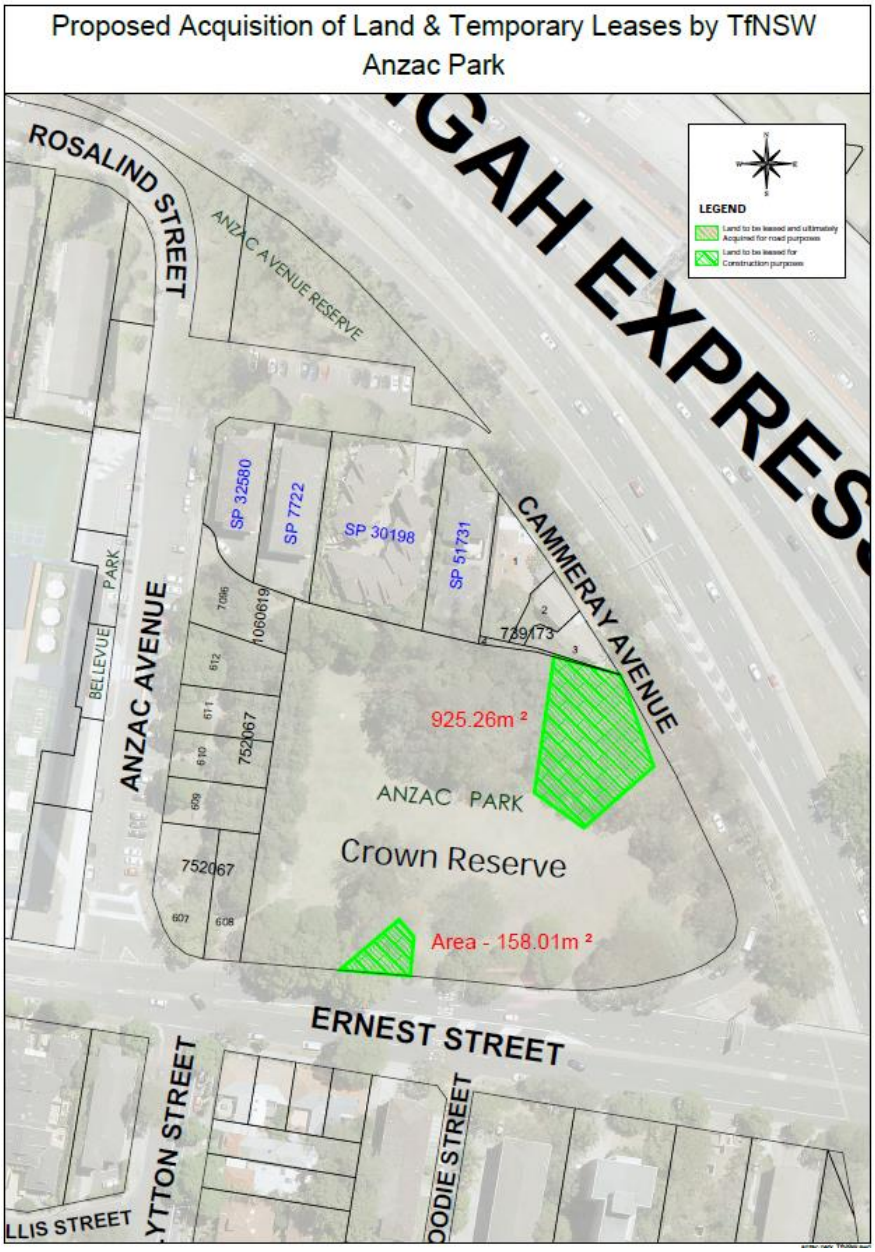


Figure 1: Identifies the proposed sites to be acquired within Anzac Park for "temporary construction leases".

Location: Anzac Park is a Crown Reserve located at the corner of Cammeray Avenue and Ernest Streets in Cammeray.

Title Details: The land was dedicated for Access to Water and Public Recreation Space by notification published in the Government Gazette dated 12 March 1869. On 11 June 1926, North Sydney Council was appointed trustee.

Ownership*:* Anzac Park is a Crown Reserve.
Council was appointed Crown Lands Manager in accordance with Clause 11(5) of Schedule 7 of the Crown Lands Management Act 2016. On 1 July 2019 the assets, rights and liabilities of the reserve trust that were previously managed by Council was transferred to Council. Council is now

Appendix 2 – Proposed acquisition and construction license site plans

in its transitional period and is required to manage the land as though it was Community Land. The Plan of Management is currently being updated. The titles for the land will remain with Crown Lands (The State of New South Wales).

Parcels to be acquired - Refer to *Figure 1* above.
Two (2) parcels are being proposed for the acquisition of *temporary construction leases* (indicated by Green hatching on *Figure 2*).

(a) Approximately 925.26m² on the north-eastern side of the Park, adjacent to the Warringah Freeway.
(b) Approximately 158.01m² on the southern side, adjacent to Ernest Street.

Appendix 2 – Proposed acquisition and construction license site plans

2. St Leonards Park (Refer to Figure 2)

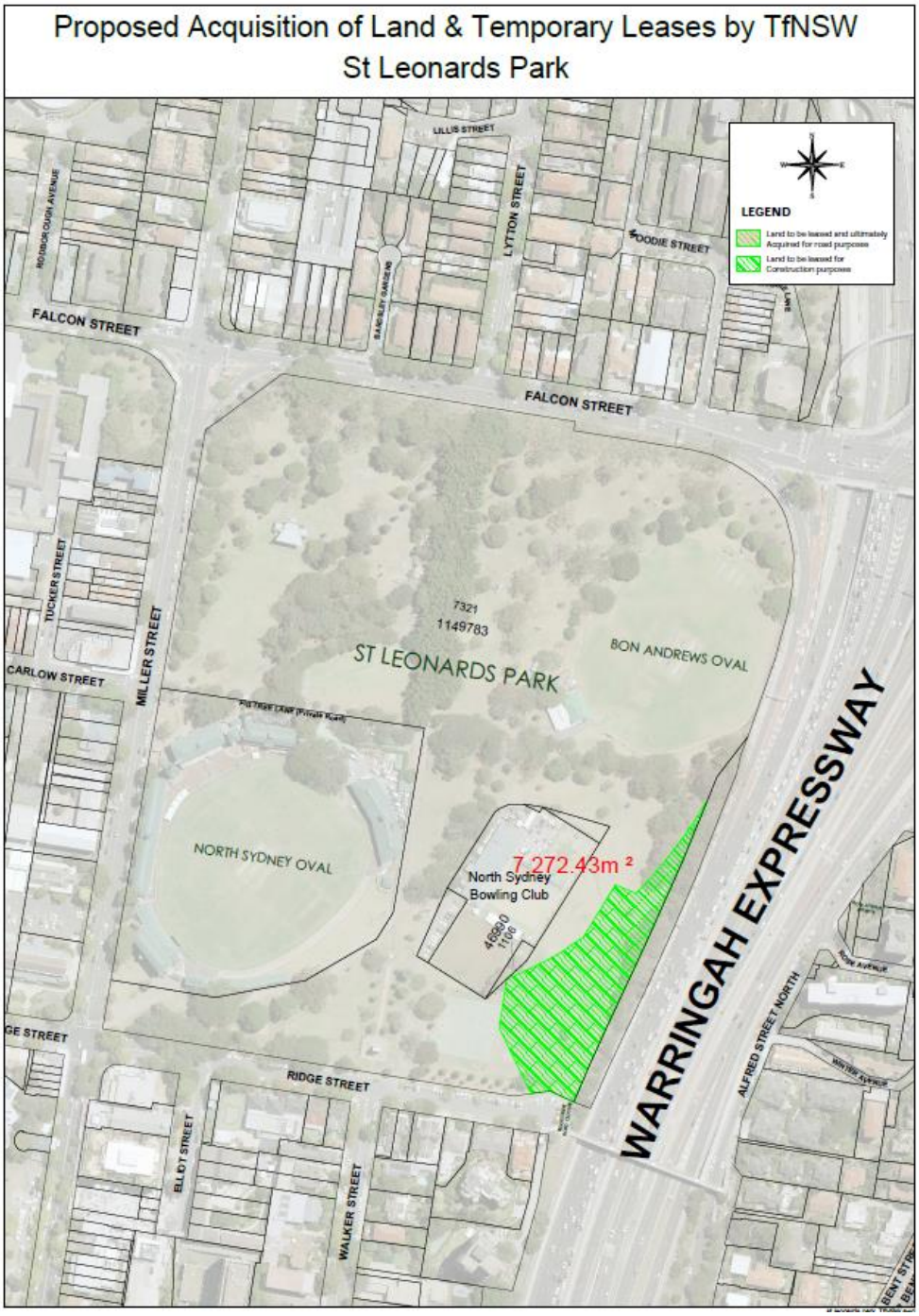


Figure 2: Identifies the proposed sites within St Leonards Park for *"temporary construction leases"*

Appendix 2 – Proposed acquisition and construction license site plans

Location*:* St Leonards Park is a Crown Reserve enveloped by Ridge Street to its south, Miller street to its west, Falcon Street to its north and the Warringah Freeway as its eastern boundary.

Title Details*:* Lot 7321 DP 1149783

Ownership*:* St Leonards Park is a Crown Reserve. Council was appointed Crown Lands Manager in accordance with Clause 11(5) of Schedule 7 of the Crown Lands Management Act 2016. On 1 July 2019 the assets, rights and liabilities of the reserve trust that were previously managed by Council was transferred to Council. Council is now in its transitional period and is required to manage the land as though it was Community Land. The Plan of Management is currently being updated. The titles for the land will remain with Crown Lands (The State of New South Wales).

Parcels to be acquired - Refer *Figure 2, above*.

One (1) large parcel is being proposed for the acquisition of a temporary construction lease (indicated by Green hatching on *Figure 2*).

Approximately 7,272.43m² on the south eastern section of the site, adjacent to the Warringah Freeway and abutting Lot 1106 DP 46990 which is the North Sydney Bowling Club.

Appendix 2 – Proposed acquisition and construction license site plans

3 Cammeray Park

Figure 3: Identifies the proposed sites within Cammeray Park for 'temporary construction leases (green hatching) and for compulsory acquisition (pink with green hatching).

Appendix 2 – Proposed acquisition and construction license site plans

Location*:* Cammeray Park is a Crown Reserve enveloped by Cammeray Road to its north, Park Avenue to its east, Ernest Street to its south and the Warringah Freeway to its west.

Title Details: Cammeray Park is subdivided into various lots. Refer to the Table below, including Figure 5.

Ownership: Council was appointed Crown Lands Manager in accordance with Clause 11(5) of Schedule 7 of the Crown Lands Management Act 2016. On 1 July 2019 the assets, rights and liabilities of the reserve trust that were previously managed by Council was transferred to Council. Council is now in its transitional period and is required to manage the land as though it was Community Land. The Plan of Management is currently being updated. The titles for the land will remain with Crown Lands (The State of New South Wales).

Parcels to be Acquired (Refer to Figure 4 which is to be read concurrently with the Table below.)
The plan indicates the acquisition and lease of 2 large portions of land which form part of Cammeray Golf Club.

(a) Approximately *19,290.79m²* in total is required for the purposes of *temporary construction leases*. *(indicated by green hatching Figure 4).*
(b) Approximately *28,896.47m²* in total is required for the *compulsory acquisition* (*indicated by Pink colouring with Green hatching on Figure 4*).

Detail Breakdown of the various lots proposed for compulsory acquisition or temporary construction leases

The information below is an overview of the lots either being compulsorily acquired or, for the acquisition of temporary construction leases.

Each lot which is being affected by the proposal is summarised in the table below and is also reflected in *Figure 4*.

Lot No	Overview
Lot 2 DP 244543 (2 parts)	• 2423.94 m² (green hatching) ***To be acquired for temporary construction leases*** • 1534.71 m² (Pink with Green hatching) ***To be compulsorily acquired***.
Closed Road	Part closed road. This appears to form part of Warringah Rd in Cammeray. • 873.83 m² (green hatching). ***To be acquired for temporary construction leases*** • 1534.71 (Pink with Green hatching). ***To be compulsorily acquired***.
Lot 3 DP 244543	• 228.6m² (Pink with Green hatching). ***To be compulsorily acquired***.
Lot 4 DP 244543	• 1380.66m² (Pink with Green hatching). ***To be compulsorily acquired***.
Lot 5 DP 244543	• 84.66m² (Pink with Green hatching). ***To be compulsorily acquired***.
Lot 6 DP 244543	• 118.07m² (Pink with Green hatching). ***To be compulsorily acquired.***

Appendix 2 – Proposed acquisition and construction license site plans

Lot 7302 DP 1136001	• 13745.59m² (part green hatching) ***To be acquired for temporary construction leases*** • 22826.65m² (part Pink with Green hatching). ***To be compulsorily acquired***.
Lot 7303 DP 11360019	• 2247.43m² (part green hatching) ***To be acquired for temporary construction leases*** • 1144.27m² (part Pink with Green hatching). ***To be compulsorily acquired***. The Crown plan (Figure 5) identifies Lot 7303 DP 1136001 as a strip of road which was closed vide Government Gazette No. 114 dated 27 September 1968.
Easements within Cammeray Park	• Numerous easements, predominantly affecting Ausgrid and Sydney Water will be affected by the compulsory acquisition. Refer to Figure 5 (Crown Plan 22537-3000)
Council lease with Cammeray Golf Club	• The lease comprises the following lots: Refer to *Figure 4* o Lots 2, 3 and 4 in DP 244543; (affected by the project) o Lot 1103 in DP 752067 (The Clubhouse - not affected by the project) o Lot 7302 in DP 1136001 (part affected by the project) o Lot 7303 in DP 1136001 (part affected by the project)
Impacts	This site is most severely impacted. The proposal includes the compulsory acquisition of a large section of the site which lies adjacent to the Warringah freeway, as well as the acquisition of portions of the site for 'temporary construction leases. The sites which are the subject of the compulsory acquisition comprises the water recycling plant and the dam.

Appendix 2 – Proposed acquisition and construction license site plans

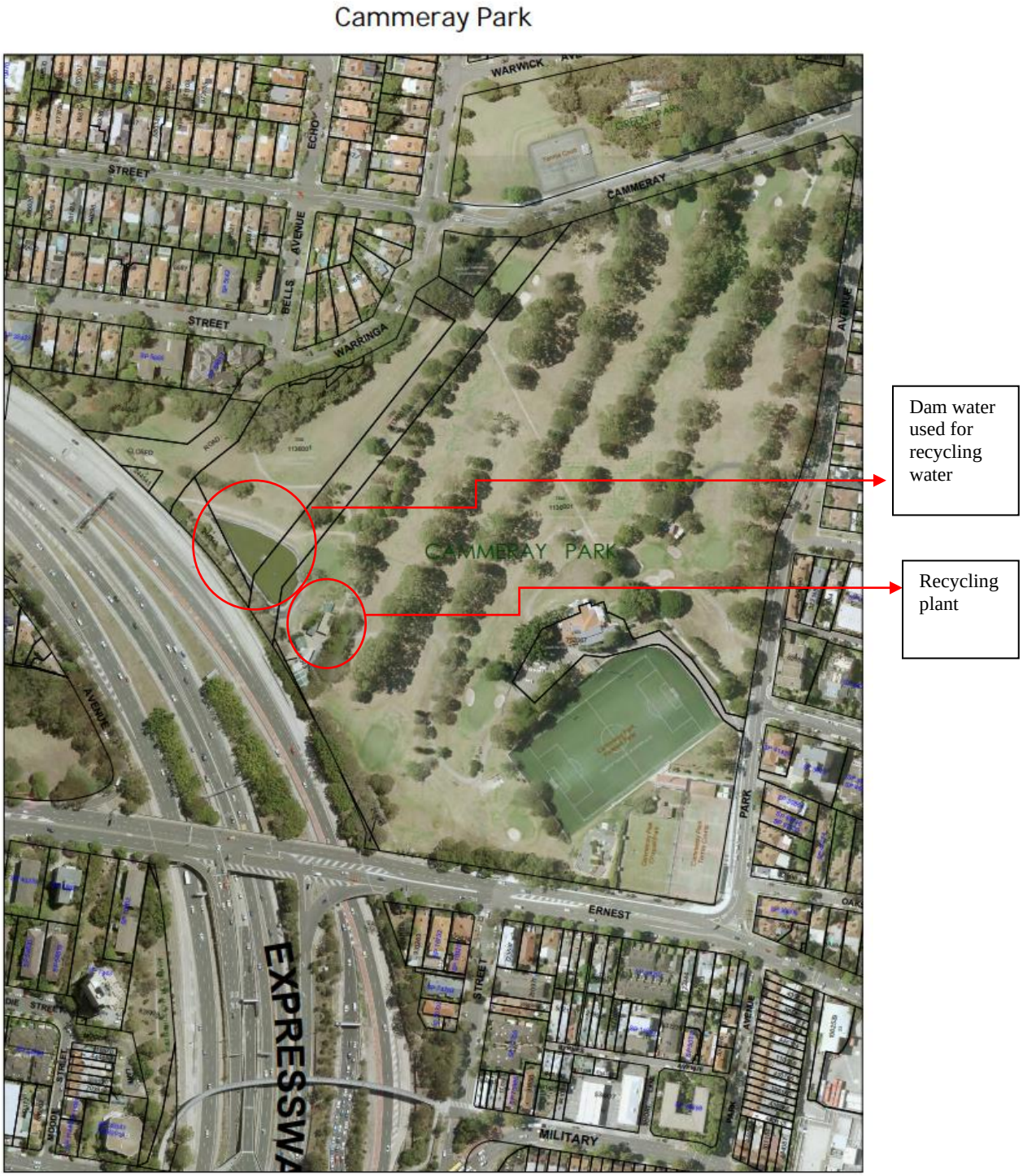


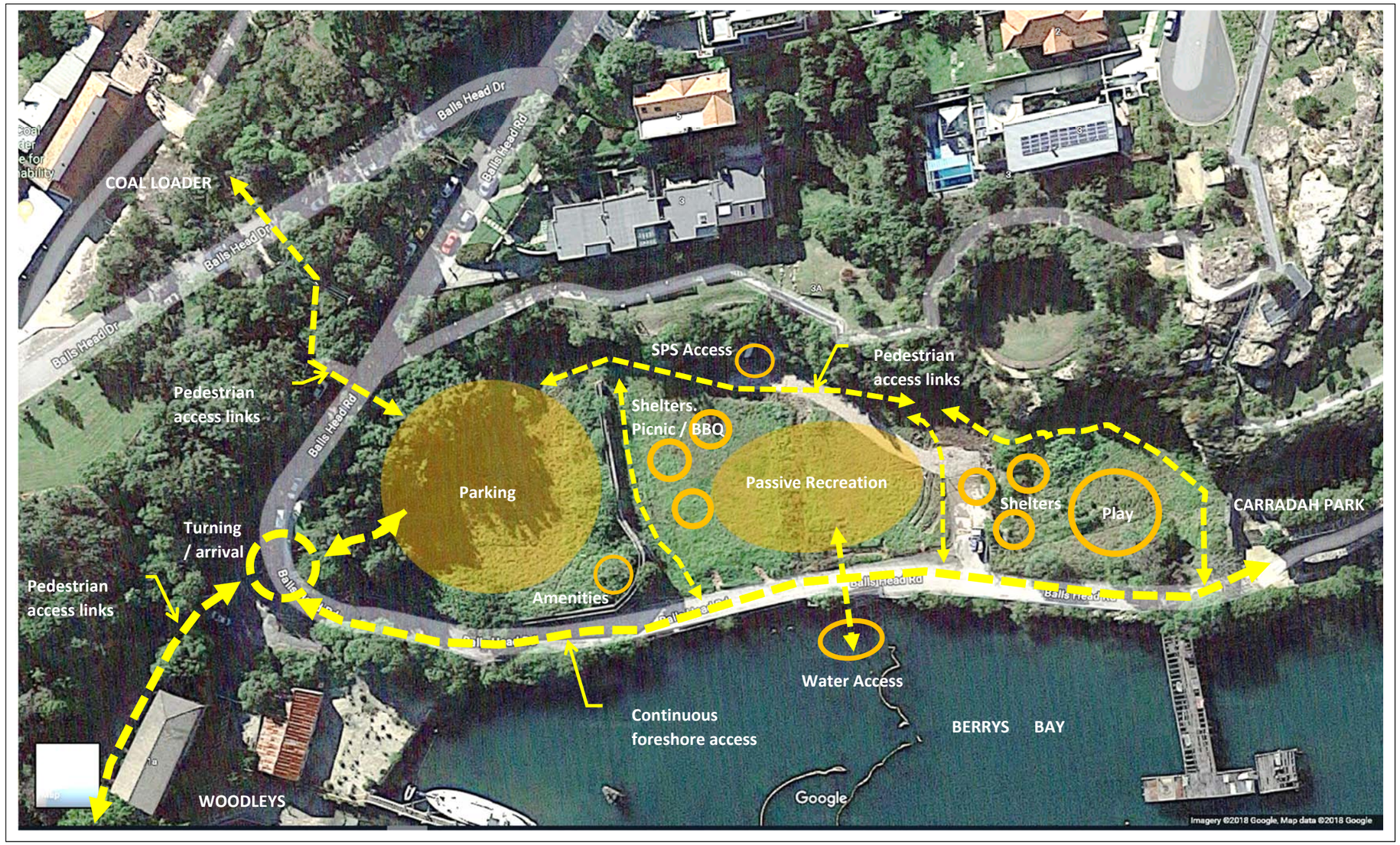
Figure 4 – Aerial view of Cammeray Park which is to be viewed together with Figure 7. The map outlines the water recycling plant and the dam which is used water recycling purposes.

BERRYS BAY – FUTURE PUBLIC OPEN SPACE

DRAFT PRINCIPLES & RELATED CONSIDERATIONS

1. Full access to the foreshore area. Removal of existing fence. Creation of pedestrian access points to the water's edge. There is an existing concrete seawall along the edge which could be cleaned off (pre-finalising design) and surveyed such that it can be incorporated in the new accessible waterfront edge.
2. A dinghy / kayak launching and storage facility. A lawn area nearby this to enable rigging of sailing dinghies / washing down of dinghies and kayaks
3. Retain all existing heritage remnants. A section of the freestanding northern end of the wall is proposed to be removed for the WHT7 - this needs to be carefully documented, deconstructed, stored and carefully reinstated after construction.
4. Parking area behind the bund wall (numbers to be determined). Green roof slab over.
5. Service access to the sewer pumping station (access via the carpark access).
6. Authorised vehicle access only past eastern extent of bund wall. Thus, some form of removal bollard/s are required across this point.
7. Minimum 3.5m width connecting trafficable foreshore pathway linking Carradah Park SW entry point with Balls Head Road
8. Playground area. Consider maritime / industrial heritage theme. Suggest located at eastern end of the working waterfront site near the above ground heritage remnants.
9. Picnic shelter and BBQ area.
10. Toilet facilities
11. Endemic plantings as far as possible. Eg use of angophora trees, which have reasonably open canopy
12. The 'bluff' cliff face has high value in the community. Therefore, it should be blocked by too much tree planting.
13. Access stairs linking up the curve of the tank cut-out escarpment to the high-level tank cut out area.
14. Access path behind Woodley's linking with Quarantine Depot and Council Beach.
15. Roundabout / resolve pedestrian conflicts site entry / end of Balls Head Drive
16. Restoration of Woodley's shed and other significant heritage elements in accordance with best practice heritage guidelines. Refer Conservation Management Strategy. Heritage interpretation, particularly of the Woodley's site.
17. Signage - directional (way-finding), naming and heritage interpretation
18. Refurbishment of the old brick office as possible future accommodation (eg YHA)
19. Suitably remediated site soil.
20. Drainage (subsoil and surface) as required (original site was terraced down to rock to sit the oil tanks on. The soil over was remediated by BP. However, given the sites location drainage remains an issue as water comes down over the cliff where the SPS is, and there is a perched water table effect caused by the underlying rock shelf. For the site to support the future vegetation and to remain useable during and after periods of wet weather, suitably design intervention is required.
21. Materials TBD
22. Restore Woodleys shed. Expressions of interest for use – Tribal Warrior, Sydney Heritage Fleet, Sea Scouts et al

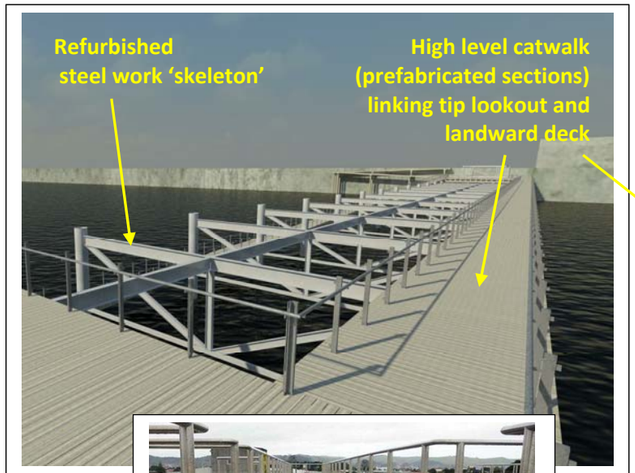
REFER CONCEPTUAL LAYOUT & LINKAGES OVERLEAF

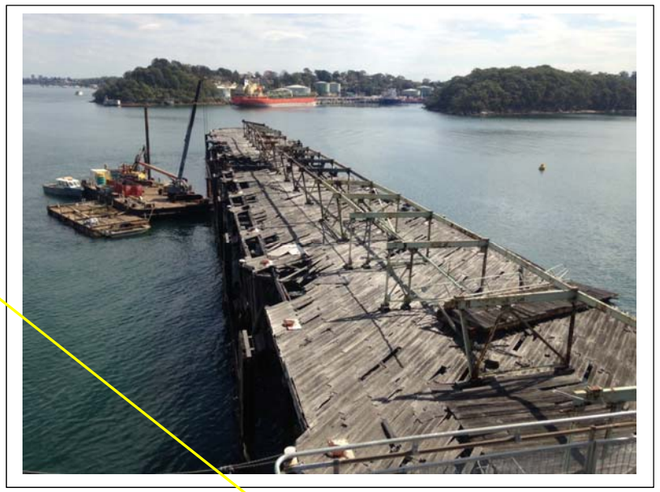


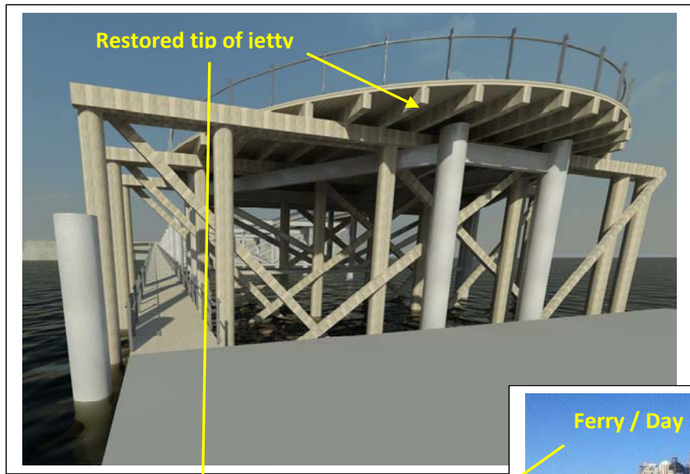
BERRYS BAY WORKING WATERFRONT SITE

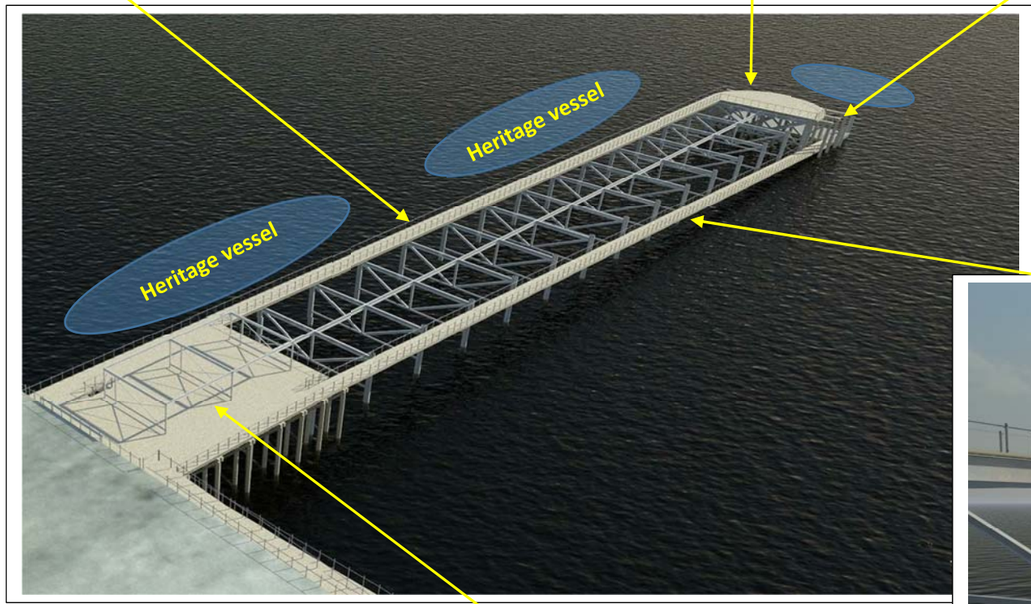
CONCEPTUAL LAYOUT AND LINKAGES

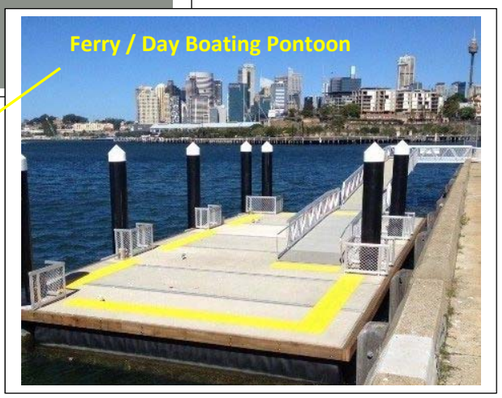
DRAFT – DB. NSC. Dec 2018 V1

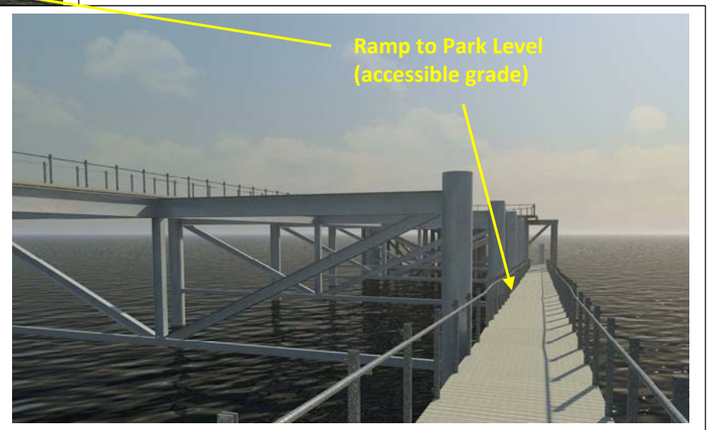


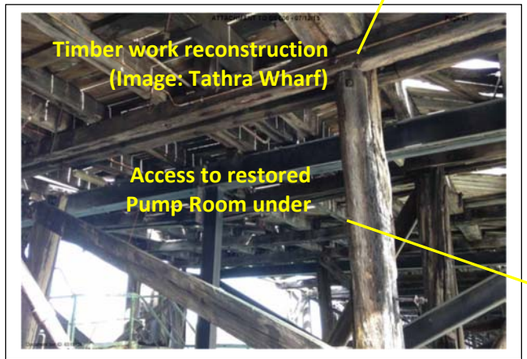


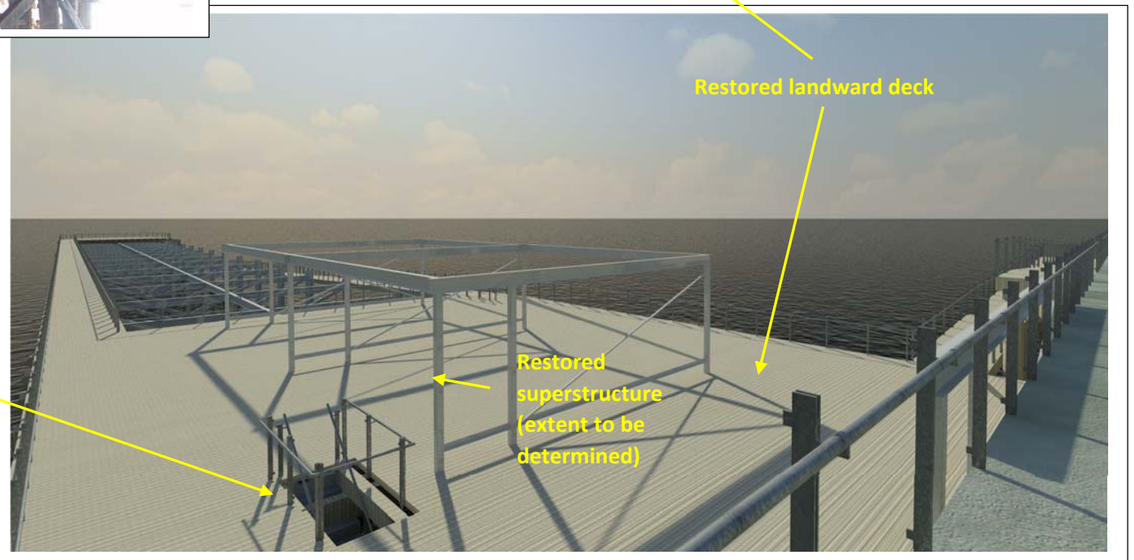








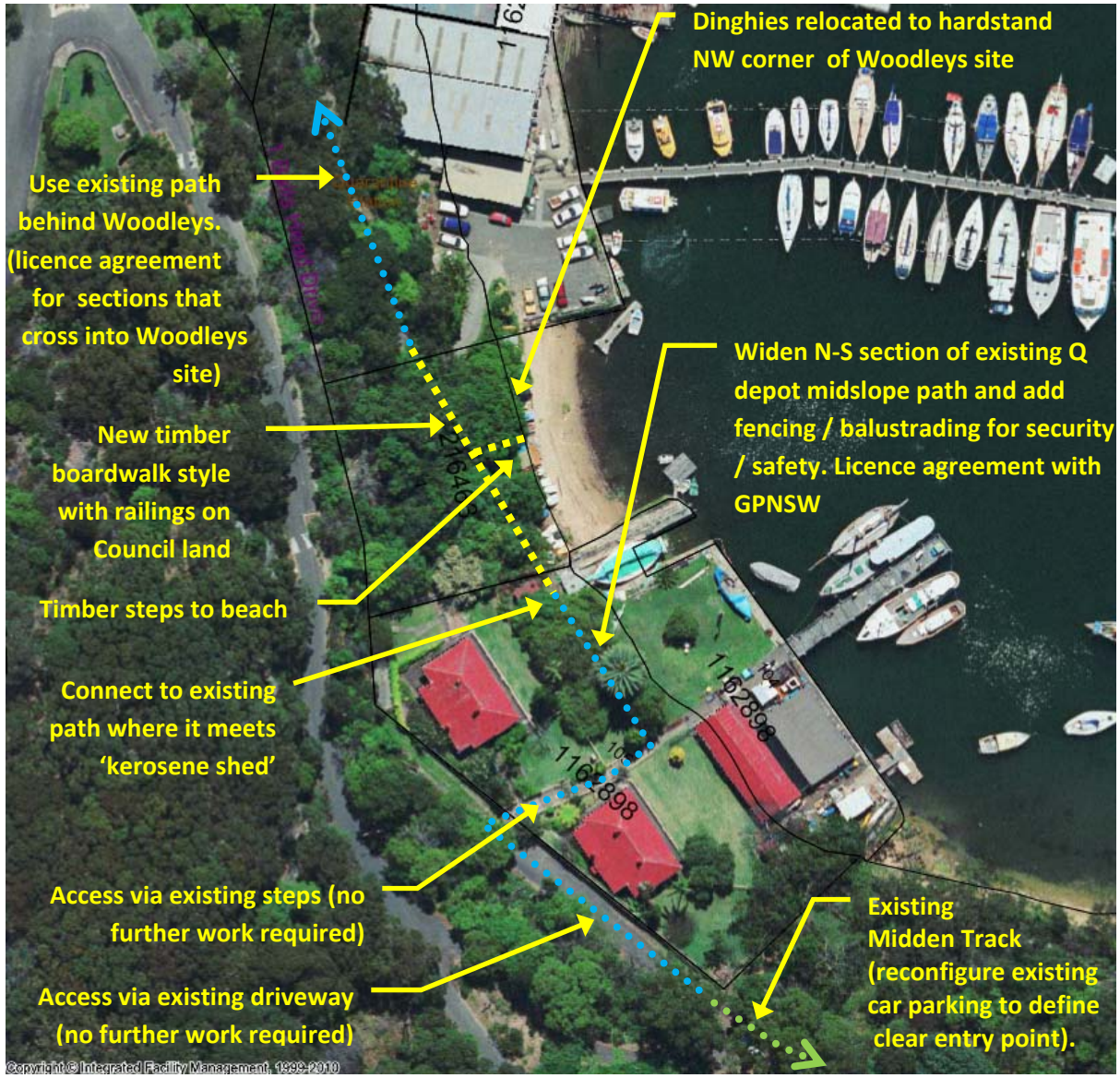




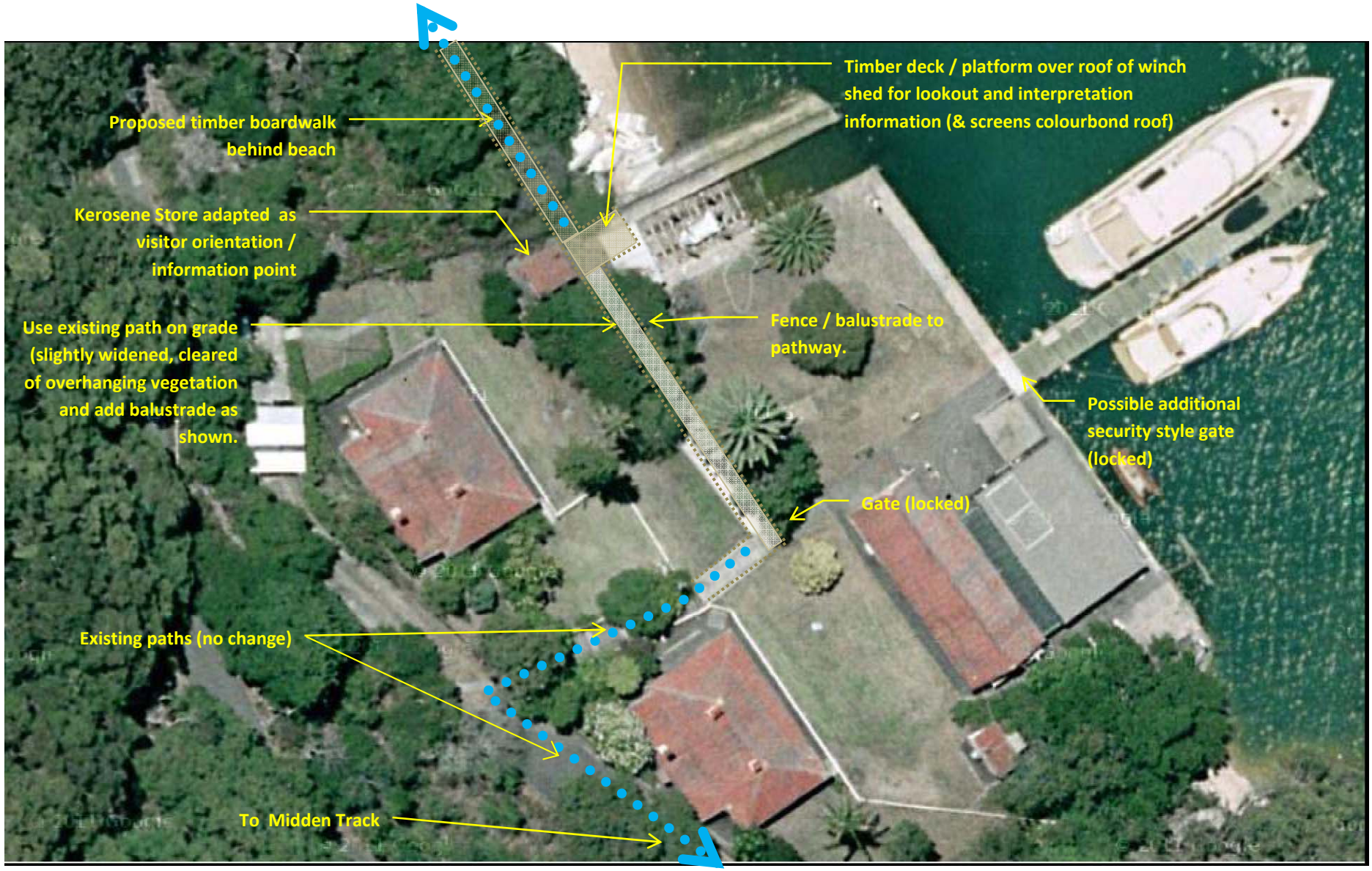
COAL LOADER JETTY WAVERTON

PROPOSED ADAPTIVE REUSE

D. Banbury 11.2018 Draft



BALLS HEAD ROAD TO MIDDEN TRACK ACCESS PATH
POSSIBLE DRAFT ARRANGEMENT
DB 2018_12_2 V2



BALLS HEAD ROAD TO MIDDEN TRACK ACCESS PATH
POSSIBLE DRAFT ARRANGEMENT – Q DEPOT DETAIL
DB 2013_06_07 V1

Western Harbour Tunnel and Warringah Freeway Upgrade Aboriginal Heritage Office Comments. February 2020

The Western Harbour Tunnel has proposed development which will have impact on significant sites in the North Sydney LGA. Measures and mitigations proposed for the management of the sites during the construction phase of the proposed project to ensure the Aboriginal sites will not be harmed. The management and mitigation of 'Whale' Rock is of the greatest concern to the Aboriginal Heritage Office as it is one of the few rock engravings with multiple figures in Sydney Harbour and it has other heritage values.

'Whale' Rock is considered part of the Balls Head Aboriginal heritage sites and landscape, which has been identified as significant in other chapters of the proposal. The engravings have active involvement from Aboriginal community groups and Council and has been part of the reconciliation and heritage management eras of Australian history. Two new figures, and eel and an echidna, were located as recently as 2011 through the monitoring program established in 1999 by the Aboriginal Heritage Office through North Sydney Council.

Section 4.9 of the Technical working paper: Cultural heritage assessment report - Ethnography - needs to be updated as the term Guringai is considered no longer appropriate to be used in the Northern Sydney region.

Section 8.2 of the Technical working paper: Cultural heritage assessment report – Impact Assessment – identifies potential direct and indirect impact to the Aboriginal sites through vibration, settlement and subsidence. There is no known research regarding subsidence on rock engravings. Consequently, the safety of the rock engravings cannot be guaranteed. The proponent has history of unexpected subsidence during SSI construction. The potential for irreparable damage caused due to unexpected subsidence must be highlighted and discussed further.

The identification of potential to harm Aboriginal sites triggers the application of an Aboriginal Heritage Impact Permit from the NSW Department of Planning, Infrastructure and Environment under the National Parks and Wildlife Act 1974. As the Western Harbour Tunnel and Warringah Freeway Upgrade is not yet approved the legislation governing the protection of Aboriginal sites is still active.

Secretary's Environmental Assessment Requirements – Aboriginal Heritage Office Comments on Application SSI 8863.

SEARs		
Desired Performance Outcome	Requirement	Comment
2. Environmental Impact Statement The project is described in sufficient detail to enable clear understanding	(h) A concise description of the general biophysical and socio-economic environment that is likely to be impacted by the project (including offsite impacts).	The EIS does not adequately address the socio-economic environment surrounding the nine identified Aboriginal sites

that the project has been developed through an iterative process of impact identification and assessment and project refinement to avoid, minimise or offset impacts so that the project, on balance, has the least adverse environmental, social and economic impact, including its cumulative impacts.	(m) Consideration of the interaction between mitigation measures, between impacts and between measures and impacts. (q) A chapter that synthesises the environmental impact assessment and provides: - the reasons justifying carrying out the project as proposed, having regard to the biophysical, economic and social considerations, including ecologically sustainable development and cumulative impacts	The EIS does not adequately address the social impact, and cumulative effects, of the proposed development. The sites, especially Whale Rock, are used by community groups for education purposes, both within the Aboriginal community and across the broader community. The EIS does not provide sufficient details to enable clear understanding of the social impacts, including cumulative impacts, during the construction phase of the project. The EIS does not provide sufficient details to enable clear understanding of the social impacts, including cumulative impacts, should the nine identified sites be harmed or destroyed during construction.
3. Assessment of Key Issues	Detail how any residual impacts will be managed or offset, and the approach and effectiveness of these measures.	The EIS does identifies the potential impact and description but does not adequately detail how any residual impacts to the nine identified sites will be managed or offset.
Key Issue and Desired Performance Outcome	Requirement (specific assessment requirement in addition to the general requirement above)	Comment
5. Noise and Vibration – Structural Construction noise and vibration (including airborne noise, ground-borne and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings and items including Aboriginal Places and environmental heritage. Increase in noise emissions and vibration affecting environmental	1. The Proponent must assess construction and operation noise and vibration impacts in accordance with relevant NSW noise and vibration guidelines. The assessment must include consideration of impacts to the structural integrity and heritage	The Cultural Heritage Assessment Report and Aboriginal Cultural Heritage Report do not adequately address the management of the Aboriginal sites in the proposed construction area in the event the sites are damaged.

heritage as defined in the Heritage Act 1977 during operation of the project are effectively managed.		
7. Place Making and Urban Design The project design complements the visual amenity, character and quality of the surrounding environment. The project contributes to the accessibility and connectivity of communities.	The Proponent must assess the visual and landscape impacts of the proposal, including ancillary infrastructure on: (a) Views and vistas (b) Streetscapes, key sites and buildings (c) Landscaping, green spaces and existing tress and tree canopy, including an assessment of likely magnitude of impacts to trees and need for removal to be undertaken by an arborist, including the provision of measures to minimise and offset impacts (d) Heritage items including Aboriginal places, environmental heritage; and areas of heritage sensitivity	The Cultural Heritage Assessment Report and Aboriginal Cultural Heritage Report do not adequately address the importance of the views and vistas relating to the nine identified Aboriginal sites. The report does not adequately discuss the importance of the sites in relation to the Sydney Harbour marine estate. The report identifies the sites as locally significant to North Sydney, however the sites are significant to Sydney Harbour as a whole. Consequently, sites such as Whale Rock, which the AHO considers to have state significance, should not be impacted during construction.
8. Socio-economic, Land Use and Property The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities. The project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance or appropriate access to	2. The proponent must assess impacts from construction and operation on potentially affected properties, businesses, recreational users and land and water uses (including potential cumulative impacts associated with use of Glebe Island and White Bay in consideration of other major developments in the precinct), including amenity impacts (including from cumulative and extended construction time frames and construction fatigue), property acquisitions/adjustments, future land users, access, relevant statutory rights, and community severance and barrier impacts resulting from the project.	The Cultural Heritage Assessment Report and Aboriginal Cultural Heritage Report do not adequately discuss the impacts construction will have on the Aboriginal community and the broader community. The proposed area of construction contains sites and areas that are used by the Aboriginal community for education purposes.

properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure.		
13. Heritage The design, construction and operation of the project facilities, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places.	1. The proponent must identify and assess any direct and/or indirect impacts (including cumulative, vibration and visual impacts) to the heritage significance of listed (and nominated) heritage items inclusive of: (a) Aboriginal places and objects, as defined under National Parks and Wildlife Act 1974 and in accordance with the principles and methods of assessment identified in the current guidelines; (b) Aboriginal places of heritage significance, as defined in the Standard Instrument – Principal Local Environment Plan (c) Environmental heritage, as defined under the Heritage Act 1977 (including potential items of heritage value, conservation areas, open space heritage landscapes, built heritage landscapes and archaeology); (e) Heritage items and conservation areas identified in local and regional planning environmental instruments covering the project area; 2. Where impacts to State or locally significant heritage items of archaeology are identified, the assessment must: (a) Include a significance assessment and statement of heritage impact for all heritage items	The proposal does not adequately discuss management plans should the Aboriginal sites become damaged. The proponent has identified and discussed mitigation measures to reduce the risk to the sites. The proponent has not discussed a mitigation plan in the event sites become damaged. The proponent does not adequately discuss the importance of the sites, particularly Whale Rock, which the AHO considers to have state significance, and their connection to the Sydney Harbour marine estate. The proponent does not adequately discuss the irreparable loss to the Aboriginal community and the broader community should the sites be harmed, even if inadvertent.

	(b) Provide a discussion of alternative locations and design options that have been considered to reduce heritage impacts (d) Consider potential impacts to the Balls Head Coal Loader particularly associated with vibration and disturbance as part of the ongoing works. Due to the potential significance of this site, options to ensure that is not impacted must be considered; (e) Consider impacts to the item of significance caused by, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, increased traffic, visual amenity, landscape and vistas, curtilage, subsidence and architectural nose treatment. (f) Provide a comparative analysis to inform the rarity and representative value of any heritage places proposed for demolition;	The AHO does not agree with the proposed route, given the proposed route places a number of Aboriginal sites at risk of harm. The AHO proposes alternate routes that avoid Aboriginal sites. Whale Rock is the only rock engraving platform with numerous and varying motifs in the Sydney Harbour marine estate. Whale Rock is a highly significant site and options to ensure that it is not impacted must be considered. The Cultural Heritage Assessment Report and Aboriginal Cultural Heritage Report do not adequately complete a comparative analysis informing the rarity and representative value of the Aboriginal sites. Whale Rock is the only site in Sydney Harbour with such varied and numerous engravings. It also has a modern focus of Aboriginal use.

Secretary's Environmental Assessment Requirements

Section 115Y of the *Environmental Planning and Assessment Act 1979*

Application Number	SSI 8863
Proposal	The Western Harbour Tunnel and Warringah Freeway Upgrade would comprise: • a new crossing of Sydney Harbour involving twin tolled motorway tunnels connecting WestConnex at Rozelle and the existing Warringah Freeway at North Sydney (the Western Harbour Tunnel); and • Upgrade and integration works along the existing Warringah Freeway, including connections to the Beaches Link and Gore Hill Freeway Connection project (the Warringah Freeway Upgrade).
Location	Western Harbour Tunnel – Land generally located between Rozelle and Cammeray, including the suburbs of Rozelle, Balmain, Birchgrove, Waverton, McMahons Point, North Sydney Neutral Bay, Crows Nest and Cammeray Warringah Freeway Upgrade – Land generally located between Milsons Point and Naremburn, including the suburbs of Milsons Point, Kirribilli, North Sydney, Neutral Bay, Cammeray, Crows Nest and Naremburn
Proponent	Roads and Maritime Services
Date of Issue	15 December 2017

General SEARs

Desired Performance Outcome	Requirement	Current Guidelines[1]
1. Environmental Impact Assessment Process The process for assessment of the proposal is transparent, balanced, well focussed and legal.	1. The Environmental Impact Statement must be prepared in accordance with Part 3 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (the Regulation). 2. It is the Proponent's responsibility to determine whether the project needs to be referred to the Commonwealth Department of the Environment and Energy for an approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). 3. The onus is on the Proponent to ensure legislative requirements relevant to the project are met.	EPBC Act Environment Assessment Process (SEWPAC, 2010)
2. Environmental Impact Statement The project is described in sufficient detail to enable clear understanding that the project has been developed through an iterative process of impact identification and assessment and project refinement to avoid, minimise or offset impacts so that the project, on balance, has the least adverse environmental, social and economic impact, including its cumulative impacts.	1. The EIS must include, but not necessarily be limited to, the following: (a) an executive summary; (b) a description of the project and all components and activities (including ancillary components and activities) required to construct and operate it, including: – the proposed route; – design of the tunnels, interchanges (inclusive of tunnel portals and entry and exit ramps), road user, pedestrian and cyclist facilities, and lighting; – surface road upgrade works, including road widening, intersection treatment and grade separation works, property access, parking, pedestrian and cyclist facilities (including appropriate locations for overbridges) and public transport facilities; – ancillary infrastructure and operational facilities, such as operational and maintenance facilities, ventilation structures and systems, and fire and emergency services and infrastructure for the proposal, including (if required) additional infrastructure (such as tolling infrastructure); – location and operational requirements of construction ancillary facilities and access; – land use changes as a result of the proposal and the acquisition of privately owned, Council and Crown lands, and impacts to Council and Crown lands; and – the relationship and/or integration of the project with existing and proposed[2] public and freight transport services; (c) a statement of the objective(s) of the project, (d) a summary of the strategic need for the project with regard to its State significance and relevant State Government policy; (e) an analysis of any feasible alternatives to the project[3];	

[1] Guidelines listed are the current list of guidelines that may be applicable to a CSSI project. It is the Proponents responsibility to identify, and justify, which guidelines have been applied to a specific project.

[2] Proposed – as identified in relevant State strategies and the like.

[3] Alternatives to a project are different projects which would achieve the same project objective(s) including the consequences of not carrying out the project. For example, alternatives to a road project may be a rail project in the same area and alternate routes for the road, or a combination of these alternatives.

Desired Performance Outcome	Requirement	Current Guidelines[1]
	(f) a description of feasible options within the project[4], including: – alternative methods considered for the construction of the project, including the tunnels; and – staging of the proposal; (g) a description of how alternatives to and options within the project were analysed to inform the selection of the preferred alternative / option. The description must contain sufficient detail to enable an understanding of why the preferred alternative to, and options(s) within, the project were selected, including: – details of the short-listed route and tunnel options considered, and the criteria that was considered in the selection of the preferred route and tunnel design; – details of the alternative construction methods that were considered for tunnel construction, particularly those areas spanning Sydney Harbour; – the alternative tunnel design and ventilation options considered to meet the air quality criteria for the proposal; and – a justification for the preferred proposal taking into consideration the objects of the *Environmental Planning and Assessment Act 1979;* (h) a concise description of the general biophysical and socio-economic environment that is likely to be impacted by the project (including offsite impacts). Elements of the environment that are not likely to be affected by the project do not need to be described; (i) a demonstration of how the project design has been developed to avoid or minimise likely adverse impacts during construction and operation of the project; (j) the identification and assessment of key issues as provided in the 'Assessment of Key Issues' performance outcome; (k) a statement of the outcome(s) the proponent will achieve for each key issue; (l) measures to avoid, minimise or offset impacts must be linked to the impact(s) they treat, so it is clear which measures will be applied to each impact; (m) consideration of the interactions between mitigation measures, between impacts and between measures and impacts;[5] (n) identification of other environmental impacts (such as protected and sensitive lands, sedimentation and erosion and impacts to water front land) and proposed measures for managing and/or mitigating the level of impact; (o) an assessment of the cumulative impacts of the project taking into account other projects that have been approved but where construction has not commenced, projects that have commenced	

[4] Options within the project are variations of the same project. For example, options within a road project could be design of an intersection; the location or design of a bridge; locations for a ventilation outlet.

[5] Measures proposed to avoid or minimise one impact may cause an unintended impact on another issue. Therefore these impacts and their interactions need to be analysed and resolved where possible.

Desired Performance Outcome	Requirement	Current Guidelines[1]
	construction, and projects that have recently been completed; (p) statutory context of the project as a whole, including: – how the project meets the provisions of the EP&A Act and EP&A Regulation; and – a list of any approvals that must be obtained under any other Act or law before the project may lawfully be carried out; (q) a chapter that synthesises the environmental impact assessment and provides: – a succinct but full description of the project for which approval is sought; – a description of any uncertainties that still exist around design, construction methodologies and/or operational methodologies and how these will be resolved in the next stages of the project; – a compilation of the impacts of the project that have not been avoided; – a compilation of the proposed measures associated with each impact to avoid or minimise (through design refinements or ongoing management during construction and operation) or offset these impacts; – a compilation of the outcome(s) the proponent will achieve; and – the reasons justifying carrying out the project as proposed, having regard to the biophysical, economic and social considerations, including ecologically sustainable development and cumulative impacts; and (r) relevant project plans, drawings, diagrams in an electronic format that enables integration with mapping and other technical software. 2. The EIS must only include data and analysis that is reasonably needed to make a decision on the proposal. Relevant information must be succinctly summarised in the EIS and included in full in appendices. Irrelevant, conflicting or duplicated information must be avoided.	

Desired Performance Outcome	Requirement	Current Guidelines[1]
3. Assessment of Key Issues* Key issue impacts are assessed objectively and thoroughly to provide confidence that the project will be constructed and operated within acceptable levels of impact. * Key issues are nominated by the Proponent in the CSSI project application and by the Department in the SEARs. Key issues need to be reviewed throughout the preparation of the EIS to ensure any new key issues that emerge are captured. The key issues identified in this document are not exhaustive but are key issues common to most CSSI projects.	1. The level of assessment of likely impacts must be proportionate to the significance of, or degree of impact on, the issue, within the context of the proposal location and the surrounding environment. The level of assessment must be commensurate to the degree of impact and sufficient to ensure that the Department and other government agencies are able to understand and assess impacts. 2. For each key issue the Proponent must: (a) describe the biophysical and socio-economic environment, as far as it is relevant to that issue, including adequate baseline data, in terms of temporal, spatial and parameters monitored; (b) describe the legislative and policy context, as far as it is relevant to the issue; (c) identify, describe and quantify (if possible) the impacts associated with the issue, including the likelihood and consequence of the impact (comprehensive risk assessment), and the cumulative impacts of: a) concurrent project construction activities; and b) proposed and approved projects (where information is available at the time of writing); (d) demonstrate how potential impacts have been avoided (through design, or construction or operation methodologies); (e) detail how likely impacts that have not been avoided through design will be minimised, and the predicted effectiveness of these measures (against performance criteria where relevant); and (f) detail how any residual impacts will be managed or offset, and the approach and effectiveness of these measures. 3. Where multiple reasonable and feasible options to avoid or minimise impacts are available, they must be identified and considered and the proposed measure justified taking into account the public interest.	
4. Consultation The project is developed with meaningful and effective engagement during project design and delivery.	1. The project must be informed by consultation, including with relevant local, State and Commonwealth government agencies (including the Harbour Master where disturbance of seabeds, shipping channel closures or marine movement of materials/spoil are proposed), infrastructure and service providers, special interest groups (including Local Aboriginal Land Councils, Aboriginal stakeholders, and pedestrian and bicycle user groups), affected landowners, businesses and the community. 2. The Proponent must document the consultation process, and demonstrate how the project has responded to the inputs received. 3. The Proponent must describe the timing and type of community consultation proposed during the design and delivery of the project, the mechanisms for community feedback, the mechanisms for keeping the community informed, and procedures for complaints handling and resolution. 4. The Proponent must assess the potential for complaint fatigue to occur during construction of the project and describe how mitigation measures, complaint handling procedures and community consultation	

Desired Performance Outcome	Requirement	Current Guidelines[1]
	mechanisms will mitigate complaint fatigue. The assessment must consider the cumulative impacts from the project and other major projects in the local area.	

Key Issue SEARs

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
1. Transport and Traffic Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts. The safety of transport system customers is maintained. Impacts on network capacity and the level of service are effectively managed. Works are compatible with existing infrastructure and future transport corridors.	1. The Proponent must assess construction transport and traffic (vehicle, marine, pedestrian and cyclists) impacts, including, but not necessarily limited to: (a) a considered approach to route identification and scheduling of marine and land transport movements, particularly outside standard construction hours; (b) the number, frequency and size of construction related vehicles (passenger, marine, commercial and heavy vehicles, including spoil management movements); (c) construction worker parking; (d) the nature of existing traffic (types and number of movements) on construction access routes (including consideration of peak traffic times and sensitive road users and parking arrangements including internal Port roads and land if utilised during construction); (e) access constraints and impacts on public transport, pedestrians and cyclists; (f) how construction of the project affects the capacity of, and the need to close, divert or otherwise reconfigure elements of, the road, cycle and pedestrian network; (g) details of how construction and scheduling of works are to be coordinated in regard to public events and cumulative traffic impacts resulting from concurrent work on the project and other major projects, under or preparing for or commencing construction in the vicinity of the proposal; (h) alternatives to road transport of construction spoil including marine and rail options as well as potential re-use in existing land reclamation	Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2007) Guide to Traffic Generating Developments Version 2.2 (RTA, 2002) Cycling Aspects of Austroads Guides (Austroads, 2014) NSW Bicycle Guidelines v 1.2 (RTA, 2005) Planning Guidelines for Walking and Cycling (DIPNR, 2004) NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	areas or in association with Resource Recovery Exceptions (if obtained from the EPA) to minimise traffic impacts on the road network; (i) the likely risks of the project to public safety, paying particular attention to pedestrian safety and users of Sydney Harbour; and (j) impacts to water based traffic and shipping channels on Sydney Harbour. 2. The Proponent must assess and model the operational transport impacts of the project including, but not necessarily limited to: (a) forecast travel demand and traffic volumes (expressed in terms of total numbers and heavy and light vehicle numbers) for the project and the surrounding road, cycle and public transport network, including potential shifts of traffic movements on alternate routes outside the proposal area (such as toll avoidance) and impact of permanent street closures directly attributable to the SSI; (b) accessibility impacts in commercial centres within the vicinity of the project; (c) travel time analysis; (d) performance of key interchanges and intersections by undertaking a level of service analysis at key locations; (e) wider transport interactions (local and regional roads, cycling, public and freight transport), taking into account the Sydney City Centre Access Strategy and planned future urban release areas such as the Bays Precinct; (f) induced traffic and operational implications for existing and proposed public transport (particularly with respect to strategic bus corridors and bus routes and permanent closure/relocation of bus stops) and consideration of opportunities to improve public transport; (g) impacts on cyclists and pedestrian access and safety; (h) property and business access and on street parking; and. (i) an explanation for the scope of the modelled area, including justification of the nominated boundaries.	

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
2. Air Quality The project is designed, constructed and operated in a manner that minimises air quality impacts (including nuisance dust and odour) to minimise risks to human health and the environment to the greatest extent practicable.	1. The Proponent must undertake an air quality impact assessment (AQIA) for construction and operation of the project in accordance with the current guidelines. 2. The Proponent must ensure the AQIA also includes the following: (a) demonstrated ability to comply with the relevant regulatory framework, specifically the *Protection of the Environment Operations Act 1997* and the *Protection of the Environment Operations (Clean Air) Regulation 2010*; (b) the identification of all potential sources of air pollution including details of the location, configuration and design of all potential emission sources including ventilation systems and tunnel portals; (c) a review of vehicle emission trends and an assessment that uses or sources best available information on vehicle emission factors; (d) an assessment of impacts (including human health impacts) from potential emissions of PM_{10}, $PM_{2.5}$, CO, NO_2 and other nitrogen oxides and volatile organic compounds (eg BTEX) including consideration of short and long term exposure periods; (e) consider the impacts from the dispersal of these air pollutants on the ambient air quality along the proposal route, proposed ventilation outlets and portals, surface roads, ramps and interchanges and the alternative surface road network; (f) a qualitative assessment of the redistribution of ambient air quality impacts compared with existing conditions, due to the predicted changes in traffic volumes; (g) assessment of worst case scenarios for in-tunnel and ambient air quality, including a range of potential ventilation scenarios and range of traffic scenarios, including worst case design maximum traffic flow scenario (variable speed) and worst case breakdown scenario, and discussion of the likely occurrence of each; (h) details of the proposed tunnel design and mitigation measures to address in-tunnel air quality and the air quality in the vicinity of portals and any mechanical ventilation systems (ie ventilation outlets and air inlets) including details of proposed air quality monitoring (including frequency and criteria); (i) a demonstration of how the project and ventilation design ensures	Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (EPA, 2016) Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC, 2007) Technical Framework - Assessment and Management of Odour from Stationary Sources in NSW (DEC, 2006) In-Tunnel Air Quality (Nitrogen Dioxide) Policy (Advisory Committee on Tunnel Air Quality, 2016) Optimisation of the Application of GRAL in the Australian Context (Advisory Committee on Tunnel Air Quality, 2017)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	that concentrations of air emissions meet NSW, national and international best practice for in-tunnel and ambient air quality, and taking into consideration the approved criteria for the M4 East project, New M5 project and the In-Tunnel Air Quality (Nitrogen Dioxide) Policy; (j) details of any emergency ventilation systems, such as air intake/exhaust outlets, including protocols for the operation of these systems in emergency situations, potential emission of air pollutants and their dispersal, and safety procedures; (k) details of in-tunnel air quality control measures considered, including air filtration, and justification of the proposed measures or for the exclusion of other measures; (l) a description and assessment of the impacts of potential emissions sources relating to construction, including details of the proposed mitigation measures to prevent the generation and emission of dust (particulate matter and TSP) and air pollutants (including odours) during the construction of the proposal, particularly in relation to ancillary facilities (such as concrete batching plants), dredge and tunnel spoil handling and storage at Glebe Island and White Bay, the use of mobile plant, stockpiles and the processing and movement of spoil; and (m) a cumulative assessment of the in-tunnel, local and regional air quality impacts from the operation of the project and due to the operation of and potential continuous travel through motorway tunnels and surface roads.	
3. Health and Safety The project avoids or minimises any adverse health impacts arising from the project. The project avoids, to the greatest extent possible, risk to public safety.	1. The Proponent must assess the potential health risks from the construction and operation of the project. 2. The assessment must: (a) describe the current known health status of the potentially affected population; (b) describe how the design of the proposal minimises adverse health impacts and maximises health benefits; (c) assess human health risks from the operation and use of the tunnel under a range of conditions, including worst case operating conditions	Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards, Commonwealth of Australia (enHealth, 2012) Air Quality in and Around Traffic Tunnels (NHMRC, 2008) Methodology for Valuing the Health Impacts of Changes in Particle Emissions (EPA, 2013)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	and the potential length of motorway tunnels in Sydney; (d) human health risks and costs associated with the construction and operation of the proposal, including those associated with air quality, odours, noise and vibration (including residual noise following application of mitigation measures), construction fatigue and social impacts (including from acquisitions) on the adjacent and surrounding areas, as well as opportunity costs (such as those from social infrastructure and active transport impacts)during the construction and operation of the proposal; (e) include both incremental changes in exposure from existing background pollutant levels and the cumulative impacts of project specific and existing pollutant levels at the location of the most exposed receivers and other sensitive receptors (including public open space areas, child care centres, schools, hospitals and aged care facilities); (f) assess the likely risks of the project to public safety, paying particular attention to pedestrian safety, subsidence risks, bushfire risks and the handling and use of dangerous goods; (g) assess the opportunities for health improvement; (h) assess the distribution of the health risks and benefits; (i) include a cumulative human health risk assessment inclusive of in-tunnel, local and regional impacts due to the operation of and potential continuous travel through motorway tunnels and surface roads.	Health Impact Assessment: A practical guide (NSW Health, 2007) Health Impact Assessment Guidelines, Commonwealth Department of Health and Aged Care (enHealth, 2002) SEPP No. 33 - Hazardous and Offensive Development
4. Noise and Vibration - Amenity Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on acoustic amenity. Increases in noise emissions and vibration affecting nearby properties and other sensitive receivers during operation of the project are effectively managed to protect the amenity	1. The Proponent must assess construction and operational noise and vibration impacts in accordance with relevant NSW noise and vibration guidelines. The assessment must take into consideration and address the redistribution of traffic (including on local feeder roads) and operational plant and equipment, and must include consideration of impacts to sensitive receivers and include consideration of sleep disturbance and, as relevant, the characteristics of noise and vibration (for example, low frequency noise). 2. An assessment of construction noise and vibration impacts must address: (a) the nature of construction activities (including transport, tonal or	Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration (ANZECC, 1990) Assessing Vibration: a technical guideline (DEC, 2006) Interim Construction Noise Guideline (DECCW, 2009) Noise Policy for Industry (EPA, 2017) Construction Noise and Vibration Guideline (RMS, 2016) NSW Road Noise Policy (DECCW, 2011)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
and well-being of the community.	impulsive noise-generating works and the removal of operational noise barriers, as relevant); (b) the intensity and duration of noise and vibration impacts (both air and ground borne. This must include consideration of extended construction impacts associated with ancillary facilities (and the like) and construction fatigue; (c) the identification of receivers, existing and likely, during the construction period; (d) the nature, sensitivity and impact to receivers; (e) the need to balance timely conclusion of noise and vibration-generating works with periods of receiver respite, and other factors that may influence the timing and duration of construction activities (such as traffic management); (f) the potential for works outside standard construction hours, including predicted levels, exceedances, number of potentially affected receivers, and justification for the activity in terms of the *Interim Construction Noise Guideline* (DECCW, 2009); (g) a cumulative noise and vibration assessment inclusive of impacts from the project (including concurrent project construction activities); (h) a cumulative noise and vibration assessment of the impacts from the project and the construction of other relevant development in the vicinity of the proposal; (i) details and analysis of the effectiveness of mitigation measures to adequately manage identified impacts, including cumulative impacts as identified in (g) and (h) and a clear identification of residual noise and vibration following application of mitigation measures; and (j) a description of how community preferences have been taken into account in the design of mitigation measures and consider tailored mitigation, management and communication strategies for vulnerable community members. 3. The Proponent must demonstrate that blast impacts are capable of complying with the current guidelines, if blasting is required.	Development Near Rail Corridors and Busy Roads – Interim guideline (DoP, 2008) Noise Mitigation Guideline (RMS, 2015) Noise Criteria Guideline (RMS, 2015) NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
5. Noise and Vibration - Structural Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings and items including Aboriginal places and environmental heritage. Increases in noise emissions and vibration affecting environmental heritage as defined in the *Heritage Act 1977* during operation of the project are effectively managed.	1. The Proponent must assess construction and operation noise and vibration impacts in accordance with relevant NSW noise and vibration guidelines. The assessment must include consideration of impacts to the structural integrity and heritage significance of items (including Aboriginal places and items of environmental heritage) as well as property in general. 2. The Proponent must demonstrate that blast impacts are capable of complying with the current guidelines, if blasting is required.	German Standard DIN 4150-3: Structural Vibration - effects of vibration on structures Assessing vibration: a technical guideline (DEC, 2006)
6. Biodiversity The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity. Offsets and/or supplementary measures are assured which are equivalent to any remaining impacts of project construction and operation.	1. Biodiversity impacts related to the proposal are to be assessed in accordance with the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR). 2. The BDAR must include information in the form detailed in the *Biodiversity Conservation Act 2016* (s. 6.12), *Biodiversity Conservation Regulation 2017* (s 6.8) and *Biodiversity Assessment Method* (BAM) including details of the measures proposed to address the offset obligation as follows: (a) the total number and classes of biodiversity credits required to be retired for the developments/project; (b) the number of classes of like-for-like biodiversity credits proposed to be retired; (c) the number and classes of biodiversity credits proposed to be retired in accordance with the variation rules; (d) any proposal to fund a biodiversity conservation action; and (e) any proposal to make a payment to the Biodiversity Conservation Fund.	Policy and Guidelines for Fish Habitat Conservation and Management – Update 2013 (DPI, 2013) Threatened Species Survey and Assessment Guidelines Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries, 2003) NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013) Aquatic Ecology in Environmental Impact Assessment – EIA Guideline (Marcus Lincoln Smith 2003)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	3. If requesting the application of the variation rules, the BDAR must contain details of what reasonable steps have been taken to attempt to obtain the required like-for-like biodiversity credits. 4. The BDAR must be prepared by a person accredited in accordance with the *Accreditation scheme for the Application of the Biodiversity Assessment Method Order 2017* under s. 6.10 of the *Biodiversity Conservation Act 2016*. 5. In accordance with section 9.1 and 9.2 of the BAM the BDAR must assess all direct and indirect impacts of the proposal on native vegetation, threatened ecological communities and threatened species habitat. 6. Impacts on biodiversity values that cannot be assessed using the BAM must also be otherwise assessed. The values include: (a) marine mammals; (b) wandering seabirds; and (c) matters of national significance listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. 7. Species declared as threatened under the *Biodiversity Conservation Act 2016* and recorded recently (since 1990) within approximately 1.5 kilometres of the project's development corridor should be considered as likely to be affected by the proposal.	
7. Place Making and Urban Design The project design complements the visual amenity, character and quality of the surrounding environment. The project contributes to the accessibility and connectivity of communities.	1. The Proponent must identify how functional 'place' outcomes of public benefit will be achieved, including design principles and strategies that: (a) consider areas identified for future urban renewal; (b) capitalise on reduced traffic volumes and the reduction of traffic permeation, particularly in and around commercial and community centres; (c) avoid locating infrastructure, including ancillary facilities, adjoining residential areas and other sensitive receivers, and justify where this cannot be achieved; (d) achieve high quality landscaping, streetscapes, architecture and design;	Better Placed – an integrated design policy for the built environment in NSW (NSW Government Architect, 2017) AS4282-1997 Control of the obtrusive effects of outdoor lighting Beyond the Pavement: RTA urban design policy, procedures and design principles (RMS, 2014) Bridge Aesthetics: Design guidelines to improve the appearance of bridges in NSW (RMS, 2012)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	(e) identify urban design strategies and opportunities that will enhance healthy, cohesive and inclusive communities, including in relation to accessibility and connectivity; (f) consider resulting residual land treatments, and demonstrate how the proposed hard and soft urban design elements of the proposal would be consistent with the existing and desired future character of the area traversed or affected by the proposal; (g) identify opportunities to utilise surplus or residual land, particularly for the provision of community space (passive and recreational) and utilise key structures (such as ventilation outlets) for multiple uses i.e. integration with other structures; and (h) explore the use of Crime Prevention Through Environmental Design (CPTED) principles during the design development process, including natural surveillance, lighting, walkways, signage and landscape. 2. The Proponent must describe the accessibility elements of the proposal including relevant accessibility legislation and guidelines, including: (a) Impacts on public transport infrastructure and services; (b) impacts on pedestrian and cyclist access and safety across and adjoining the proposal; and (c) opportunities to integrate and enhance accessibility including the provisions public and active transport infrastructure as a result of the proposal. 3. The Proponent must assess the visual and landscape impacts of the proposal, including ancillary infrastructure on: (a) views and vistas; (b) streetscapes, key sites and buildings; (c) landscaping, green spaces and existing trees and tree canopy, including an assessment of likely magnitude of impacts to trees and need for removal to be undertaken by an arborist, including the provision of measures to minimise and offset impacts; (d) heritage items including Aboriginal places, environmental heritage; and areas of heritage sensitivity; and (e) the local community.	NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013) Crime prevention and the assessment of development applications (DUAC, 2001) Crime Prevention through Environmental Design (CPTED) (Queensland Government, 2007) Disability (Access to Premises – Buildings) Standards 2010 Technical guideline for Urban Green Cover in NSW Healthy Urban Development *Checklist* (NSW Health, 2009) Cycling Aspects of Austroads Guides (Austroads, 2014) NSW Bicycle Guidelines v 1.2 (RTA, 2005) Planning Guidelines for Walking and Cycling (DIPNR, 2004) Environmental Health Risk Assessment, Guidelines for assessing human health risks from environmental hazards, Commonwealth of Australia (enHealth, 2012) Health Impact Assessment: A practical guide (NSW Health, 2007)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	4. The Proponent must provide artist impressions and perspective drawings of the proposal from key receiver locations to illustrate the proposal and its visual impacts.	
8. Socio-economic, Land Use and Property The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities. The project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure.	1. The Proponent must assess social and economic impacts (of all phases of the project) in accordance with the current guidelines (including cumulative construction and operational impacts of the proposal and other major projects in the vicinity of the project) and in consultation with relevant land owners (such as the Ports Authority of NSW and those land owners whose property is being acquired). 2. The Proponent must assess impacts from construction and operation on potentially affected properties, businesses, recreational users and land and water users (including potential cumulative impacts associated with use of Glebe Island and White Bay in consideration of other major developments in the precinct), including amenity impacts (including from cumulative and extended construction time frames and construction fatigue), property acquisitions/adjustments, future land uses, access, relevant statutory rights, and community severance and barrier impacts resulting from the project. 3. Where an immersed tube (IMT) method of construction is proposed for use in Sydney Harbour, the Proponent must: (a) provide details of how reductions to current Harbour depths will be avoided; (b) provide details confirming the level of protection for the IMTs will be similar to or better than that of the existing Sydney Harbour Tunnel; (c) identify impacts to ship scheduling in consultation and agreement with the Harbour Master; (d) assess the impact to the Viva supply chain for fuel oils at Gore Cove; and (e) provide details of full mission simulation which takes in account, but is not necessarily limited to: i. movement and placement of the IMTs; and ii. identification of weather restrictions and towage requirements for the safe movement of seagoing ships to and from berths in Glebe Island, White Bay, Gore Cove and past proposed Project	Environmental Planning and Impact Assessment Practice Note: Socio-economic Assessment (RMS, 2013) Guidelines for developments adjoining land and water managed by DECCW (DECCW 2010);

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	work areas in Glebe Island and White Bay, and Birchgrove to Waverton. 4. The Proponent must assess potential impacts on utilities (including communications, electricity, gas, fuel and water and sewerage) and the relocation of these utilities. 5. Where the project is predicted to impact on utilities the Proponent must undertake a utilities management strategy, identifying management options, including relocation or adjustment of the utilities. 6. A draft Community Consultation Framework must be prepared identifying relevant stakeholders, procedures for distributing information and receiving/responding to feedback and procedures for resolving stakeholder and community complaints during construction and operation. Key issues that must be addressed in the draft Framework include, but are not limited to: (a) traffic management (including property access, pedestrian access); (b) landscaping/urban design matters; (c) construction activities including out of hours work; and (d) noise and vibration mitigation and management.	
9. Water - Hydrology Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised. The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved). Sustainable use of water resources.	1. The Proponent must describe (and map) the existing hydrological regime for any surface and groundwater resource (including reliance by users and for ecological purposes and groundwater dependent ecosystems) likely to be impacted by the project, including rivers, streams, wetlands and estuaries as described in Appendix 2 of the *Framework for Biodiversity Assessment – NSW Biodiversity Offsets Policy for Major Projects* (OEH, 2014). 2. The Proponent must prepare a detailed water balance for ground and surface water including the proposed intake and discharge locations (including mapping of these locations), volume, frequency and duration for both the construction and operational phases of the project. 3. The Proponent must assess (and model if appropriate) the impact of the construction and operation of the project and any ancillary facilities (both	Framework for Biodiversity Assessment – Appendix 2 (OEH, 2014) Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008) NSW Aquifer Interference Policy (DPI, 2012) NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013) Risk assessment Guidelines for Groundwater Dependent Ecosystems (Office of Water, 2012)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	built elements and discharges) on surface and groundwater hydrology in accordance with the current guidelines, including: (a) natural processes within rivers, wetlands, estuaries, marine waters and floodplains that affect the health of the fluvial, riparian, estuarine or marine system and landscape health (such as modified discharge volumes, durations and velocities), aquatic connectivity, water-dependent fauna and flora and access to habitat for spawning and refuge; (b) impacts from any permanent and temporary interruption of groundwater flow, including the extent of drawdown, barriers to flows, implications for groundwater dependent surface flows, ecosystems and species, groundwater users and the potential for settlement; (c) changes to environmental water availability and flows, both regulated/licensed and unregulated/rules-based sources including the stormwater harvesting scheme implemented by North Sydney Council at the storage dam at Cammeray Golf Course; (d) direct or indirect increases in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses; (e) minimising the effects of proposed stormwater and wastewater management during construction and operation on natural hydrological attributes (such as volumes, flow rates, management methods and re-use options) and on the conveyance capacity of existing stormwater systems where discharges are proposed through such systems; and (f) measures to mitigate the impacts of the proposal and manage the disposal of produced and incidental water. 4. The assessment must provide details of the final landform of the sites to be excavated or modified (e.g. portals), including final void management and rehabilitation measures. 5. The Proponent must identify any requirements for baseline monitoring of hydrological attributes.	Controlled Activities on Waterfront Land (2012)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	6. The assessment must include details of proposed surface and groundwater monitoring. 7. The Proponent must identify design approaches to minimise or prevent drainage of alluvium in the paleochannels.	
10. Water - Quality The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine waters (if applicable).	1. The Proponent must: (a) describe the background conditions for any surface or groundwater resource likely to be affected by the development (b) state the ambient NSW Water Quality Objectives (NSW WQO) (as endorsed by the NSW Government [see www.environment.nsw.gov.au/ieo/index.htm]) and environmental values for the receiving waters (including groundwater where appropriate) relevant to the project and that represent the community's uses and values for those receiving waters, including the indicators and associated trigger values or criteria for the identified environmental values in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government; (c) identify and estimate the quality and quantity of all pollutants that may be introduced into the water cycle by source and discharge point and describe the nature and degree of impact that any discharge(s) may have on the receiving environment, including consideration of all pollutants that pose a risk of non-trivial harm to human health and the environment; (d) identify the rainfall event that the water quality protection measures will be designed to cope with; (e) assess the significance of any identified impacts including consideration of the relevant ambient water quality outcomes; (f) demonstrate how construction and operation of the project (including mitigating effects of proposed stormwater and wastewater management) will, to the extent that the project can influence, ensure that: – where the NSW WQOs for receiving waters are currently being met they will continue to be protected; and	NSW Water Quality and River Flow Objectives at http://www.environment.nsw.gov.au/ieo/ Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006) Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ ARMCANZ, 2000) Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DECC, 2008) Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	– where the NSW WQOs are not currently being met, activities will work toward their achievement over time; (g) justify, if required, why the WQOs cannot be maintained or achieved over time; (h) demonstrate that all practical measures to avoid or minimise water pollution and protect human health and the environment from harm are investigated and implemented; (i) identify sensitive receiving environments (which may include estuarine and marine waters downstream including Quarry Creek and its catchment) and develop a strategy to avoid or minimise impacts on these environments; and (j) identify proposed monitoring locations, monitoring frequency and indicators of surface and groundwater quality. 2. The assessment should consider the results of any current water quality studies, as available, in the project catchment.	
11. Flooding The project minimises adverse impacts on existing flooding characteristics. Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure.	1. The EIS must map the following features relevant to flooding as described in the *NSW Floodplain Development Manual 2005* (NSW Government, 2005) including: (a) Flood prone land; (b) Flood planning areas, the area below the flood planning level; and (c) Hydraulic categorisation (floodways and flood storage areas). 2. The Proponent must assess and (model where required), the impacts on flood behaviour during construction and operation for a full range of flood events up to the probable maximum flood (taking into account sea level rise and storm intensity due to climate change) including: (a) how the tunnel entries and cut-and-cover sections of the tunnels would be protected from flooding during construction works; (b) any detrimental increases in the potential flood affectation of the project infrastructure and other properties, assets and infrastructure; (c) consistency (or inconsistency) with applicable Council floodplain risk management plans; (d) compatibility with the flood hazard of the land;	NSW Government's Floodplain Development Manual (Department of Natural Resources, 2005) PS 07-003 New guideline and changes to section 117 direction and EP&A Regulation on flood prone land Practical Consideration of Climate Change - Flood risk management guideline (DECC, 2007)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	(e) compatibility with the hydraulic functions of flow conveyance in flood ways and storage areas of the land; (f) whether there will be adverse effect to beneficial inundation of the floodplain environment, on, or adjacent to or downstream of the site; (g) downstream velocity and scour potential; (h) impacts the development may have upon existing community emergency management arrangements for flooding. These matters must be discussed with the State Emergency Services and Council; (i) any impacts the development may have on the social and economic costs to the community as consequence of flooding; (j) whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses; and (k) any mitigation measures required to offset potential flood risks attributable to the project (these mitigation measures must be discussed with the State Emergency Services and Council where appropriate). 3. The assessment should take into consideration any flood studies undertaken by local government councils, as available. 4. The EIS must assess and model the effect of the proposed development (including fill) on current flood behaviour for the 1 in 200 and 1 in 500 year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.	
12. Soils The environmental values of land, including soils, subsoils and landforms, are protected. Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination.	1. The Proponent must verify the risk of acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Risk Map) within, and in the area likely to be impacted by, the project. 2. The Proponent must assess the impact of the project on acid sulfate soils (including impacts of acidic runoff offsite) in accordance with the current guidelines and detail the mitigation measures proposed to minimise potential impacts.	Acid Sulfate Soils Assessment Guidelines (DoP, 2008) Acid Sulfate Soils Manual (Acid Sulfate Soils Management Advisory Committee, 1998) Managing Land Contamination: Planning Guidelines SEPP 55 –Remediation of Land, (DUAP & EPA, 1998) Guidelines for Consultants Reporting on Contaminated Sites (OEH, reprinted 2011)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	3. The Proponent must assess whether the land and harbour sediment is likely to be contaminated and identify if remediation is required, having regard to the ecological and human health risks posed by the contamination in the context of past, existing and future land uses. Where assessment and/or remediation is required, the Proponent must document how the assessment and/or remediation would be undertaken in accordance with current guidelines. 4. Where contaminated spoil and/or sediments are to be handled at Glebe Island and/or White Bay, the Proponent must provide details of contamination characteristics and measures to manage this spoil to avoid adverse impacts to land and water quality; 5. The Proponent must assess whether salinity is likely to be an issue and if so, determine the presence, extent and severity of soil salinity within the project area. 6. The Proponent must assess the impacts of the project on soil salinity and how it may affect groundwater resources and hydrology. 7. The Proponent must assess the impacts on soil and land resources (including erosion risk or hazard). Particular attention must be given to soil erosion and sediment transport consistent with the practices and principles in the current guidelines. 8. The Proponent must assess the impact of any disturbance of contaminated groundwater and the tunnels should be designed so as to not exacerbate mobilisation of contaminated groundwater and/or prevent contaminated groundwater flow.	Guidelines for the NSW Site Auditor Scheme (DEC, 2006) Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (EPA, 2015) Urban and regional salinity – guidance given in the Local Government Salinity Initiative booklets (http://www.environment.nsw.gov.au/salinity/solutions/urban.htm) which includes *Site Investigations for Urban* Salinity (DLWC, 2002) Landslide risk management guidelines presented in Australian Geomechanics Society (2007) Soil and Landscape Issues in Environmental Impact Assessment (DLWC 2000) Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008) Other guidelines made or approved under section 105 of the *Contaminated Land Management Act 1997*
13. Heritage The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places.	1. The Proponent must identify and assess any direct and/or indirect impacts (including cumulative, vibration and visual impacts) to the heritage significance of listed (and nominated) heritage items inclusive of: (a) Aboriginal places and objects, as defined under the *National Parks and Wildlife Act 1974* and in accordance with the principles and methods of assessment identified in the current guidelines; (b) Aboriginal places of heritage significance, as defined in the Standard Instrument – Principal Local Environmental Plan;	Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) Aboriginal Cultural Heritage Consultation requirements for proponents (DECCW, 2010) Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.	(c) environmental heritage, as defined under the *Heritage Act 1977* (including potential items of heritage value, conservation areas, open space heritage landscapes, built heritage landscapes and archaeology); (d) items listed on the State, National and World Heritage lists (including Cockatoo Island); (e) heritage items and conservation areas identified in local and regional planning environmental instruments covering the project area; and (f) marine items of potential heritage significance within Sydney Harbour, such as any shipwrecks within proximity to the Balls Head Coal Loader wharf). 2. Where impacts to State or locally significant heritage items or archaeology are identified, the assessment must: (a) include a significance assessment and statement of heritage impact for all heritage items (including any unlisted places that are assessed of heritage value; (b) provide a discussion of alternative locations and design options that have been considered to reduce heritage impacts; (c) in areas identified as having potential archaeological significance, undertake a comprehensive archaeological assessment and management plan in line with Heritage Council guidelines which includes a methodology and research design to assess the impact of the works on the potential archaeological resource and to guide physical archaeological test excavations and include the results of these excavations. This is to be carried out by a suitably qualified archaeologist and is to discuss the likelihood of significant historical, maritime and Aboriginal archaeology on the site, how this may be impacted by the project, and includes measures to mitigate any impacts; (d) consider potential impacts to the Balls Head Coal Loader particularly associated with vibration and disturbance as part of the ongoing works. Due to the potential significance of this site, options to ensure that it is not impacted must be considered;	NSW Skeletal Remains: Guidelines for Management of Human Remains (Heritage Office, 1998) Aboriginal site recording form Aboriginal site impact recording form Aboriginal Heritage Information Management System site registration form Care agreement application form Criteria for the assessment of excavation directors (NSW Heritage Council, 2011) NSW Heritage Manual (Heritage Office and Department of Urban Affairs and Planning, 1994) Assessing Heritage Significance (NSW Heritage Office, 2001) The Australia ICOMOS Burra Charter

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	(e) consider impacts to the item of significance caused by, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, increased traffic, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment (as relevant); (f) provide a comparative analysis to inform the rarity and representative value of any heritage places proposed for demolition; (g) outline mitigation measures to avoid and minimise identified impacts in accordance with the current guidelines; and (h) be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria). 3. Where archaeological investigations of Aboriginal objects are proposed these must be conducted by a suitably qualified archaeologist, meeting the minimum qualification requirements specified in section 1.6 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010).	
14. Sustainability The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources. Conservation of natural resources is maximised.	1. The Proponent must assess the sustainability of the project in accordance with the Infrastructure Sustainability Council of Australia (ISCA) *Infrastructure Sustainability Rating Tool* and recommend an appropriate target rating for the project. 2. The Proponent must assess the project against the current guidelines including targets and strategies to improve Government efficiency in use of water, energy and transport.	NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013) Infrastructure Sustainability Rating Tool Scorecard relating to energy and carbon for large infrastructure projects, ISCA
15. Waste All wastes generated during the construction and operation of the project are effectively stored, handled, treated, reused, recycled and/or disposed of lawfully and in a manner that protects environmental values.	1. The Proponent must assess predicted waste generated from the project during construction and operation, including: a) classification of the waste in accordance with the current guidelines; b) estimates / details of the quantity of each classification of waste to be generated during the construction of the project, including bulk earthworks and spoil balance; c) handling of waste including measures to facilitate segregation and	EPA's Waste Classification Guidelines (as in force from time to time) NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)

Key Issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)	Current Guidelines
	prevent cross contamination; d) management of waste including estimated location and volume of stockpiles; e) waste minimisation and reuse; f) lawful disposal or recycling locations for each type of waste; and g) contingencies for the above, including managing unexpected waste volumes. 2. The Proponent must assess potential environmental impacts from the excavation, handling, storage on site and transport of the waste particularly with relation to sediment/leachate control, noise and dust.	Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008)
16. Climate Change Risk The project is designed, constructed and operated to be resilient to the future impacts of climate change.	1. The Proponent must assess the risk and vulnerability of the project to climate change in accordance with the current guidelines. 2. The Proponent must quantify specific climate change risks with reference to either the NSW Government's climate projections at 10 km resolution (or lesser resolution if 10 km projections are not available) or equivalent projection tool (such as the Climate Futures Tool from CSIRO and BoM (attenuated for project region)) and incorporate specific adaptation actions in the design.	Australian Government's Climate Change Impacts and Risk Management – A Guide for Business and Government (2006) AS/NZS 3100:2009 Risk Management – Principles and Guidelines Technical Guide for Climate Change Adaptation for the State Road Network (RMS, in draft)
17. Hazards	1. The Proponent must describe the process for assessing the risk of emissions from ventilation facilities on aircraft operations taking into consideration the requirements of the *Airports Act 1996* (Commonwealth) and the *Airport Regulations 1997*.	