

Transport for NSW

Beaches Link and Gore Hill Freeway Connection

Cover note

Information within this report regarding the proposed Port of Newcastle construction support site (BL15) has been superseded by an Addendum to the preferred infrastructure report lodged with the Department of Planning and Environment in June 2022. Please refer to Section 9 – Addendum – Treatment and loadout of dredged and excavated material not suitable for offshore disposal for further information



Transport for NSW

Beaches Link and Gore Hill Freeway Connection

Executive summary

November 2021



Executive summary

The Western Harbour Tunnel and Beaches Link program is a major transport infrastructure program that would make it easier, faster and safer to get around Sydney. As Sydney continues to grow, faster and more reliable trips are essential to reducing congestion and providing new levels of access to jobs, recreation, and services such as schools and hospitals. By creating a western bypass of the Sydney CBD, the Western Harbour Tunnel would take pressure off the Sydney Harbour Bridge, Sydney Harbour Tunnel and ANZAC Bridge; while Beaches Link would create an alternative to the Military Road and Warringah Road corridors to relieve traffic pressure on the North Shore.

The program has been designed as part of an integrated transport network, with a focus on new public transport connections and improved journey times and reliability for buses. It would also provide improvements to walking and cycling routes, providing more shared transport options.

Background

Transport for NSW is seeking approval under Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979* to construct and operate the Beaches Link and Gore Hill Freeway Connection project (the project).

The project is part of the Western Harbour Tunnel and Beaches Link program of works, which include:

- The project, which comprises a new tolled motorway tunnel connection across Middle Harbour from the Western Harbour Tunnel, the Warringah Freeway and Gore Hill Freeway to Balgowlah and Killarney Heights including surface upgrade of Wakehurst Parkway from Seaforth to Frenchs Forest and upgrade and integration works to connect to the Gore Hill Freeway at Artarmon
- The Western Harbour Tunnel and Warringah Freeway Upgrade project which comprises a new tolled motorway tunnel connection across Sydney Harbour, and an upgrade of the Warringah Freeway to integrate the new motorway infrastructure with the existing road network and to connect to the Beaches Link and Gore Hill Freeway Connection project.

A combined delivery of the Western Harbour Tunnel and Beaches Link program of works would unlock a range of benefits for freight, public transport and private vehicle users. It would support faster and more reliable travel times for journeys between the Northern Beaches and south, west and north-west of Sydney Harbour. For example, with the combined program of works, journeys from Dee Why to Sydney Kingsford Smith Airport are expected to be 56 minutes faster. Delivering the program of works would also improve the resilience of the motorway network, given that each project provides additional capacity and an alternative to heavily congested existing harbour crossings and their approaches.

The project would provide an opportunity to improve travel times on peak express bus services by re-directing bus services from the Northern Beaches through the new motorway to North Sydney, the north-west and the Sydney Central Business District (CBD). In addition, it would provide a fast, reliable link between the Northern Beaches and other key centres including St Leonards and Macquarie Park via the direct Gore Hill Freeway Connection.

It would also provide an opportunity to introduce new express bus services that would use the new motorway and road connections to deliver increased direct public transport access between strategic centres across the region, reducing reliance on private vehicle travel.

The development of new or improved active transport links is part of the project, including the provision of new or upgraded shared user paths in Artarmon, Balgowlah, Killarney Heights, Seaforth and Frenchs Forest, as well as a number of new shared user underpasses and new shared user and pedestrian bridges which would provide connectivity across the Wakehurst Parkway. These links would improve connectivity between communities, open space areas, public transport modes and the existing active transport network.

The project and the Western Harbour Tunnel and Warringah Freeway Upgrade project are subject to separate but coordinated environmental assessment and approval processes.

The Beaches Link and Gore Hill Freeway Connection project would comprise two components:

- Twin tolled motorway tunnels connecting the Warringah Freeway and the Western Harbour Tunnel at Cammeray and the Gore Hill Freeway at Artarmon to the Burnt Bridge Creek Deviation at Balgowlah and Wakehurst Parkway at Killarney Heights, and an upgrade of Wakehurst Parkway (the Beaches Link)
- Connection and integration works along the existing Gore Hill Freeway and surrounding roads at Artarmon (the Gore Hill Freeway Connection).

The project is part of a complementary integrated multi-modal strategy being implemented by the NSW Government to enable and accommodate future growth. The project would address urban congestion on Sydney's road network. It would take pressure off Spit Bridge and Military Road – improving amenity in Mosman, Cremorne and Neutral Bay and relieving traffic flows on the Warringah Road, Roseville and on Eastern Valley Way through the suburbs of Willoughby and Northbridge. It would provide direct access from the Northern Beaches to the Warringah Freeway for fast and reliable access to North Sydney, the Sydney CBD and beyond. It would also provide a fast, reliable link between the Northern Beaches and other key centres including St Leonards and Macquarie Park via the direct Gore Hill Freeway connection. For public transport it will relieve congestion on surface roads for existing and new routes and would provide opportunity for express buses to use the Beaches Link tunnel, additional express bus services plus improved local bus services along Military Road, and improved connections to the Sydney Trains and new Sydney Metro rail networks. For freight and heavy vehicle movements, it will provide a more direct and safer access to and from the Northern Beaches via the new tunnel. This would deliver greater efficiencies for business when accessing the Northern Beaches area.

Transport for NSW has requested that the Minister for Planning and Public Spaces declare the project as critical State significant infrastructure. Section 5.13 of the *Environmental Planning and Assessment Act 1979* provides for the declaration of critical State significant infrastructure by means of an environmental planning instrument. Clause 1 and clause 14 of *State Environmental Planning Policy (State and Regional Development) 2011* declares development listed in Schedule 3 to be State significant infrastructure. Transport for NSW's request is that the Beaches Link and Gore Hill Freeway Connection project be listed in Schedule 5.

Environmental Impact Statement

An environmental impact statement was prepared for the project in accordance with the provisions of Division 5.2 of the *Environmental Planning and Assessment Act 1979*. The environmental impact statement addresses the environmental assessment requirements issued by the Secretary of the NSW Department of Planning, Industry and Environment on 15 December 2017 and reissued on 22 April 2020, and the relevant provisions of Schedule 2 of the Environmental Planning and Assessment Regulation 2000. A copy of the Secretary's environmental assessment requirements, and where they are addressed in the environmental impact statement, are provided in Appendix A (Secretary's environmental assessment requirements checklist).

In accordance with Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979*, the environmental impact statement presents an assessment of all potential environmental issues identified during the planning and assessment of the project. The assessment considers the areas directly or indirectly affected by construction and operation of the project. Prior to it being finalised and placed on public exhibition, the environmental impact statement, including detailed technical studies, was reviewed by the Department of Planning, Industry and Environment and its independent technical reviewers as well as key NSW Government Agencies, to confirm that it addressed the Secretary's environmental assessment requirements.

The environmental impact statement was placed on public exhibition on 9 December 2020, with an exhibition closing date of 1 March 2021. This equated to a total exhibition period of 61 days, noting that the period between 20 December 2020 and 10 January 2021 (inclusive) was not included within the 61 days as part of the official exhibition period. Public exhibition of the environmental impact statement provided the community, interested parties and other key stakeholders (including government agencies and councils) with an understanding of the project and the opportunity to comment on the environmental impact statement.

During this time, a range of engagement activities were carried out to continue the engagement with stakeholders and the community which had been carried out since 2017. A range of engagement activities were carried out with stakeholders and the community on information in the environmental impact statement, to encourage engagement in communications activities and to provide guidance on the submissions process.

The release of the environmental impact statement coincided with the global COVID-19 pandemic and its associated restrictions, which presented a unique set of challenges for any face-to-face engagement. As such, the engagement strategy was adapted to focus predominately on digital engagement tools such as the online publication of the environmental impact statement and community guide, interactive portal featuring an interactive map and virtual information room, virtual information sessions, and targeted virtual street meetings and stakeholder briefings.

Submissions on the project were received by the Department of Planning, Industry and Environment during the exhibition period and were provided to Transport for NSW following close of the exhibition period. The Secretary of the Department of Planning, Industry and Environment then requested Transport for NSW to respond to the issues raised in the submissions.

The Department of Planning, Industry and Environment also requested Transport for NSW to prepare this preferred infrastructure report, separate and in addition to the submissions report, providing further assessment and information on some key issues.

Submissions report

As stated above, a separate submissions report has been prepared by Transport for NSW to address issues raised by community and agency stakeholders in submissions to the environmental impact statement, in accordance with Section 5.17(6)(a) of the *Environmental Planning and Assessment Act 1979.* The submissions report includes a summary of submissions received, clarifications, responses to issues raised and a revised list of environmental management measures for the project.

Purpose of this preferred infrastructure report

This preferred infrastructure report has been prepared for the Beaches Link and Gore Hill Freeway Connection project to provide further information, and provide further assessment of environmental and social impacts of the project as requested by the Department of Planning, Industry and Environment on 14 May 2021, in accordance with Section 5.17(6)(b) of the *Environmental Planning and Assessment Act 1979.*

This preferred infrastructure report includes:

- Further information on previous assessments of alternative locations, social and environmental impacts considered during site selection of the Flat Rock Drive construction support site (BL2)
- Assessment of the reconfiguration of Spit West Reserve construction support site (BL9) and further assessment of impacts to recreational users of the area
- Further assessment of water quality impacts to Middle Harbour from the sill associated with the immersed tube tunnels at the Middle Harbour crossing
- Assessment of the proposed location for the temporary onshore loadout facility for dredged and excavated material not suitable for offshore disposal
- Further assessment of potential impacts to local road intersections as a result of traffic changes during project operation.

Flat Rock Drive construction support site (BL2) options analysis

The Flat Rock Drive construction support site (BL2) options analysis is included in Section 2 of this preferred infrastructure report and considers engagement activities and feedback received from the community and the feasibility of relocating the Flat Rock Baseball Diamond if the site were to be used as a temporary construction support site. A comparative analysis of the two proposed options which were shortlisted as a result of stakeholder consultation between 2017 and 2020 is presented and includes:

- Option A on the Flat Rock Baseball Diamond located on the western side of Flat Rock Drive
- Option B within part of Flat Rock Reserve on the eastern side of Flat Rock Drive.

Community consultation carried out by Transport in NSW in 2018 was carried out for both Option A (Flat Rock Baseball Diamond) and Option B (Flat Rock Reserve) and fed into the selection of the temporary construction support site. The environmental impact statement included and assessed Option B (Flat Rock Reserve) as the Flat Rock Drive construction support site (BL2). During the public exhibition of the environmental impact statement submissions were received from the community indicating objections or queries relating to the Flat Rock Drive construction support site (BL2).

As Flat Rock Drive construction support site (BL2) is necessary and critical to the project, Transport for NSW have prepared a comparative assessment of Option A and Option B being the proposed location of the temporary construction support site and documented the investigations carried out in 2018 to consider the feasibility of relocating the Flat Rock Baseball Diamond users to enable the project to temporarily use the baseball diamond during construction. Existing baseball diamonds within 20 kilometres of the Flat Rock Baseball Diamond, and the viability of existing parks or open spaces to cater for a new baseball diamond were examined. It was found that due to the existing high demand for community use at Flat Rock Baseball Diamond and a lack of capacity at other baseball diamonds to accommodate the volume of club members and existing users, the relocation to an existing facility is not feasible. The additional distance, travel time and need to share facilities at other baseball diamonds, as well as competing schedules with other clubs and sports would limit access and inconvenience community users of the Flat Rock Baseball Diamond. The provision of a new baseball facility at an existing reserve or open space was also assessed to be not feasible as this would displace existing community users and current uses.

Both Option A and Option B would have impacts on the community. The use of Option B as a construction support site would affect community and recreational activities such as bushcare, walking and cycling. Option A would remove the use of Flat Rock Baseball Diamond for a period of about 64 months, with temporary relocation of the baseball diamond not being feasible due to the

limited availability of sporting infrastructure within the area and the current levels of demand. Option A would be in closer proximity than Option B to other recreational users of Willoughby Leisure Centre and Bicentennial Reserve. Option B avoids direct impacts to existing recreational facilities that are in high demand for community use. Option B would experience reduced cumulative impacts during concurrent construction works with the alterations and additions to the existing pool hall of Willoughby Leisure Centre compared to Option A. Additionally, Option A would be located in closer proximity to existing contamination, with the site being located directly on top of the former landfill site which would result in a greater human health risk associated with the potential release of landfill gases compared to Option B. Option A impacts would continue 3-4 months longer than Option B.

Given the assessment carried out during the design development in 2018 and additional assessment documented in this preferred infrastructure report in response to community and stakeholder feedback, Option B continues to be the preferred option for the Flat Rock Drive construction support site (BL2). Following construction, Flat Rock Drive construction support site (BL2) will be rehabilitated in line with the land use zoning with vegetation and landscaping determined in consultation with Willoughby City Council and the community and will be implemented as soon as practicable with complementary social impact offsets (as required by new environmental management measure LP8 and SE6, refer to Appendix C of this preferred infrastructure report).

Spit West Reserve construction support site (BL9) reconfiguration

Based on feedback received during consultation with Mosman Council following exhibition of the environmental impact statement, the proposed Spit West Reserve construction support site (BL9) configuration as presented in the environmental impact statement would prevent access for some recreational groups who are currently using Spit West Reserve for activities including soccer, netball, cricket, running and school sports. As there is no feasible alternative location for the temporary construction support site, Spit West Reserve construction support site (BL9) has been reconfigured in consultation with Mosman Council to accommodate concurrent recreational use of Spit West Reserve during construction of the project. The reconfiguration is discussed in Section 3 of this preferred infrastructure report and would reduce impacts to recreational and public users of the Spit West Reserve by maintaining access to currently available facilities, such as playing fields for soccer, netball, cricket, running and school sports which are now facilitated south of the construction site boundary.

Further assessment has been carried out for key environmental issues including:

- Traffic and transport The reconfigured temporary construction support site would be located further to the north within the grassed area of Spit West Reserve. However, there would be no change in construction vehicle volumes and access routes and no loss of parking within the existing carpark. Pedestrian access to the viewing platform along Figtree Lane would remain open, and the temporary shared user path diversion around the Spit West Reserve construction support site (BL9) would be shortened by 30 metres. The reconfigured site would increase the distance between the marine component of the temporary construction support site and Mosman Rowing Club, thereby reducing any potential effects of boat wash on rowers either accessing or egressing the Mosman Rowing Club jetty south of the marine traffic control zone
- Noise and vibration The scope of activities to be carried out and the hours of construction would not change despite the reconfiguration of the temporary construction support site. As such the impacts associated with noise and vibration during construction would be consistent with the environmental impact statement. However, the reconfigured layout locates the site offices at the north of the site which will provide some acoustic shielding to d'Albora Marina and the playground within the Spit West Reserve
- Human health The reconfiguration of the site would maintain access to existing recreational areas for local sporting clubs south of the Spit West Reserve construction support site (BL9),

which would further minimise potential impacts to users compared to what was assessed in the environmental impact statement. Water based activities near the temporary construction support site would continue to require environmental management measures to be implemented to minimise disruption

- Non-Aboriginal heritage The proposed reconfiguration of the Spit West Reserve construction support site (BL9) would move the water-based works around 6.5 metres to the north. The piling arrangement has been adjusted to avoid any direct impact to maritime heritage item Pearl Bay Unidentified No.1 Shipwreck and side scan anomaly 18W-002. There would be no direct impact on these two maritime heritage items which is consistent with the findings in the environmental impact statement
- Biodiversity Due to the reconfiguration of the temporary construction support site, one
 additional *Ficus macrophylla* would be removed. Where mature amenity trees are removed as a
 result of construction, they will be replaced at a ratio of 2:1 as required by revised environmental
 management measure V13 (refer to Appendix C of this preferred infrastructure report). The
 reconfigured Spit West Reserve construction support site (BL9) would be located about 18
 metres further to the west and away from seagrass and the subtidal rocky reef identified along
 the shoreline, compared to the site as proposed in the environmental impact statement
- Land use and property The reconfigured site would impact on 600 square metres less than the site proposed in the environmental impact statement, with a different portion of Spit West Reserve to be leased from Mosman Council. Impacts would remain consistent with those described in the environmental impact statement
- Socio economics The reconfigured site would be closer to amenities and the playground within Spit West Reserve. The amenity of Spit West Reserve would still be diminished during construction and may detract from the enjoyment of people visiting accessible parts of the reserve or nearby facilities. However, the reconfiguration of Spit West Reserve temporary construction support site (BL9) allows for the continued use of facilities at the reserve by Manly Warringah Football Association, Mosman Netball Club, Mosman Junior Cricket Club, Beauty Point Public School and Mosman Parkrun, thereby minimising impacts to these users
- Urban design and visual amenity Impacts would remain consistent with those described in the environmental impact statement. The removal of an additional tree during construction would not materially alter the potential impacts to surrounding receivers nor would the location of the reconfigured site further north in closer proximity to the viewing platform along Figtree Lane, amenities and the playground within Spit West Reserve.

Overall, the reconfigured Spit West Reserve construction support site (BL9) would not result in significant changes or impacts that differ from what has been assessed in the environmental impact statement, and the reconfiguration would provide more available recreational spaces for community use compared to the previous site layout. A new environmental management measure SE5 (refer to Appendix C of this preferred infrastructure report) has been developed to ensure consultation with users of the Spit West Reserve is carried out prior to and during construction. Other potential impacts will be managed by environmental management measures outlined in Appendix C of this preferred infrastructure report.

Assessment of potential effects of the immersed tube tunnel sill

In response to issues raised by the Department of Planning, Industry and the Environment as well as Northern Beaches Council, water quality modelling and further assessment of potential effects of the sill created by the construction of the immersed tube tunnels has been carried out. The modelling and further assessment was carried out to confirm the findings in the environmental impact statement regarding potential changes to dissolved oxygen and other water quality parameters that could occur upstream and downstream of the immersed tube tunnels due to reduced tidal flushing and mixing and to update the findings of the marine ecology impact

assessment where required. Modelling results of additional water quality assessment and further consideration of the potential impacts to marine ecology are discussed in Section 4 of this preferred infrastructure report.

The results of the water quality modelling in Middle Harbour upstream and downstream of the immersed tube tunnels included the following:

- For all of the modelled scenarios, the immersed tube tunnel sill would only reduce the near bed dissolved oxygen concentration by up to 0.4 mg/L for short periods after heavy rainfall
- The area affected by the lower dissolved oxygen is limited to the deeper parts (depth greater than 10 metres) of the waterway, below any identified sensitive habitats. Modelling indicates that at the peak of the low dissolved oxygen events the area upstream of the immersed tube tunnel where dissolved oxygen is predicted to change is less than one per cent of the tidal area, or 1.8 per cent of the area where the bed level is below 10 metres (Australian Height Datum (AHD)). The sensitive Type 1 or Type 2 Key Fish Habitat in the vicinity of the immersed tube tunnel, such as seagrass or rocky reef, are located in shallow water close to the shoreline of Middle Harbour and would be unaffected by the project
- The largest decreases in near bed dissolved oxygen are predicted to occur immediately upstream of the immersed tube tunnel sill in the middle of the channel
- Very minor changes to the near bed salinity and temperatures occur due to reduced mixing and flushing.

Benthic fauna in deeper areas of Middle Harbour in the vicinity of the immersed tube tunnel sill are already subject to low concentrations of dissolved oxygen on occasion. Under most scenarios, the immersed tube tunnel would only slightly decrease concentrations of dissolved oxygen near the bed of the harbour after heavy rain, and would not substantially increase the duration of the lower dissolved oxygen concentrations. The effects would be confined to an area of deeper water in the deep basin immediately upstream of the immersed tube tunnel sill and the overall significance of this impact is considered minor, and similar to naturally occurring impacts from occasionally low dissolved oxygen events. As such, the outcomes of the modelling and additional assessment for both upstream and downstream of the immersed tune tunnel sill remain consistent with the findings of the environmental impact statement.

As modelling has indicated that the near bed of the harbour dissolved oxygen levels is sensitive to the assumed high sediment oxygen demand, pre-construction monitoring of dissolved oxygen, temperature, turbidity and salinity will be carried out for a period of 12 months prior to construction in Middle Harbour in accordance with new environmental management measure WQ20 (refer to Appendix C of this preferred infrastructure report).

Treatment and loadout of dredged and excavated material not suitable for offshore disposal

Since the exhibition of the environmental impact statement a proposed loadout facility location has been identified at the Port of Newcastle and would be named Port of Newcastle construction support site (BL15). The Port of Newcastle construction support site (BL15) would only be required for a period of around four weeks and is currently proposed to be located within the operational area of the Mayfield Concept Plan, which aligns with the general industrial nature of the area. Dredged and excavated materials not suitable for offshore disposal would be treated to make the material spadable (a consistency which allows the material to be spaded or shovelled) within self-propelled barges at Middle Harbour and then the material would be transported from Middle Harbour to Port of Newcastle construction support site (B15). The material would be unloaded from the barges directly into trucks at the Port of Newcastle construction support site (B15). The loaded trucks would then be covered for transport to a suitably licensed facility.

The potential impacts of the proposed loadout facility are expected to include the following:

- Traffic and transport The assessment of existing road traffic data indicates there is sufficient capacity to accommodate the additional traffic generated by the Port of Newcastle construction support site (BL15). The Port of Newcastle construction support site (BL15) is expected to receive about 15 maritime vessels (30 maritime movements) during the four week project dredging program for material not suitable for offshore disposal and this is expected to be within the capacity of the Port of Newcastle, which caters for up to 4000 ships per annum (AECOM, 2010)
- Noise and vibration An additional excavator and barge would be required at the Middle Harbour crossing for a four week period during the dredging and excavation of material not suitable for offshore disposal to make the material spadable within the barge. Subsequently, minor adjustments are required to the assessment presented in the environmental impact statement. The updated assessment has shown that there is an increase in the number of potentially noise affected residential receivers (ie greater than the noise management level) during these works, however these receivers remain either potentially impacted by construction noise levels that may be either moderately intrusive (11 to 20 dB(A) above the noise management level) or clearly audible (10 dB(A) or less above the noise management level).

The proposed Port of Newcastle construction support site (BL15) is located in an area where the noise environment is dominated by industrial, transport and port related operations. The assessment of potential noise impacts predicts that the noise generated at the temporary construction support site would be substantially lower than the noise limits for the nearby noise generating activities, and would not exceed day time noise limits at nearby receivers. Additional traffic generated from vehicle movement to and from the temporary construction support site would travel on arterial roads via Selwyn Street and Industrial Drive, Mayfield East. It has been assessed that the addition of 90 heavy vehicle movements per day for a period of four weeks is not substantial compared to existing traffic volume and traffic noise. Noise impacts from maritime traffic are also considered unlikely due to the relative low volume of maritime traffic required for the project compared to the existing operations at the Port of Newcastle

- Air quality Modelling results indicate that the maximum predicted odour concentrations would likely remain below the theoretical level of detection (ie 1 OU) at both Middle Harbour and Port of Newcastle construction support site (BL15) and would not impact on any sensitive receivers such as residential properties or Clive Park, Northbridge. Additionally, dust generation is not expected to occur at Middle Harbour or the sealed hardstand temporary construction support site and would not be generated during treatment or transport of dredged material
- Hydrodynamics and water quality Mixing of sediment would take place within the barge by
 means of an excavator located on an adjacent barge. Both barges would be located within the
 deep draft silt curtain enclosure at Middle Harbour. The proposed construction activities
 associated with the Port of Newcastle construction support site (BL15) would not result in any
 ground disturbance and would not result in an increase in impermeable surfaces or runoff
 generation. During the transport of material, no overflow would be permitted from transport
 barges and at Port of Newcastle construction support site (BL15) the material would be
 transferred into trucks for disposal at a licensed waste facility. It is not anticipated that any
 discharges of water would be required and potential water quality impacts are considered
 unlikely. As a precaution, a new environmental management measure WQ21 (refer to of this
 preferred infrastructure report) will require barges at Port of Newcastle construction Appendix C
 support site to be surrounded by two to three metre deep silt curtains during loadout activities.

Potential impacts as a result of the Port of Newcastle construction support site (BL9) for human health, non-Aboriginal heritage, Aboriginal heritage, flooding, biodiversity, land use and property, socio economics, urban design and visual amenity, hazard and risks, resource use and waste

management, sustainability, climate change risk and greenhouse gas and cumulative impacts are considered to be minor.

Apart from new environmental management measure WQ21 (refer to Appendix C of this preferred infrastructure report), the environmental management measures presented in Appendix C of this preferred infrastructure report would be sufficient to manage the other impacts identified above.

Assessment of road intersection operational performance

The environmental impact statement indicates that some intersections in the vicinity of the project's surface connections would experience localised delays during operation. However, it also identifies that the substantial broader network benefits of the project would offset localised delays for the majority of road users. Additional review and assessment of the environmental impact statement operational traffic models has been carried out, including additional modelling (where considered necessary) to further refine the operational models, to provide further clarity on the modelling outcomes, including any potential localised intersection performance benefits or residual impacts as a result of the project. Findings are discussed in Section 6 of this preferred infrastructure report for each study area, consistent with the study areas and operational modelling scenarios considered in the environmental impact statement.

Key findings from the additional review and assessment include:

- Warringah Freeway and surrounds:
 - Consistent with the environmental impact statement results, the refined operational traffic modelling for the 'Do something' and 'Do something cumulative' scenarios in the morning and evening peaks generally result in an improvement to overall road network performance compared to the 'Do minimum' scenario with a reduction in the total number of stops, lower average trip times through the network and higher average trip speeds
 - Corridor travel times are also generally expected to be maintained or improved in the refined 'Do something' and 'Do something cumulative' scenarios when compared to 'Do minimum' scenarios
 - Generally, the refined operational traffic modelling indicates that the performance of intersections in focus would be maintained or improved when comparing the 'Do something' and 'Do something cumulative' scenarios to the 'Do minimum' scenario, and/or maintained at an acceptable level of service D or better, with a few exceptions where minor residual impacts to isolated intersection delay are reported
 - To address residual issues Transport for NSW would continue to investigate further opportunities to provide additional benefits or mitigate residual impacts within the Warringah Freeway and surrounds study through the Western Harbour Tunnel and Beaches Link program and/or other relevant processes, such as the North Sydney Integrated Transport Program. Given the context of this complex, constrained, urban area, additional mitigations would focus on multi-modal transport and demand management strategies to reduce private vehicle demand rather than seek to deliver further road capacity upgrades, consistent with the North Sydney Integrated Transport Program.
- Gore Hill Freeway and Artarmon:
 - Overall, additional intersection performance details (average delay) confirms that the project (and broader Western Harbour Tunnel and Beaches Link program of works) is not expected to adversely impact the performance of the Gore Hill Freeway and Artarmon area local road network (in particular Reserve Road), consistent with the findings of the environmental impact statement

- Balgowlah and surrounds:
 - Overall, additional intersection performance details (average delay) confirms that the project (and broader Western Harbour Tunnel and Beaches Link program of works) is not expected to adversely impact the performance of the Balgowlah and surrounds area local road network (in particular Sydney Road), consistent with the findings of the environmental impact statement
 - The intersection (roundabout) of Sydney Road/Frenchs Forest Road is an existing network pinch point which creates congestion and queuing and consequently has a material influence on broader network performance. Although the project is expected to relieve some demand at this intersection, existing congestion issues would not be fully mitigated by the project. Sensitivity testing indicates that if the capacity of this intersection was improved, the benefits of the project in the area would be further increased
 - Transport for NSW would continue to work with Northern Beaches Council through relevant forums and processes in developing solutions for local area traffic issues, such as congestion at the Sydney Road/Frenchs Forest Road intersection, which are beyond the scope of the project.
- Frenchs Forest and surrounds:
 - The refined operational traffic modelling for the 'Do something' and 'Do something cumulative' scenarios in the morning and evening indicate that all performance metrics (ie network performance, general traffic travel times, intersection performance and bus travel times) would result in comparable or improved performance compared to the 'Do minimum' scenario in both the morning and evening peaks (including Frenchs Forest Road and Warringah Road)
 - The refined operational modelling assumes that future bus service upgrades and other travel demand management strategies within the Frenchs Forest and surrounds study area (and beyond) would increase public transport demand and consequently maintain private vehicle demand at a level similar to conditions without the project (ie 'Do minimum'). This approach to transport network planning and management is consistent with ongoing strategic planning for the *Northern Beaches Hospital Precinct Structure Plan* (Northern Beaches Council, 2017)
 - Transport for NSW is continuing to investigate options to mitigate potential localised network performance issues in the area, and further leverage the overall benefits and opportunities of the project. This work is consistent with and reliant on the *Northern Beaches Hospital Precinct Structure Plan* (Northern Beaches Council, 2017), which highlights that future precinct development is dependent on further delivery of improved transport infrastructure and a continued modal shift from private to public transport.

Overall, consistent with findings presented in the environmental impact statement, additional modelling and analysis indicates that there would be no significant adverse effects to local roads across the study areas as a result of the project. In the Warringah Freeway and surrounds and Frenchs Forest and surrounds areas it is recommend that any potential localised residual impacts should be mitigated by complementary public transport and demand management initiatives. This is consistent with the approach currently proposed by relevant, separate projects and processes. Transport for NSW would continue to collaborate with relevant stakeholders through existing processes and forums (such as the North Sydney Integrated Transport Program and *Northern Beaches Hospital Structure Plan*) to implement public transport and demand management initiatives to mitigate any residual impacts and pinch points and improve movement and place outcomes.

Environmental management measures

A full list of the environmental management measures proposed for the project, including any additional measures, or changes to measures in response to the additional assessments carried out as part this preferred infrastructure report is provided in Appendix C.

Should the project be approved, detailed investigations, planning and surveys will be carried out by the appointed contractor/s. The design presented by contractor/s will need to satisfy all technical road design requirements and road functionality as described in the environmental impact statement, the preferred infrastructure report, and be consistent with the approved scope of the project, including the environmental management measures and conditions of approval issued for the project.

Ongoing consultation with community and stakeholders

Transport for NSW, as the proponent for the project, is committed to carrying out further engagement and consultation with communities and stakeholders about proposed changes to the project and opportunities to provide future input, prior to and during construction. Should the project be approved, certain aspects of the detailed design of the project would be made available to the public for feedback including the urban design and landscape plans.

Further, the construction environmental management plan and associated sub-plans would be prepared in consultation with relevant stakeholders as described in Section D1 (Construction environmental management framework) of the submissions report and as required by the conditions of approval.

The appointed contractor/s would also prepare a community communication strategy, outlining consultation with stakeholders and the community during construction. This strategy would include protocols for providing notifications and updates on construction activities and program, responding to enquiries and concerns in a timely manner and minimising potential impacts where possible.

These requirements for further consultation are captured in the environmental management measures proposed for the project.

Next steps

The Department of Planning, Industry and Environment will, on behalf of the NSW Minister for Planning and Public Spaces, review the environmental impact statement, the submissions report and this preferred infrastructure report for the project. Once the Department of Planning, Industry and Environment has completed its assessment, a draft Environmental Assessment Report will be prepared for the Secretary of the Department of Planning, Industry and Environment, which may include recommended conditions of approval.

The assessment report will be provided to the NSW Minister for Planning and Public Spaces, who will then make a determination on the project. If the determination is to approve the project, the determination is anticipated to include appropriate conditions of approval.

A copy of this preferred infrastructure report and the submissions report has been made publicly available on the Department of Planning, Industry and Environment Major Projects website (<u>www.planningportal.nsw.gov.au/major-projects</u>) and the project's interactive online portal (<u>nswroads.work/blportal</u>). The NSW Minister for Planning and Public Spaces determination, including any conditions of approval and the Secretary's Environmental Assessment Report, will be published on the Department of Planning, Industry and Environment Major Projects website following determination.