Australian Government

BUILDING OUR FUTURE

NSW GOVERNMENT

M1 Pacific Motorway extension to Raymond Terrace

Environmental impact statement – Executive summary

Transport for NSW | July 2021

BLANK PAGE

Executive summary

Transport for NSW (Transport) proposes to construct the M1 Pacific Motorway extension to Raymond Terrace (the project). Approval is sought under Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and Part 9, Division 1 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This environmental impact statement (EIS) has been prepared to describe the project, provide an assessment of all potential environmental and community impacts that could occur as a result of its construction and operation, and identify measures that would be implemented to avoid and minimise those impacts.

What is proposed?

The project would connect the existing M1 Pacific Motorway at Black Hill and the Pacific Highway at Raymond Terrace within the City of Newcastle and Port Stephens Council local government areas (LGAs). The project would provide regional benefits and substantial productivity benefits on a national scale.

The project would include the following key features (refer to **Figure E-1**):

- A 15 kilometre motorway comprised of a four lane divided road (two lanes in each direction)
- Motorway access to/from the existing road network via four new interchanges at:
  - Black Hill: connection to the M1 Pacific Motorway
  - Tarro: connection and upgrade (six lanes) to the New England Highway between John Renshaw Drive and the existing Tarro interchange at Anderson Drive
  - Tomago: connection to the Pacific Highway and Old Punt Road
  - Raymond Terrace: connection to the Pacific Highway.
- A 2.6 kilometre viaduct over the Hunter River and floodplain, the Main North Rail Line, and the New England Highway
- Bridge structures over local waterways at Tarro and Raymond Terrace, and an overpass for Masonite Road in Heatherbrae
- Connections and modifications to the adjoining local road network
- Traffic management facilities and features
- Roadside furniture including safety barriers, signage, fauna fencing and crossings, and street lighting
- Adjustment of waterways, including at Purgatory Creek at Tarro and a tributary of Viney Creek
- Environmental management measures including surface water quality control measures
- Adjustment, protection and/or relocation of existing utilities
- Walking and cycling considerations, allowing for existing and proposed cycleway route access
- Permanent and temporary property adjustments and property access refinements
- Construction activities, including establishment and use of temporary ancillary facilities, temporary access tracks, haul roads, batching plants, temporary wharves, soil treatment and environmental controls.

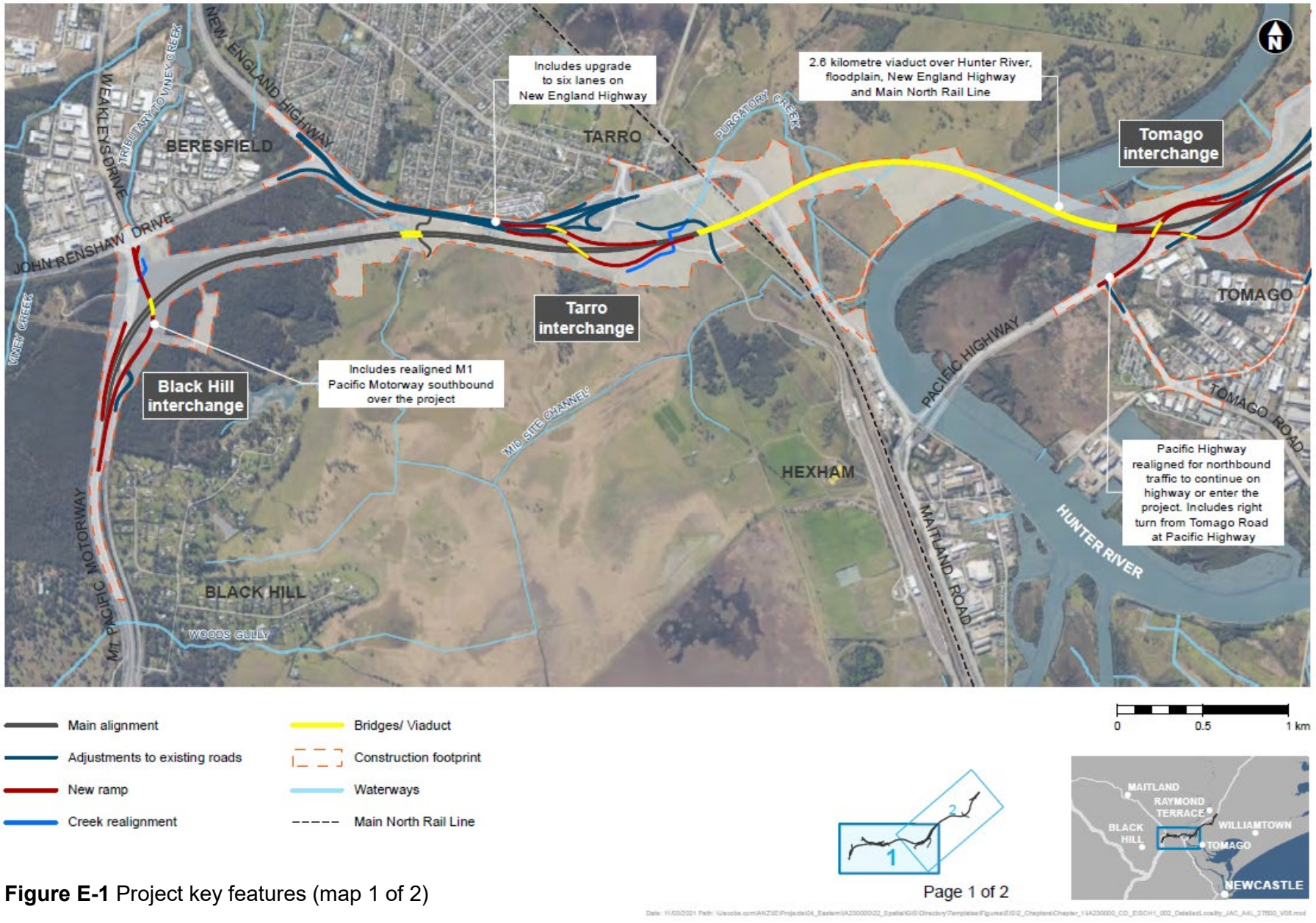


Figure E-1 Project key features (map 1 of 2)

Page 1 of 2

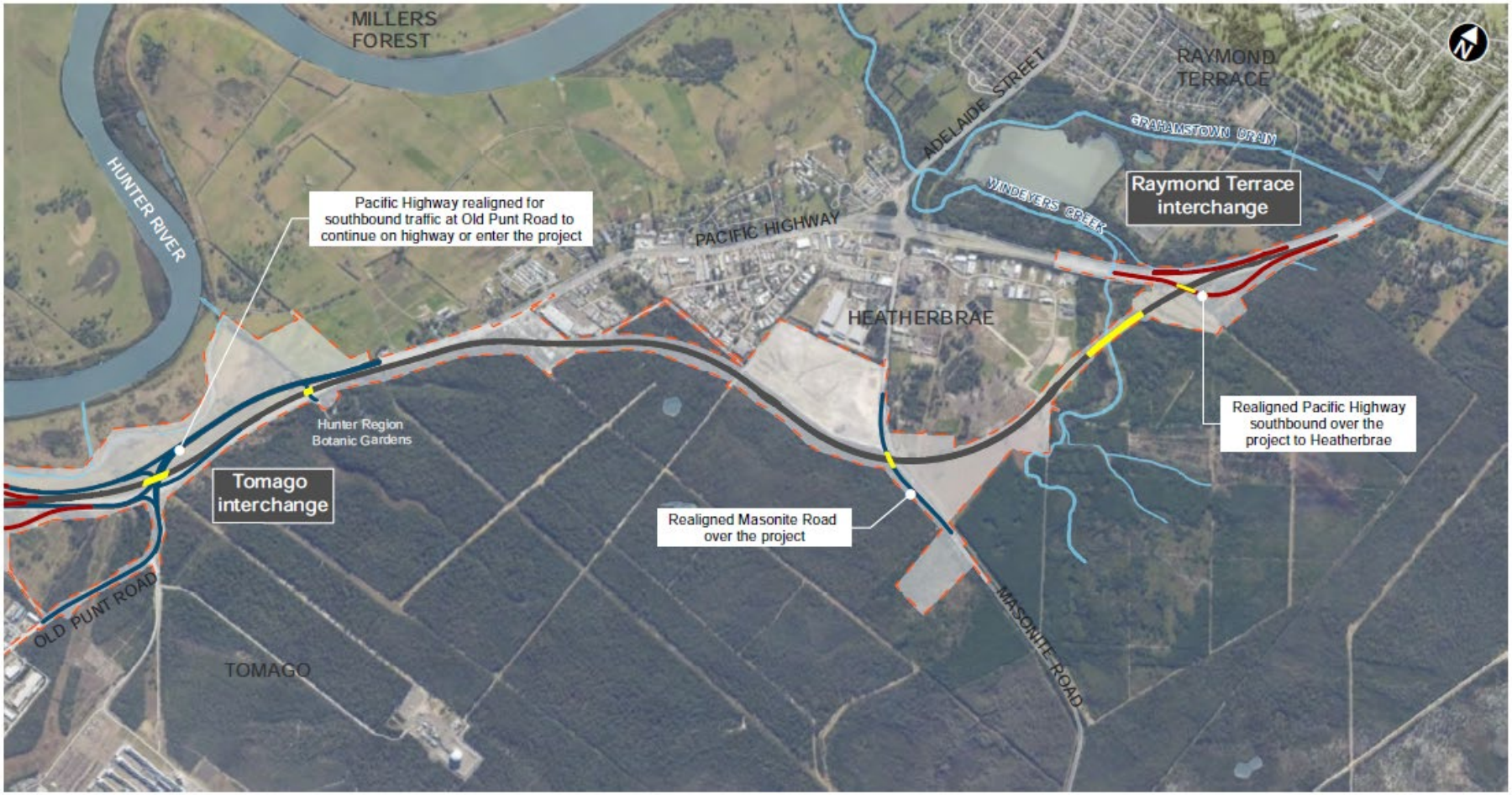


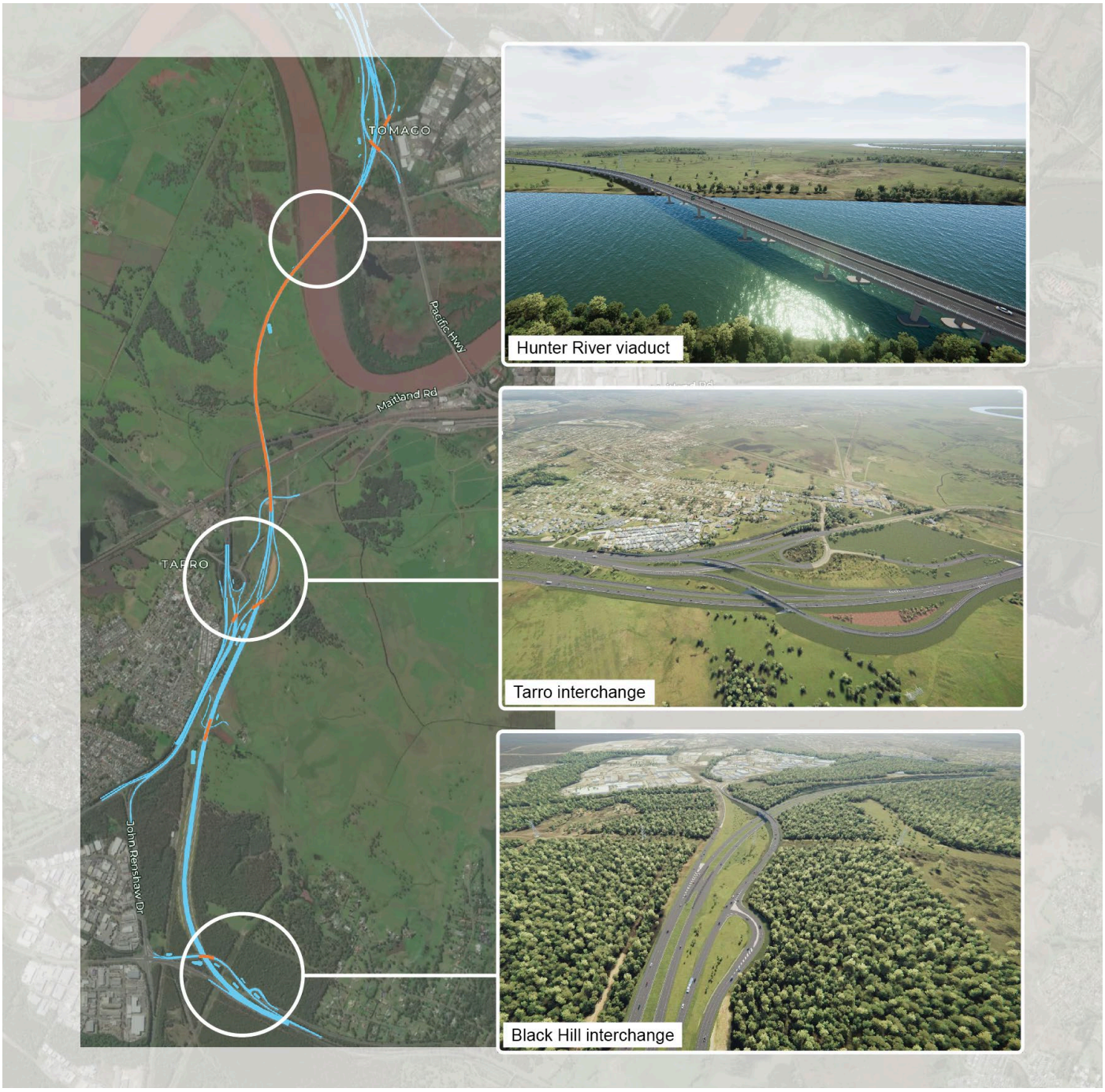
Figure E-2 Project key features (map 2 of 2)

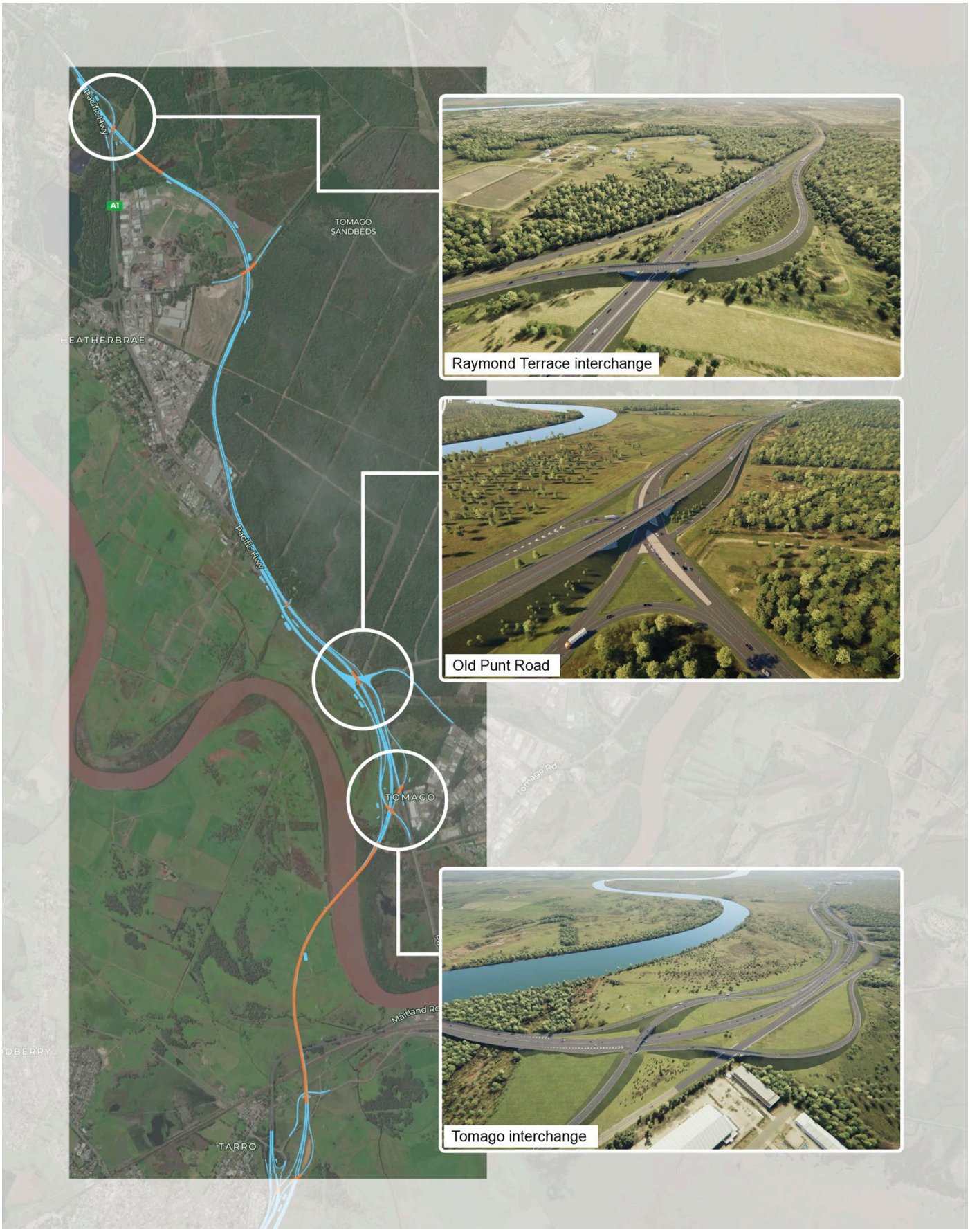
Page 2 of 2

What are the project objectives?

Transport is targeting achievement of the following project objectives:

- Improve travel time and road network efficiency for freight and commuters on the National Land Transport Network (NLTN) at the key strategic junction of the M1 Pacific Motorway, the New England Highway and Pacific Highway
- Provide improved long term route reliability along the M1 Pacific Motorway corridor, particularly in relation to congestion reduction, flood immunity and high demand holiday peak travel
- Improve road safety for all road users
- Provide more efficient access to facilitate economic growth for the Lower Hunter and key regional employment areas such as the Port of Newcastle, Newcastle Airport, Tomago, Beresfield and Black Hill.




Pacific Hwy
A1
TOMAGO SANDBEDS
HEATHERBRAE
Pacific Hwy
TOMAGO
Tomago Rd
Maitland Rd
TARRO
Raymond Terrace interchange
Old Punt Road
Tomago interchange

Why is the project needed?

The NLTN is a network of nationally important road and rail infrastructure links. Within the project area the NLTN facilitates substantial interstate freight movements between NSW, Victoria and Queensland, and particularly freight movements between Sydney, the Hunter region, northern NSW and Queensland.

There is currently no direct motorway connection between Black Hill and Raymond Terrace. The north-south corridor at this location currently travels along lower standard routes, including John Renshaw Drive, the New England Highway and the Pacific Highway. The existing NLTN, linking the M1 Pacific Motorway at Black Hill with the Pacific Highway at Raymond Terrace, is in one of the most highly-trafficked areas of the road network in the region and is more heavily congested than nearby high standard sections of the M1 Pacific Motorway and Pacific Highway corridors.

Following the completion of NorthConnex and the duplication of the Pacific Highway in 2020, Coffs Harbour Bypass and the project are the two remaining major upgrades required to complete a free flowing dual carriageway NLTN route along the east coast.

Additionally, this area of the road network is a key strategic junction as it is located centrally within the Hunter Region, serving commuting traffic from Newcastle, Maitland, Port Stephens and Cessnock to access key locations of employment and education, such as the Port of Newcastle and University of Newcastle.

Key issues along the existing road network include:

- High commuter and freight traffic volumes on the New England and Pacific Highways, the M1 Pacific Motorway and John Renshaw Drive
- Major delays caused by multiple (five) signalised intersections, a roundabout, several merge/diverge locations and speed limits ranging from 60km/h to 90km/h
- Road safety
- Restrictions on heavy vehicle movements, notably for southbound traffic on the existing Hexham Bridge over the Hunter River (caused by weight and height restrictions)
- Accessibility for freight to major nearby existing and future employment areas
- Flood immunity of existing road corridors.

Growth is continuing to occur throughout the Hunter Region and the existing constraints to the road network would continue and deteriorate in the future without improved infrastructure.

How would the project satisfy this need?

The project would provide an integrated response to the needs of the regional, state and national road network, and would improve traffic efficiency, route reliability, connectivity and road safety. The project would satisfy the needs of the road network by:

- Providing a motorway standard bypass of the existing congested road network, avoiding multiple (five) signalised intersections, a roundabout and several high traffic demand merge points
- Decreasing traffic demand on existing key routes across the road network. On project opening (2028), the project is expected to achieve the following:
  - About a 50 per cent reduction in traffic on the Pacific Highway south of Masonite Road during morning (AM) and evening (PM) peaks
  - About a 45 per cent reduction in traffic flows on the Pacific Highway east of the Hexham Bridge
  - About a 25 per cent reduction in traffic flows on the New England Highway west of the Hexham Bridge.

- Improving travel time. On project opening (2028), the project is expected to achieve the following:
  - About a nine minute saving for traffic travelling from the M1 Pacific Motorway at Black Hill to the Pacific Highway at Raymond Terrace in both the morning and evening peak periods
  - About a seven minute and a nine minute saving for traffic travelling from the Pacific Highway at Raymond Terrace to the M1 Pacific Motorway at Black Hill during the morning and evening peak periods respectively
  - About a five minute saving for traffic travelling between the Pacific Highway at Raymond Terrace and the New England Highway at Beresfield in both directions during the morning peak period
  - About a four minute saving for northbound traffic and about a seven minute saving for southbound traffic travelling between the Pacific Highway at Raymond Terrace and the New England Highway at Beresfield during the evening peak period.
- Providing significant improvement in flood immunity along the route with a minimum 5% annual exceedance probability (AEP) (1 in 20 year flood event) immunity between Black Hill and Raymond Terrace improving the reliability of the corridor
- Greatly improving the reliability of travel times during holiday peak periods, reducing delays on the existing congested network by avoiding existing signalised intersections and reducing congestion during high demand periods
- Improving road safety by providing a higher standard of road that would:
  - Reduce congestion on the New England Highway and the Pacific Highway, which is expected to reduce rear-end and lane-change crashes and improve conditions for pedestrians and cyclists
  - Reduce potential points of conflict between road vehicles on the network, minimising the risk of congestion-related incidents
  - Provide an improved road alignment, including wider lanes and shoulders with barriers, minimising the risk and impact of any off-road crashes.
- Offering an alternate route to the existing, constrained road network, bypassing the existing Hexham Bridge and enabling end to end access by higher productivity freight vehicles along the M1 Pacific Motorway corridor between Sydney and Brisbane.

What are the main benefits expected?

The main benefits of the project include:

- Improving travel time and road network efficiency for freight and commuters on the NLTN at the key strategic junction of the M1 Pacific Motorway, the New England Highway and Pacific Highway
- Bypassing a major constraint to freight movements along the NLTN (the existing Hexham Bridge)
- Providing improved, long-term route reliability along the M1 Pacific Motorway corridor, particularly in relation to reducing congestion, improving flood immunity and reducing congestion during high demand, holiday peak travel periods
- Improving road safety for all road users by providing a motorway standard bypass of the existing congested road network
- Improving conditions for pedestrians and cyclists by reducing traffic volumes along the existing road network
- Providing more efficient access to facilitate economic growth for the Lower Hunter and key regional employment areas such as the Port of Newcastle, Newcastle Airport, Tomago, Beresfield and Black Hill.

What alternatives were considered?

The project development process considered possible alternatives to the project that could achieve the project objectives and avoid or minimise adverse impacts to the environment.

Between 2004 and 2005, route option workshops identified 14 possible routes as alternative options. Two of these options were progressed as feasible route options and were split into three sections each which were placed on display for community comment in 2005. Following a value management workshop which evaluated engineering, environmental, social and economic matters, further route option investigations were carried out. After further refinement of the options, a route options workshop was held in 2006 which identified a preferred route for the project. This preferred route was placed on public display in August 2006. Following consideration of community and stakeholder feedback, the preferred route design was progressed into a concept design which was placed on public display in 2008. A submissions report responding to issues raised by the community was published in December 2010 and a road corridor was then reserved in the Newcastle and Port Stephens Council Local Environmental Plans (LEPs).

In 2014, a review of the 2010 Preferred Route design was carried out to identify and investigate potential improvements to the project. The majority of the alignment improvements considered were for the central section of the project, between Tarro and Heatherbrae, as this was the area of the project that provided the greatest scope for minimising environmental impact. The review also considered options to improve road network connectivity and accessibility and develop a more cost-effective project solution.

Following this review, alignment options were progressed for further investigation to address the issues raised and to better meet the project objectives. In April 2015, a value management workshop resulted in the selection of a preferred alignment, which was announced in October 2015.

The concept design was then revised in consideration of feedback received from the community and stakeholders, as well as the outcomes of field investigations carried out in 2015 and 2016. Further community consultation was carried out in 2016 to communicate changes to the design. Feedback and ongoing consultation with landowners, utility providers and key stakeholders has resulted in further investigation to produce the project design which highlighted some key changes at Tomago in a November 2020 Community Update and is included in this EIS.

Overall, the project development process has ensured that the project best meets the project objectives, has been evaluated against the functional, social and economic and natural environment and culture considerations identified for the project and ultimately provides value for money.

How did the community participate in selecting the preferred project?

An extensive consultation program has been carried out since project initiation in 2004, including community updates, media releases, public displays and community feedback sessions to support project development including the preferred route, concept design and environmental assessment.

Community consultation activities carried out during project development has included:

- 2004-2005: Project initiation – community notification and stakeholder meetings
- 2005: Public display of route options
- 2005-2010: Development and display of the 2010 Preferred Route design – including formalisation of the project corridor into Newcastle and Port Stephens LEPs
- 2014-2015:
  - Public display of the revised concept design in October 2015
  - Publication of the State significant infrastructure application on the Department of Planning website
  - Aboriginal heritage focus groups
  - Consultation with business owners
  - Flood focus group meeting.

- 2016-2017:
  - Public display of concept design changes in August 2016
  - Aboriginal heritage focus groups.
- 2018-present:
  - Engagement with property owners and major stakeholders for the environmental assessment
  - Aboriginal heritage focus groups
  - Community update, published in November 2020, describing changes to the project design.

Community consultation has been extensive and has driven many of the design revisions. Issues raised during consultation periods have been investigated and considered as part of the development of the concept design, including incorporating design elements to reduce potential environmental impacts.

Transport will continue to provide opportunities for the community to participate in the design process. Comments received in response to the EIS exhibition will be considered and the project would be refined as appropriate.

What are the expected key impacts?

The project has sought to avoid or minimise environmental and social impacts through evaluation of alternatives, development of route options and design refinements. However, given the project's size, setting and complexity, there would be impacts on the environment and community during construction and operation. Where impacts are expected, a range of environmental management measures have been developed to manage these impacts. The key impacts of the project, including measures to manage these impacts, are summarised below.

Biodiversity

The concept design was developed to avoid and minimise impacts on biodiversity. A key decision to realign the project was made in 2015 to minimise impacts to wetland areas on the Hunter River floodplain. Where possible, the project has been aligned with existing infrastructure, already-cleared land and along the edges of existing developed land, resulting in minimal impacts to vegetation connectivity. Notwithstanding, the following impacts have been identified:

- Removal of about 174 hectares of native vegetation, including 136 hectares of threatened ecological communities (TEC) listed under the *Threatened Species Conservation Act 1999* (TSC Act)
- Removal of 0.55 hectares of Subtropical and Temperate Coastal Saltmarsh TEC, listed under the EPBC Act
- Impacts to four threatened flora species, including *Diuris arenaria*, *Callistemon linearifolius*, *Eucalyptus parramattensis subsp. decadens* and *Persicaria elatior*, as well as the loss of fauna habitat features which are known to support locally occurring threatened fauna species
- Targeted and opportunistic surveys carried out in 2015, 2016 and 2019 did not identify any evidence of koalas or koala activity within the construction footprint, including within areas identified as potential koala habitat. While the project has avoided impacts to vegetation connectivity where feasible by following the edge of existing vegetation, particularly north of Tomago Road, around 51.12 hectares of vegetation types which contain koala feed tree species would be removed by the project at Tomago and Heatherbrae. With consideration of the broader Port Stephens koala population, the impact of potential koala habitat loss arising from the project is considered low. As the project is located close to existing roads and industrial areas, only minimal impacts on koala movements are expected. Given the position of the project, the findings from the background review, spatial review and field surveys, and the outcomes of the Assessment of Significance, the project is not expected to significantly impact on the Koala.

The assessment has identified all reasonable measures and strategies to avoid and minimise impacts to biodiversity associated with the project. Mitigation measures proposed include the provision of fauna

connectivity structures, fencing to prevent fauna accessing the motorway and revegetation of disturbed areas in accordance with relevant guidelines.

Residual impacts would be offset in accordance with the NSW Biodiversity Offsets Policy for Major Projects and the Framework for Biodiversity Assessment (FBA). Offsets for impacts to marine vegetation have been calculated in accordance with the Fisheries NSW policy and guidelines for saline wetlands vegetation formations. A Biodiversity Offset Strategy has been prepared that outlines how Transport intends to offset the residual impacts of the project.

Noise and vibration

The project is closely aligned to existing infrastructure, including road and rail. Accordingly, sensitive receivers at locations such as Black Hill, Tarro, Tomago and Heatherbrae, are subject to existing noise impacts from existing infrastructure. The project would realign some sections of the existing road network to be located further from some sensitive receivers, particularly around Tarro.

The following key noise and vibration impacts of the project have been identified:

- Construction: Highly intrusive noise impacts are predicted for up to 13 residential receivers closest to the construction work in Tarro during most construction periods when noise intensive plant and equipment are operating. Up to 24 residential receivers in total may be subject to construction noise levels above the Highly Noise Affected threshold (greater than 75 dB(A)). These receivers are all located directly north of the New England Highway in Tarro
- Operation: A total of 189 sensitive receiver buildings (out of 1671 receiver buildings assessed) were identified as being eligible for consideration for additional noise mitigation treatment. The final extent of treatment would be confirmed during detailed design and may include the implementation of quieter pavements, additional noise barriers and at-property mitigation treatment.

A Construction Noise and Vibration Management Plan would be prepared to manage noise and vibration impacts during project construction. The management plan would include consideration of different plant and equipment, scheduling of noise intensive equipment to less sensitive periods (i.e. standard construction hours), noise and vibration monitoring and building surveys.

Hydrology and flooding

To minimise the impacts of the project on hydrology and flooding, the project incorporates a 2.6 kilometre viaduct over the Hunter River floodplain (rather than an embankment), which includes new bridge crossings over the Hunter River and smaller waterways. However, the project would result in some changes to the existing hydrological and flooding characteristics.

The project would improve the trafficability of the road network for all road users, in comparison to the existing case. Modelling of the existing road network indicates that in the 10% AEP event, the New England Highway is cut off at Hexham, while the Pacific Highway is cut off at Hexham and Tomago. Beneficial outcomes from the project include provision of a new flood emergency and evacuation access route (the project itself) between Black Hill and Raymond Terrace with a minimum 5% AEP flood immunity.

Currently, flood depths on the Hunter River floodplain are typically two to 2.5 metres in the 5% AEP event. During construction, the project is expected to result in the following impacts:

- Generally, increases in flood level of between 0.02 and 0.1 metres in the 5% AEP event
- Nineteen lots, with no habitable buildings, have been identified as experiencing increased flood levels above criteria (0.1 metres)
- Five habitable buildings have been identified as experiencing an increase in flood levels of up to 0.08 metres, marginally exceeding the adopted criteria (0.05 metres).

Currently flood depths on the Hunter River floodplain are typically three to 4.5 metres in the 1% AEP event. During operation, the project is expected to result in the following impacts:

- Flood levels in the 1% AEP event generally increase by up to 0.07 metres in some localised areas near Tarro
- Ten lots, with no habitable buildings, have been identified as experiencing increased flood levels above criteria (0.1 metres)
- One habitable building has been identified as experiencing an increase in flood level of up to 0.06 metres, marginally exceeding the adopted criteria (0.05 metres).

The large majority of existing flood-affected residential, commercial and industrial properties would experience a negligible change in flood depth (defined as a 0.01 metre change), flood hazard (combination of depth and velocity) and time of inundation (defined as a change of up to three hours) during operation of the project.

Broadly, the project meets the criteria for flooding impacts and achieves the flood management objectives, which include impacts to afflux (increases in flood levels), flood hazard and flood duration. The assessment has generally targeted maximum afflux of 0.05 metres for impacts to habitable floor levels of buildings and sensitive infrastructure, and 0.1 metres for other land uses.

Prior to construction, environmental management measures would be implemented to manage hydrological impacts, including the preparation of a Flood Management Plan, detailed construction staging plans to minimise flood risk during construction and further refining temporary and permanent works.

Should changes in the detailed design require further flood assessment and continue to show flooding impacts to buildings, Transport would consult with landowners about appropriate management measures to be implemented in relation to each individual property impacted by the project.

Surface and groundwater quality

Generally, existing water quality in waterways and wetlands to which the project would discharge does not meet the nominated NSW water quality objectives (WQOs). Waterways and wetlands surrounding the project are typically high in nutrients and heavy metal concentrations and are representative of a catchment that has been impacted by urbanisation, industrial and commercial use, and land clearing.

During construction, the project is expected to have only minor to negligible impacts on existing water quality. To minimise impacts to surface water and groundwater quality during construction, water quality control measures, such as temporary sediment basins, have been incorporated into the design of the project.

During operation, the project is expected to either be compliant with the NSW WQO Default Guideline values, or be better than existing water quality of the receiving waterways, which would contribute towards achieving the values over time. To minimise impacts to the Tomago Sandbeds, the design includes lined water quality controls in this location to avoid infiltration of road runoff. The project has also been designed so runoff drains outside of the area of influence of the drinking water borefields.

Further, an assessment of the likely construction and operational water quality impacts at the Hunter Estuary Wetlands Ramsar site at Kooragang Island has confirmed the project is not likely to present any long-term risk to the health of the site. In most events, the NSW WQOs are met as the relatively small contribution of water from basin discharges would be diluted in the Hunter River.

A surface water and ground water monitoring program will be implemented as an environmental management measure to observe any changes in surface water and groundwater quality that may be attributable to the project and inform appropriate management responses.

Aboriginal heritage

Extensive engagement with the local Aboriginal community, including archaeological investigations, was carried out during project development and has improved the knowledge of Aboriginal cultural heritage in the locality of the project. The project would impact 26 Aboriginal sites across the construction footprint, comprising both whole and partial impacts. Management measures to control impacts to Aboriginal sites have been developed in consultation with the local Aboriginal community and include the collection of surface artefacts, salvage excavation, exclusion fencing, artefact analysis and long term management of collected artefacts.

Soils and contamination

Historical and existing contamination within and adjacent to the project footprint was identified through database and literature reviews, field investigations and laboratory analysis. The key soils and contamination impacts of the project are generally applicable to the construction phase, with no ongoing impacts expected during operation. The key issues identified are:

- Exposure of potential and actual acid sulfate soils, especially within the low lying floodplain areas next to the Hunter River and Windeyers Creek
- Erosion and sedimentation through vegetation removal and disturbance of the ground surface
- Disturbance of existing contamination, including four high risk areas of potential contamination identified within the construction footprint (these being asbestos waste at Tarro, the former mineral sands processing facility at Tomago, potentially contaminated Hunter River sediments and locations where construction works may disturb acid sulfate soils)
- Issues associated with naturally occurring radioactive material at the former mineral sands processing facility located in Tomago.

A range of environmental management measures are proposed to manage the impacts of the project on soils and contamination, including measures to control soil disturbance, including acid sulfate soils. To manage impacts at the former mineral sands processing facility, a remediation action plan will be developed in consultation with EPA and an independent site auditor prior to construction on the site.

How would the expected impacts be managed?

This EIS identifies a comprehensive range of environmental management measures to avoid, manage, mitigate, offset and/or monitor impacts during construction and operation of the project. These include construction and environmental management plans, noise mitigation measures, water quality controls (such as basins) and urban design and landscaping treatments. Further opportunities to minimise the environmental and social impacts of the project are likely to be identified during detailed design, construction planning and in consultation with the community and relevant stakeholders. The conditions of approval for the project may also identify additional management measures to be implemented by the project.

Why is an EIS required?

The project is declared to be critical State significant infrastructure (CSSI) under Section 5.13 of the EP&A Act as it is considered essential for the State for economic, environmental or social reasons.

In October 2015, a State Significant Infrastructure application was submitted to the former Department of Planning and Environment (DPE), now the Department of Planning, Industry and Environment (DPIE), for the project. In November 2015, the Secretary's Environmental Assessment Requirements (SEARs) for the project were issued (and re-issued in December 2017).

The SEARs were then revised on 20 March 2019 to reflect the Commonwealth decision that the project is a controlled action under the EPBC Act. This EIS has been prepared to address the specific matters raised in the revised SEARs.

Why is a referral to the Australian Government required?

Under the EPBC Act, proposed 'actions' that have the potential to significantly impact on matters of national environmental significance (MNES) or the environment of Commonwealth land, or are being carried out by a Commonwealth agency, must be referred to the Australian Government. If the Australian Minister for the Environment determines that a referred project is a 'controlled action', the approval of that Minister is required for the project, in addition to the approval from the NSW Minister for Planning and Public Spaces.

The project was referred to the former Commonwealth Department of the Environment (now the Department of Agriculture, Water and the Environment) and determined on 14 January 2019 to be a controlled action by the Australian Minister for the Environment (under Section 75 of the EPBC Act) due to its potential for significant impact on listed threatened species and communities (Sections 18 and 18A of the EPBC Act).

The NSW Government confirmed the action will be assessed under the "Bilateral agreement made under Section 45 of the EPBC Act relating to environmental assessment between Commonwealth of Australia and the State of New South Wales" (Bilateral Agreement) (2015). This agreement accredits the assessment process under Division 5.2 of the EP&A Act. If approved by the NSW Government, the Australian Minister for the Environment would then need to issue a separate approval for the project.

How can I comment on the EIS?

DPIE will make the EIS publicly available for a minimum period of 28 days in accordance with the Environmental Planning and Assessment Regulation (2000). During the public exhibition period, government agencies, project stakeholders and community members will be able to review the EIS and provide feedback via a written submission to DPIE for consideration in its assessment of the project.

Advertisements will be placed in newspapers to advise the community of the public exhibition and other relevant information. This will include locations where the EIS can be viewed and details of planned consultation activities and information sessions.

Electronic copies of the EIS will be made available for viewing and download from the DPIE website at **https://planningportal.nsw.gov.au/major-projects**.

A project information phone line will also be available throughout the exhibition period to answer questions from the community relating to the project – **1800 094 895** (toll free). Questions can also be sent by email to **M1RT@jacobs.com**

To provide feedback on the project a person may make a written submission to the Secretary of the DPIE during the exhibition period. All submissions received will be placed on the DPIE website. Submissions should be made to **https://www.planningportal.nsw.gov.au/major-projects/project/10471**.

Written submissions may also be directed to:

Attention: Director – Transport Assessments
Planning & Assessment, Department of Planning, Industry and Environment
Locked Bag 5022, Parramatta NSW 2124

If you post your submission, it needs to be received by DPIE before the close of the exhibition period and include the following:

- Your name and address, at the top of the cover letter only
- If you want DPIE to withhold your personal information before publication, make this clear at the top of your cover letter and do not include personal details in your attached submission
- The name of the application and the application number: **SSI-7319**
- Your submission as a separate attachment
- In your submission include a statement on whether you support or object to the proposal and the reasons why you support or object to the proposal
- A declaration of any reportable political donations made in the previous two years.