# APPENDICES

## CABRAMATTA LOOP PROJECT

ENVIRONMENTAL IMPACT STATEMENT

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# APPENDIX A

## SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

ENVIRONMENTAL IMPACT STATEMENT

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# A. ENVIRONMENTAL ASSESSMENT REQUIREMENTS

**Table A.1 General standard SEARs**

| Item | Requirement | Where addressed? |
|---|---|---|
| **1. Environmental Impact Assessment Process** | 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). | Certification page, Section 3.2.4 and Appendix B |
| | 2. It is the Proponent's responsibility to determine whether the project needs to be referred to the Commonwealth Department of the Environment for an approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). | No approval is required. Refer to Section 3.4 |
| | 3. The onus is on the Proponent to ensure legislative requirements relevant to the project are met. | The statutory context and approval pathway is provided in Chapter 3 |
| **2. Environmental Impact Statement** | 1. The EIS must include, but not necessarily be limited to, the following:<br>(a) **executive summary** | Executive Summary |
| | (b) a **description of the project**, including all components and activities (including ancillary components and activities) required to construct and operate it | Chapter 6 and Chapter 7 |
| | (c) a statement of the **objective**(s) of the project | Section 1.3 |
| | (d) a summary of the **strategic need** for the project with regard to its State significance and relevant State Government policy | Section 5.1 and 5.2 |
| | (e) an analysis of any feasible **alternatives** to the project | Section 5.3 |
| | (f) a description of feasible **options** within the project | |
| | (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 | Section 5.5 |
| | (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 | Section 2.2 |
| | (i) a demonstration of **how the project design has been developed to avoid or minimise likely adverse impacts** | Section 5.4 and Chapter 8 to 21 |
| | (j) the **identification and assessment of key issues** as provided in the 'Assessment of Key Issues' performance outcome | Chapters 8 to 21 |
| | (k) a statement of the **outcome**(s) the proponent will achieve **for each key issue** | Chapters 8 to 21 |
| | (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 | Section 22.3 |
| | (m) **consideration of the interactions between measures** proposed to avoid or minimise impact(s), between impacts themselves and between measures and impacts | Chapters 8 to 21 |

| Item | Requirement | Where addressed? |
|---|---|---|
| | (n) 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 construction, and projects that have recently been completed | Chapter 8 to 21 and Appendix E |
| | (o) **statutory context** of the project as a whole, including:<br>• how the project meets the provisions of the EP&A Act and EP&A Regulation | Section 3.2 |
| | • a list of approvals that must be obtained under other Acts or laws before the project may lawfully be carried out | Section 3.3 |
| | (p) a chapter that **synthesises** the environmental impact assessment and provides:<br>• a succinct but full description of the project for which approval is sought | Part C<br><br>Section 23.1 |
| | • a description of 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 | Section 22.5 |
| | • a compilation of the impacts of the project that have not been avoided | Section 22.1 |
| | • 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 | Section 22.3 |
| | • a compilation of the outcome(s) the proponent will achieve | Section 22.4 |
| | • 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 | Section 23.2 |
| | (q) **relevant project plans**, drawings, diagrams in an electronic format that enables integration with mapping and other technical software. | Throughout the EIS |
| | 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. | Throughout the EIS |
| **3. Assessment of key issues** | 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 | Chapters 8 to 21 |
| | 2. **For each key issue** the Proponent must:<br>(a) **describe the biophysical and socio-economic environment**, as far as it is relevant to that issue | A general description of the biophysical and socio-economic environment is provided in Sections 2.2. Further detail is provided in Chapters 8 to 21. |

| Item | Requirement | Where addressed? |
|---|---|---|
| | (b) describe the **legislative and policy context**, as far as it is relevant to the issue | Section 3.3 and Chapter 8 to 21 |
| | (c) identify, describe and quantify (if possible) the **impacts associated with the issue**, including the likelihood and consequence (including worst case scenario) of the impact (comprehensive risk assessment), and the cumulative impacts | Chapters 8 to 21 and Technical Reports 1 to 12 |
| | (d) demonstrate **how potential impacts have been avoided** (through design, or construction or operation methodologies); | An overview of how the design has been developed to minimise potential impacts is provided in Section 6.1.2. A description of how further impacts would be avoided during construction and operation are provided in Chapters 8 to 21. |
| | (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) | A description of how impacts would be further refined during detailed design to minimise potential impacts is provided in Chapters 8 to 21 |
| | (f) detail how **residual impacts** will be managed or offset, and the approach and effectiveness of these measures. | Chapter 8 to 21 |
| | 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. | Refer to the approach to mitigation and management in Chapters 8 to 21 |
| **4. Consultation** | 1. The project must be informed by consultation, including with relevant government agencies, infrastructure and service providers, special interest groups, affected landowners, businesses and the community. The consultation process must be undertaken in accordance with the current guidelines. | Chapter 4 |
| | 2. The Proponent must document the consultation process, and demonstrate how the project has responded to the inputs received. | Section 4.1, 4.2 and 4.3 |
| | 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. | Section 4.4 |

**Table A.2 Key issue requirements**

| Key issue | Requirement | Where addressed? |
|---|---|---|
| **1. Transport and Traffic** | 1. The Proponent must assess construction transport and traffic (vehicle, pedestrian and cyclists) impacts, including, but not necessarily limited to: | A summary of the results of the operation traffic, transport and access assessment is provided in Chapter 8. The full results are provided as Technical Report 1. |
| | (a) a considered approach to route identification and scheduling of transport movements, including haulage routes; | Section 7.6.1 |
| | (b) the number, frequency and size of construction related vehicles (passenger, commercial and heavy vehicles, including spoil management movements); | Section 7.6.3 |
| | (c) construction worker parking | Section 7.6.4 |
| | (d) changes to parking along Broomfield Street including identification of replacement options prior to displacement; | Section 7.6.5 |
| | (e) 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) | Section 8.2.4 |
| | (f) access constraints and impacts on public transport, pedestrians and cyclists: | Section 8.3.4, 8.3.6 and 8.3.7 |
| | (g) the need to close, divert or otherwise reconfigure elements of the road and cycle network associated with construction of the project, particularly the pedestrian and cycleway along Broomfield Street, across Cabramatta Creek and the Sussex Street underpass. | Sections 7.6.5, 8.3.4, 8.3.6 and 8.3.7 |
| | 2. The Proponent must assess (and model) the operational transport impacts of the project, including: | A summary of the results of the operation traffic, transport and access assessment is provided in Chapter 8. The full results are provided as Technical Report 1. |
| | (a) impact to parking along Broomfield Street and surrounding streets and the identification of replacement parking; | Section 8.4.3 |
| | (b) impacts on cyclists and pedestrian access and safety; and | Section 8.4.1 |
| | (c) opportunities to integrate cycling and pedestrian elements with surrounding networks | Section 8.4.1 |

| Key issue | Requirement | Where addressed? |
|---|---|---|
| **2. Noise and Vibration - 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 cover typical and realistic construction and operation activities (such as bringing trains to idle or holding trains in the loop). The assessment must include consideration of:<br><br>(a) impacts to sensitive receivers including small businesses | A summary of the results of the construction and operational noise and vibration assessment is provided in Chapter 9. The full results are provided as Technical Report 2.<br><br>Sections 9.4.3, 9.4.4 and 9.4.5 |
| | (b) noise impacts from the removal of the exiting noise walls and construction of any new noise walls (permanent or temporary) during construction, including the consideration of implementing permanent noise walls prior to the removal of the existing noise walls; | Section 9.4.2 and 9.6.3 |
| | (c) noise impacts of out-of-hours works including proposed activities, justification for these activities, estimation of the number of out-of- hours activities required and timeframes for these activities; | Section 9.4 and 9.5 |
| | (d) sleep disturbance; and<br>(e) the characteristics of noise and vibration, as relevant (for example, low frequency noise). | Section 9.4.4 |
| | 2. The Proponent must demonstrate that blast impacts are capable of complying with the current guidelines, if blasting is required. | No blasting is required |
| **3. Noise and Vibration - Structural** | 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). | A summary of the results of the vibration assessment is provided in Chapter 9. The full results are provided as Technical Report 2.<br>Consideration of potential construction impacts to structural integrity and heritage items is provided in Section 14.3. Impacts to the heritage significance of items is considered in Chapter 14 (Non-Aboriginal Heritage). |
| | 2. The Proponent must demonstrate that blast impacts are capable of complying with the current guidelines, if blasting is required. | No blasting is required |

| Key issue | Requirement | Where addressed? |
|---|---|---|
| **4. Air quality** | 1. The Proponent must undertake an air quality impact assessment (AQIA) for construction and operation of the project in accordance with the current guidelines. | A summary of the results of the air quality impact assessment is provided in Chapter 10. The full results are provided as Technical Report 3. |
| | 2. The Proponent must ensure the AQIA also includes:<br>(a) Demonstration of compliance 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)*; and | Section 10.1 |
| | (b) a cumulative local and regional air quality impact assessment | Sections 10.3.3 and 10.4.3 |
| **5. Biodiversity** | 1. The Proponent must assess biodiversity impacts in accordance with the current guidelines including the Biodiversity Assessment Method (BAM), and documented in a Biodiversity Development Assessment Report (BDAR). | A summary of the results of the biodiversity assessment is provided in Chapter 11. The full results are provided as Technical Report 4. |
| | 2. The BDAR must include details of the measures proposed to address the offset obligation as follows:<br>(a) the total number and classes of biodiversity credits required to be retired for the development/project | No biodiversity offsets are required for the project. |
| | (b) the number and 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 | |
| | e) any proposal to make a payment to the Biodiversity Conservation Fund. | |
| | 3. The Proponent must assess any impacts on biodiversity values not covered by the BAM as specified in s2.3.5 | The project would not result in any impacts on biodiversity values not covered by the BAM |
| | 4. The Proponent must assess impacts on the following [EECs, threatened species and/or populations] and provide the information specified in s8, s9 and s10 of the BAM6, specifically the Grey Headed Flying Fox colony located in the Jacqui Osmond Reserve.. | Section 11.3.2 and section 6.7 of Technical Report 4. |
| | 5. The Proponent must identify whether the project as a whole, or any component of the project, would be classified as a Key Threatening Process (KTP) in accordance with the listings in the *Biodiversity Conservation Act 2016* (NSW) (BC Act), *Fisheries Management Act 1994* (FM Act) and *Environmental Protection and Biodiversity Conservation Act 2000* (EPBC Act). | Section 11.5 |

| Key issue | Requirement | Where addressed? |
|---|---|---|
| **6. Soils, Protected and Sensitive Lands** | 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. | Section 12.2.2 |
| | 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. | Section 12.3.2 |
| | 3. The Proponent must assess whether the land is likely to be contaminated and identify if remediation of the land is required. 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 | Sections 12.2.3 and 12.3.3 |
| | 4. 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 | Section 12.3.1 |
| | 5. The Proponent must assess the impacts of the project on environmentally sensitive land and processes (and the impact of processes on the project), including: | The Project would not have any impact on environmentally sensitive land and processes. |
| | (a) Key Fish Habitat as mapped and defined in accordance with the *Fisheries Management Act 1994* (FM Act); and | |
| | (b) waterfront land as defined in the *Water Management Act* 2000. | |
| **7. Water - hydrology** | 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) likely to be impacted by the project, including stream orders, as per the BAM. | Section 13.2 |
| | 2. The Proponent must assess (and model if appropriate) the impact of the construction and operation of the project and any ancillary facilities (both built elements and discharges) on surface and groundwater hydrology in accordance with the current guidelines, including: | A summary of the results of the hydrology, flooding and water quality assessment is provided in Chapter 13. The full results are provided as Technical Report 5. |
| | (a) 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; | Section 13.3.2 and 13.4.2 |
| | (b) direct or indirect increases in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses; | Section 13.3.2 and 13.4.2 |
| | (c) 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 | Section 13.3.3 and 13.4.3 |
| | 3. The Proponent must identify any requirements for baseline monitoring of hydrological attributes. | Technical Report 7 |

| Key issue | Requirement | Where addressed? |
|---|---|---|
| **8. Water - Quality** | 1. The Proponent must: | A summary of the results of the hydrology, flooding and water quality assessment is provided in Chapter 13. The full results are provided as Technical Report 7. |
| | (a) state the ambient NSW Water Quality Objectives (NSW WQO) and environmental values for the receiving waters relevant to the project, including the indicators and associated trigger values or criteria for the identified environmental values | Section 13.1.1 |
| | (b) demonstrate that all practical measures to avoid or minimise water pollution and protect human health and the environment from harm are investigated and implemented | Sections 13.3.3,13.4.3 and 13.5.3 |
| | (c) identify sensitive receiving environments (which may include estuarine and marine waters downstream) and develop a strategy to avoid or minimise impacts on these environments | Section 13.2, 13.3.3 and 13.4.3 |
| | (d) identify proposed monitoring locations, monitoring frequency and indicators of surface water quality. | Section 13.4.3 |
| **9. Flooding** | 1. The Proponent must assess and (model where required) the impacts on flood behaviour during construction and operation for a range of flood events up to the probable maximum flood (taking into account sea level rise and storm intensity due to climate change). | A summary of the results of the hydrology, flooding and water quality assessment is provided in Chapter 13. The full results are provided as Technical Report 5. |
| **10. Heritage** | 1. The Proponent must identify and assess direct and/or indirect impacts (including cumulative impacts) to the heritage significance of: | A summary of the results of the non-Aboriginal heritage impact assessment is provided in Chapter 14. A summary of the results of the Aboriginal heritage impact assessment is provided in Chapter 15 The full results are provided as Technical Report 9. |
| | (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 | Section 15.2 |
| | (b) Aboriginal places of heritage significance, as defined in the Standard Instrument – Principal Local Environmental Plan | Section 15.2 |
| | (c) environmental heritage, as defined under the *Heritage Act 1977* | Section 14.2 |
| | (d) items listed on the National and World Heritage lists. | Section 14.2 |
| | 2. Where impacts to State or locally significant heritage items are identified, the assessment must:<br>(a) include a statement of heritage impact for all heritage items (including significance assessment) | Section 14.3 |

| Key issue | Requirement | Where addressed? |
|---|---|---|
| | (b) consider impacts to the item of significance caused by , but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment (as relevant) | Section 14.3 |
| | (c) outline measures to avoid and minimise those impacts in accordance with the current guidelines | Section 14.5 |
| | (d) 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) | Section 14.1 and |
| | 3. Where archaeological investigations of Aboriginal objects are proposed these must be conducted by a suitably qualified archaeologist, in accordance with section 1.6 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010). | Section 15.5.2 |
| | 4. Where impacts to Aboriginal objects and/or places are proposed, consultation must be undertaken with Aboriginal people in accordance with the current guidelines. | Section 15.5.2 |
| **11. Climate Change Risk** | 1. The Proponent must assess the risk and vulnerability of the project to climate change in accordance with the current guidelines. | A summary of the results of the climate change assessment is provided in Chapter 21. The full results are provided as Technical Report 12. |
| | 2. The Proponent must quantify specific climate change risks with reference to the NSW Government's climate projections at 10km resolution (or lesser resolution if 10km projections are not available) and incorporate specific adaptation actions in the design. | Section 21.1.3 |
| **12. Health and Safety** | 1. The Proponent must assess the potential health impacts of the project, in accordance with the current guidelines. | Chapter 20 |
| | 2. The Proponent must assess the likely risks of the project to public safety, paying particular attention to pedestrian safety and the handling and use of dangerous goods. | Section 20.3.1 |
| **13. Urban Design & Visual Amenity** | 1. The Proponent must:<br><br>(a) identify the urban design and landscaping aspects of the project and its components (including noise barriers and shared pedestrian paths); | A summary of the results of the landscape and visual impact assessment is provided in Chapter 17. The full results are provided as Technical Report 10.<br><br>Section 6.4 |
| | (b) assess the impact of the project on the urban and natural fabric | Sections 17.3 and 17.4 |
| | (c) explore the use of Crime Prevention Through Environmental Design (CPTED) principles during the design development process, including natural surveillance, lighting, walkways, signage and landscape | Section 17.5.1 |
| | (d) identify urban design strategies and opportunities to enhance healthy, cohesive and inclusive communities. | Section 17.5.1 |

| Key issue | Requirement | Where addressed? |
|---|---|---|
| | (e) opportunities to offset visual impacts from the loss of trees along Broomfield Street such as incorporating greening initiatives on street facing infrastructure (i.e noise barrier). | Section 17.5.4 |
| | 2. The Proponent must provide artist impressions and perspective drawings of the project to illustrate how the project will respond to the visual impacts. | Technical Report 10 |
| **14. Waste** | 1. The Proponent must assess predicted waste generated from the project during construction and operation. | Section 19.2.1 and 19.3.1 |
| | 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. | Section 19.2 |

**Table A.3 Agency requirements – in response to consultation by the Department of Planning and Environment in relation to the SEARs**

| Agency | Issues raised | Where addressed? |
|---|---|---|
| **Fairfield City Council** | **Property**<br>• Interim arrangements should be made during construction (and confirmed with council) to provide parking to replace that lost in Broomfield Street so that commuters are not inconvenienced. | Section 8.3.5 |
| | • Potential business impacts to council's car parking facilities as a result of the loss of parking in Broomfield Street | |
| | • An accurate valuation should be obtained for council owned land proposed for acquisition. | |
| | • A licence agreement should be obtained for the temporary use of council land during construction | Section 16.3.2 |
| | • Road closure permits should be obtained prior to implementing road closures during construction | Section 8.5.2 |
| | **Open space**<br>• Impacts on the Parramatta to Liverpool Rail Train (shared walkway/cycleway) as a result of works to Broomfield Street | Section 16.4.2 |
| | • Broomfield Street should be realigned so that this portion of the cycleway network is retained | Section 6.2.4 |
| | **Catchment planning**<br>***Flooding***<br>• The replacement section of shared pathway should be designed in accordance with council's requirements (outlined in the letter) in relation to height and distance from the top of the bridge and bank | The replacement section of the shared pathway would be designed to meet a like for like replacement.<br>Section 6.2.4<br>Section 13.3 and Section 13.4 |
| | • The project should not create any adverse flooding impacts | Section 13.3 and Section 13.4 |
| | • Council's update to the TUFLOW model of Cabramatta Creek should be used to assess any possible flooding impacts | Section 13.4.1 and Section 13.5.2 |

| Agency | Issues raised | Where addressed? |
|---|---|---|
| | ***Hydrology – Cabramatta Creek*** | |
| | • Provide details on the integration of the bridge works with Cabramatta Creek and the shared pathway | Section 6.2.3 and Section 6.2.4 |
| | • The new bridge should be designed in accordance with council's requirements (as outlined in the letter) in relation to height and distance from the top of the bank | Section 6.2.3 and Section 6.2.4 |
| | • No bridge abutments are to be located in the creek/waterway area | Section 6.2.3 |
| | • A management plan is required for gross pollutants generated by the construction works | Section 13.5.2 |
| | ***Biodiversity – revegetation and riparian works*** | |
| | • All creek banks (riparian zone) should be revegetated with native species of local significance from the endangered ecological vegetation community of River Flat Eucalypt or River Flat Forest, sourced from Fairfield City Council's Local Community Nursery | Section 17.5.2 |
| | • Revegetation should be undertaken in accordance with council requirements (as outlined in the letter), including council approval of the vegetation management plan, proposed landscape plan and species list | Section 17.5.2 |
| | • All waterway rehabilitation designs, hydraulic modelling and native revegetation landscape plans shall be prepared by an experienced environmental consultant in waterway rehabilitation works for freshwater environments | No works would occur within waterways.<br>Section 13.5.2<br>Section 17.5.2 |
| | • All waterway, bank protection and riparian revegetation works should be undertaken in accordance with council requirements and reviewed and approved by council. | Section 13.5.2<br>Section 17.5.2 |
| | ***Cabramatta Place Team*** | |
| | ***EIS – parking near Cabramatta Station*** | |
| | • Parking close to Cabramatta train station entry must remain available during construction. | Section 8.3.5 |
| | • Any temporary parking must be safely located with adequate lighting and sign posting, within 100 metres walking distance of the station | Section 8.3.5 |
| | ***Biodiversity – flying fox colony*** | Section 11.8.4 |
| | • The Cabramatta Creek flying fox colony should be protected | |
| | ***Consultation*** | |
| | • A management plan for freight train operations should be developed for residents to understand the impact of the proposed change | Impacts of freight train operations on residents are provided in Section 18.4. |
| | • Face to face consultation with each affected land owner and or tenant should be undertaken in community languages | Sections 18.5.1 |
| | • A committee, similar to the SSFL committee, should be established to deal with stakeholder engagement | A community and stakeholder engagement plan would be prepared to facilitate communication with the community as described in Section 18.5.2 and Chapter 4. |

| Agency | Issues raised | Where addressed? |
|---|---|---|
| | • A project officer should be provided to assist impacted residents | A community and stakeholder engagement plan would be prepared to facilitate communication with the community as described in Section 18.5.2 and Chapter 4 |
| | ***Visual amenity***<br>• Graffiti management on the new sound wall should be of a high standard; it is currently poor | Section 17.5.2 |
| | ***Festivals***<br>• Construction should not affect Cabramatta's large street festivals | Section 8.3.1 |
| **Liverpool City Council** | **Flooding and water quality**<br>***Flood assessment***<br>• The proposal traverses high, medium and low flood risk areas of the Cabramatta Creek floodplain in Warwick Farm. There should be no adverse flooding impacts due to the proposed works | Sections 13.3, 13.4 and Technical Report 5 |
| | • Any increase in flood levels, extent and velocities should be mitigated by flood mitigation works. | Sections 13.3, 13.4 and Technical Report 5 |
| | • A flood study should be undertaken in accordance with council's requirements (as outlined in the letter), including modelling and flood difference mapping of pre/post development, and submitted for council review | No further flood studies are being undertaken. Flood modelling has been undertaken, refer to Technical Report 5. |
| | • Council's 2D TUFLOW model should be used for the flooding assessment | Section 13.4.1 and Section 13.5.2 |
| | ***Erosion protection***<br>• Erosion protection should be provided on creek banks upstream/downstream of the new bridge at Cabramatta Creek | Sections 13.3.3 and 13.5.2 |
| | ***Water quality assessment***<br>• A water quality assessment should be undertaken | Section 13.1.2 and Technical Report 7 |
| | • Mitigation measures should be considered to address the potential risk of pollution of the creek during construction | Section 13.5.2 |
| | • Water quality improvement devices should be considered to treat storm runoff from project areas before discharging to the creek | Section 13.5.2 |
| | **Heritage**<br>***Indigenous***<br>• There is potential for Indigenous archaeology, especially along Cabramatta Creek where new pylons will be required for two new bridges. | Section 15.2 |
| | • An Indigenous Heritage Assessment should be undertaken, focusing mainly on the Cabramatta Creek area and including unexpected finds protocols | Technical Report 9 |
| | **Traffic**<br>• A construction traffic management plan should be provided | Section 8.5.2 |
| | • Provide an assessment of cumulative impacts associated with other construction activities | Section 8.4.4 |

| Agency | Issues raised | Where addressed? |
|---|---|---|
| | • Provide an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity | Section 8.3.9 |
| | • Provide details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process | Section 7.3 |
| | • Provide details of anticipated peak hour and daily construction vehicle movements to and from the site | Section 7.6 |
| | • Provide details of on-site car parking and access arrangements for construction vehicles, construction workers, emergency vehicles and service vehicle | Section 8.3.5 |
| | • Provide details of temporary cycling and pedestrian access during the construction | Section 8.3.4 |
| | • Provide haulage routes for construction vehicles | Section 7.6 |
| **Office of Environmental and Heritage** | **Biodiversity**<br>• Biodiversity impacts are to be assessed in accordance with the *Biodiversity Conservation Act 2016* using the Biodiversity Assessment Method (BAM) and documented in a Biodiversity Development Assessment Report (BDAR). | A summary of the results of the biodiversity assessment is provided in Chapter 11. The full results are provided as Technical Report 4. |
| | • The BDAR must document application of the avoid, minimise and offset hierarchy including assessing impacts in accordance with the Biodiversity Assessment Method. | No biodiversity offsets are proposed |
| | • The BDAR must include details of the measures proposed to address the offset obligation as defined by OEH (as outlined in the letter) | No biodiversity offsets are proposed |
| | • The BDAR must be submitted with all digital spatial data associated with the survey and assessment | The BDAR has been submitted with all digital spatial data. |
| | • The BDAR must be prepared by a person with the nominated accreditation | Section 2.8 of Technical Report 4 |
| | • Impacts on the Grey Headed Flying Fox colony located nearby in Jacqui Osmond Reserve need to be assessed | Section 11.3.2 and section 6.7 of Technical Report 4 |
| | **Flooding**<br>• The latest data from Liverpool and Fairfield councils' relevant flood studies should be used and the councils should be consulted | Section 13.1 and 13.2.2 |
| | • Features relevant to flooding, as described in the Floodplain Development Manual 2005 (including those outlined the letter) should be mapped | Section 13.1 and Technical Report 5 |
| | • Describe the flood assessment and modelling undertaken, including the 1 in 10 year, 1 in 100 year flood levels and the PMF or an equivalent extreme event | Section 13.2.2 |
| | • Model the effect on flood behaviour under the listed scenarios | Summary of results are in Section 13.2.3 with full results provided in Technical Report 5 |
| | • Modelling must consider and document OEH's requirements (as outlined in the letter) | Technical Report 5 |

| Agency | Issues raised | Where addressed? |
|---|---|---|
| | • The impacts of the project on flood behaviour must be assessed in accordance with OEH's requirements (as outlined in the letter) | Section 13.3.1 and Section 13.4.1 |
| | **Water and soils**<br>• Features relevant to water and soils must be mapped, including acid sulphate soils; rivers, streams and estuaries, wetlands, groundwater, groundwater dependent ecosystems, proposed intake and discharge locations | Chapters 12 and 13 |
| | • Describe the background conditions for any water resource likely to be affected in accordance with OEH's requirements (as outlined in the letter) | Section 13.2 |
| | • Assess the impacts on water quality in accordance with OEH's requirements (as outlined in the letter) | Section 13.3.3 and Section 13.4.3 |
| | • Assess the impacts on hydrology in accordance with OEH's requirements (as outlined in the letter) | Section 13.3.1 and Section 13.4.1 |
| | **Aboriginal Cultural Heritage**<br>• Identify and describe the Aboriginal cultural heritage values that will be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) | Technical Report 9 |
| | • Consultation with Aboriginal people must be undertaken and documented in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW | ACHAR is provided at part of Technical Report 9 |
| | • Impacts on Aboriginal cultural heritage values are to be assessed and documented in an ACHAR, including mitigation measures | Chapter 2 and Technical Report 9 |
| | • The ACHAR must outline procedures to be followed if Aboriginal objects are found | Chapter 2 and Technical Report 9 |
| | **Coastal hazards**<br>• Describe the potential effects of coastal processes and hazards<br>• Consider the effects of coastal hazards on the proposal | These requirements are not relevant given the distance from the coast |
| **NSW EPA** | **Air quality**<br>• An air quality assessment should be undertaken for the construction and operational phases of the project in accordance with the EPA's requirements (as outlined in the letter), including an assessment of the impact of exhaust emissions from locomotives and measures to mitigate these impacts | A summary of the results of the air quality impact assessment is provided in Chapter 10. The full results are provided as Technical Report 3. |
| | **Noise and vibration**<br>• Noise and vibration impacts should be assessment in accordance with the ICNG and RING and EPA's requirements (as outlined in the letter) | A summary of the results of the construction and operational noise and vibration assessment is provided in Chapter 9. The full results are provided as Technical Report 2. |
| | • The assessment should clearly state what type of rail infrastructure development the project constitutes under the RING | Section 3.2 of Technical Report 2 |

| Agency | Issues raised | Where addressed? |
|---|---|---|
| | • The assessment must provide clear justification for construction activities to be conducted outside the recommended standard hours in Section 2.2 of the ICNG, and assess these impacts | Section 5 of Technical Report 2 |
| | • Approval to work outside of the recommended standard hours may be required from the EPA | Noted |
| | • The NSW EPA should be included as a stakeholder for consultation | Noted |
| | • Details should be provided of the current and estimated productivity of the rail line for 2030 | Section 6.6 |
| **Transport for NSW** | A traffic and transport assessment should be prepared addressing TfNSW's requirements, including the matters summarised below. | Chapter 8 and Technical Report 1 |
| | • Proposed operational arrangements for all vehicles, pedestrians and cyclists, and measures to mitigate impacts | Section 8.4 |
| | • Details of access arrangements for emergency vehicles and protocols for emergencies | Section 8.3.8 |
| | • Details of loss of parking in Broomfield St (permanent and temporary) and alternate parking provision | Sections 8.3.5 and 8.3.4 |
| | • Detailed acoustic assessment, including noise impacts of holding an Up freighter in the new loop | A summary of the results of the construction and operational noise and vibration assessment is provided in Chapter 9. The full results are provided as Technical Report 2. |
| | • Illustrate how the existing walking and cycling networks will be maintained across Cabramatta Creek and at the Sussex Street underpass during construction of the new bridges | Section 8.4.1 |
| | • Pedestrian and bicycle rider movements should be maintained along footways and shared paths, with adequate safety and diversion measures provided if required | Section 8.4.1 |
| | • Include a preliminary Construction Traffic and Pedestrian Management Plan | Preliminary CTMP guide provided in section 7.1 of Technical Report 1 |
| | • Details of construction staging and coordination of possessions with Sydney Trains, including any potential for freight access to Sydney Trains network during an ARTC possession | Section 7.3 |
| | • Plans demonstrating how all vehicles associated with construction and operation can be accommodated on the site to avoid queuing in the street network. | Technical Report 1 section 7.1.5 |
| | • Construction impacts on the existing and future public transport network, pedestrian and bicycle networks | Technical Report 1 section 4 |
| | • Sweep path diagrams for vehicles entering, exiting and manoeuvring throughout the site | Technical Report 1 section 7.1.5 |
| | • Address the relevant planning provisions, goals and strategic planning objectives in the listed strategies and guidelines | Chapter 3 |
| | • Consult with TfNSW, Roads and Maritime and Sydney Trains during the preparation of the assessment | To be completed during detailed design. |

| Agency | Issues raised | Where addressed? |
|---|---|---|
| **Department of Industry** | **DPI Fisheries**<br>• The proposed bridge crossing should be designed and constructed to avoid harm key fish habitat at Cabramatta Creek or block fish passage | Technical Report 4 section 4.2 and section 6 |
| | • Minimise harm to mangroves associated with bridge construction | Not relevant |
| | • Bridge construction should use best practice erosion and sediment control measures | Technical Report 7 section 5 and 6 |
| | **DPI Water**<br>• Identification of an adequate and secure water supply for the life of the project | Technical Report 7 section 5 |
| | • A detailed and consolidated site water balance | Technical Report 7 section 5 |
| | • Assessment of impacts on surface and ground water sources, related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems | Technical Report 7 section 5 and 6 |
| | • Assess impacts from construction and operation on potentially affected properties, businesses, recreational users and land and water users | Section 18.4 and 18.5 |
| | • Proposed surface and groundwater monitoring activities and methodologies | Technical Report 7 section 7 |
| | • Consideration of relevant legislation, policies and guidelines, including the NSW Aquifer Interference Policy, the DPI Water Guidelines for Controlled Activities on Waterfront Land and the Water Sharing Plans for the Greater Metropolitan Region Groundwater | Technical Report 7 section 1.5 |

# APPENDIX B

## EIS FORM AND CONTENT REQUIREMENTS – ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2000

ENVIRONMENTAL IMPACT STATEMENT

ARTC

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# B. REQUIREMENTS OF SCHEDULE 2 (PART 3) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2000

| Requirement | EIS reference |
|---|---|
| **6. Form of the environmental impact statement** | |
| An environmental impact statement must contain the following information: | |
| (a) the name, address and professional qualifications of the person by whom the statement is prepared | Refer certification at the front of the EIS with respect to (a) – (f) |
| (b) the name and address of the responsible person | |
| (c) the address of the land:<br>(i) in respect of which the development application is to be made, or<br>(ii) on which the activity or infrastructure to which the statement relates is to be carried out | |
| (d) a description of the development, activity or infrastructure to which the statement relates | |
| (e) an assessment by the person by whom the statement is prepared of the environmental impact of the development, activity or infrastructure to which the statement relates, dealing with the matters referred to in this Schedule | |
| (f) a declaration by the person by whom the statement is prepared to the effect that:<br>(i) the statement has been prepared in accordance with this Schedule, and<br>(ii) the statement contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and<br>(iii) that the information contained in the statement is neither false nor misleading. | |
| **7. Content of environmental impact statement** | |
| (1) An environmental impact statement must also include each of the following: | |
| (a) a summary of the environmental impact statement | Executive summary |
| (b) a statement of the objectives of the development, activity or infrastructure | Chapter 1 |
| (c) an analysis of any feasible alternatives to the carrying out of the development, activity or infrastructure, having regard to its objectives, including the consequences of not carrying out the development, activity or infrastructure | Chapter 5 |
| (d) an analysis of the development, activity or infrastructure, including:<br>(i) a full description of the development, activity or infrastructure, and | Chapters 6 and 7 |
| (ii) a general description of the environment likely to be affected by the development, activity or infrastructure, together with a detailed description of those aspects of the environment that are likely to be significantly affected, and | Chapter 2 and Part B (Chapters 8 to 21) |
| (iii) the likely impact on the environment of the development, activity or infrastructure, and | Part B |
| (iv) a full description of the measures proposed to mitigate any adverse effects of the development, activity or infrastructure on the environment, and | Part B |
| (v) a list of any approvals that must be obtained under any other Act or law before the development, activity or infrastructure may lawfully be carried out | Chapter 3 |
| (e) a compilation (in a single section of the environmental impact statement) of the measures referred to in item (d) (iv) | Chapter 22 |
| (f) the reasons justifying the carrying out of the development, activity or infrastructure in the manner proposed, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development set out in subclause (4). | Chapter 23 |

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# APPENDIX C

## STRATEGIC PLANNING CONTEXT

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# C. STRATEGIC PLANNING REVIEW

A summary of the plans and strategies that are relevant to the need for, and development of, the project is provided below.

## National strategic planning

### *National Land Freight Strategy*

The *National Land Freight Strategy – A place for freight* (Commonwealth of Australia, 2012) recognised that a coordinated national approach was required to ensure more efficient and sustainable freight logistics in Australia. It noted that over the four preceding decades, the Australian freight task had quadrupled, with major increases evident in road and rail, and that this trend was expected to continue, with the total freight tasks expected to nearly double by 2030 based on 2010 levels.

The Strategy sought to direct the efforts of all governments and industry and outcomes for freight in Australia. The objective of the Strategy was to improve the efficiency of freight movements across infrastructure networks, minimise the negative impacts associated with such freight movements and influence policy making relevant to the movement of freight. It identified six major challenges facing freight that required coordinated policy action and effort by government and industry to:

- ensure that there are long term and integrated plans in place for freight
- invest in the right infrastructure at the right time
- improve access, investment and charging arrangements for heavy vehicles
- create better and more consistent regulation
- enhance understanding of the freight task and its associated challenges
- build community understanding and support for the role of freight in society.

It committed governments to a work plan of practical first steps to addressing these key challenges. This included a requirement for States and Territories to put in place long term freight plans consistent with the objectives of the Strategy. The Strategy recognised that several States were in the process of developing long term freight plans for their own jurisdiction, including NSW who was developing the *Draft NSW Freight and Ports Strategy* at the time (discussed further below). The Strategy noted that long term planning was required, and provided the case study of the Moorebank Intermodal Terminal, the objective of which is to provide greater freight container capacity and efficiency, reduce congestion and use rail to transfer goods from Port Botany. The project was developed to increase capacity for rail freight traffic accessing Port Botany, and to provide for future growth patterns, including the Moorebank Intermodal Terminal to 2030.

### *Inquiry into National Freight and Supply Chain Priorities*

The Inquiry into National Freight and Supply Chain Priorities was initiated by the former Australian Minister for Infrastructure and Transport in 2017. The inquiry was tasked with identifying priorities for Australia for the next 20 years, to improve freight and supply chain efficiency and capacity, and manage the costs of transporting goods through Australia's major national container ports, airports, intermodal terminals and pipelines.

Feedback from Ports Australia during the Inquiry process concluded that while terminal capacity at most ports across Australia can meet predicted needs for the next 20 years with reasonable investment, some container ports such as Port Botany and the Port of Melbourne have constraints associated with their land based transport connections.

The inquiry report (Commonwealth of Australia 2018) noted that road transport will experience increased congestion and associated higher costs over the next 20 years, and that investing in efficient rail freight connections to major ports and rail freight paths through metropolitan networks will take pressure off the road system.

The report includes a number of critical action areas, of which action 4.3 is relevant to the project: 'Provide additional funding to ensure efficient rail freight connections to major ports and rail freight paths through metropolitan networks, including port rail projects, such as completing the duplication of the Port Botany freight rail line.' The project is noted to increase the benefits of this duplication and will help support the more efficient movement of freight to Port Botany.

### *Australian Infrastructure Plan and Priority List*

The *Australian Infrastructure Plan* (Infrastructure Australia 2016) sets out the infrastructure challenges and opportunities that Australia faces over the next 15 years and the solutions required. The plan was informed by a comprehensive review of existing and required infrastructure over the coming decades. The plan has four main themes:

- Productive cities, productive regions
- Efficient infrastructure markets
- Sustainable and equitable infrastructure
- Better decisions and better delivery.

In relation to the second theme, the plan recognises that 'Demand for freight rail infrastructure is projected to grow substantially in coming decades.'

As part of the *Australian Infrastructure Plan*, the Infrastructure Priority List (Infrastructure Australia 2018) is designed to give guidance to decision makers and provide transparency for industry and the community. It is a 'rolling' list that is updated periodically as proposals move through development and delivery and in response to emerging challenges and opportunities.

The 'Port Botany freight rail duplication' is included as a high priority near-term (0–5 years) initiative on the Infrastructure Priority List in the national connectivity category. The priority list notes that:

The rail line is currently operating close to capacity. Additional demand arising from growth in interstate, intrastate and import/export freight has the potential to create a bottleneck along this line, impacting on reliability and restricting the efficient movement of freight across the broader Sydney rail network.

As Sydney's primary container port, it is vital that Port Botany maintains throughput capacity to meet demand over the long term.

Currently, around 19 per cent of Port Botany containerised freight is moved using the rail network. Increasing this mode share will require additional capacity on the Port Botany Rail Line and the broader Sydney freight rail network.

The project and the Port Botany duplication are being undertaken as part of Stage 3 of a Nation Building funded Program to improve capacity on the Port Botany Rail Line. The project will support the benefits realised by the Port Botany duplication.

### *National Ports Strategy*

The *National Ports Strategy* (Infrastructure Australia and the National Transport Commission 2011) was developed as part of a collaborative approach to the future development and planning of Australia's port and freight infrastructure. The Strategy covers both bulk commodity ports and container ports, identifying:

- the most effective regulatory and governance frameworks
- ways to improve land planning and corridor preservation
- future infrastructure requirements of Australia's ports, including road and rail links.

The Strategy notes that there are major efficiency implications for Australia if significant improvements are not made to ports and related landside road and rail systems over the coming decades.

The project is consistent with this strategy as it involves improvements to the rail network accessing Port Botany.

## NSW planning

### *Future Transport Strategy 2056*

The *Future Transport Strategy 2056* (Transport for NSW 2018b) is a suite of strategies and plans for transport developed in conjunction with the Greater Sydney Commission's *A Metropolis of Three Cities – the Greater Sydney Region Plan* and supporting regional plans, and Infrastructure NSW's *State Infrastructure Strategy.* The *Future Transport Strategy 2056* provides an integrated 40 year vision, directions and outcomes for transport in NSW. The vision for the future of transport is based on six outcomes:

- Customer focussed
- Successful places
- A strong economy
- Safety and performance
- Accessible services
- Sustainability.

The Strategy recognises that the freight rail network will be an integral part of Sydney's transport system into the future. It notes that: 'The strategic freight network will use major city-shaping corridors and increasingly rely on dedicated freight rail corridors for movements between ports and intermodal terminals in the Central and Western Cities'.

The Strategy recognises the Botany rail line as part of Sydney's strategic freight network, and notes that:

> *The strategic freight network includes the most significant corridors that support the movement of goods. This includes corridors connecting trade gateways, freight precincts and centres across Greater Sydney as well as corridors that connect the region with outer metropolitan areas and regional NSW. Supporting the safe, efficient and reliable movement of goods around Greater Sydney will require a high capacity network for movement between trade gateways and convenient access to service centres.*

The project is consistent with the strategy as it will support the functioning of the Port Botany Rail Line as part of Sydney's freight network, and the safe, efficient and reliable movement of goods along the line.

### *State Infrastructure Strategy 2018-2038: Building Momentum*

The *State Infrastructure Strategy 2018-2038* (Infrastructure NSW 2018) establishes the strategic directions, projects and initiatives to meet the infrastructure needs of a growing population and a growing economy.

The Strategy investigates infrastructure demands over the next 20 years. With respect to Port Botany, it notes that container trade through the port is expected to grow by 62 per cent between 2016 and 2036, increasing from 2.36 to 3.83 million twenty foot equivalent units. The Strategy notes that 'maintaining the

efficiency of infrastructure networks and access to the international trade gateways of Sydney Airport and Port Botany will be critical to support the ongoing competitiveness of the city and of NSW'.

With respect to transport, the Strategy notes that rising congestion on parts of the road network and crowding on sections of the rail network will increase travel times and affect the reliability of the freight network. The strategy recommends shifting demand towards more efficient modes of transport, and unlocking the capacity of current assets by modernising systems and addressing bottlenecks.

The project is consistent with the following strategic directions in the Strategy:

- Improve access to international gateways.
- Optimise existing infrastructure networks to provide greater capacity for better services.

It is also consistent with the following key recommendations for the transport sector:

- Overcome local constraints on the regional road and rail networks that limit the use of high productivity freight vehicles and rail freight.
- Further develop the Sydney rail network with new rail links and system-wide upgrades.
- Develop and protect freight and service networks by improving road and rail access for goods and services to local, national and global markets, leverage the Commonwealth's Inland Rail investment and address existing inefficiencies and pinch points.

Providing additional capacity on the SSFL is also identified as a transport project within the Strategy.

#### *NSW Freight and Ports Plan 2018-2023*

The *NSW Freight and Ports Plan* (Transport for NSW 2018), which forms part of *Future Transport Strategy 2056*, sets the strategic direction for freight and ports over the next 40 years. The Plan identifies key objectives and goals to create a transport network where goods move efficiently to their markets. The Plan notes that access by both road and rail to and from freight facilities such as ports is becoming increasingly constrained, and that congestion and constraints on the supporting land transport network can reduce the performance of ports.

The project is consistent with the following key objectives:

- Economic growth: Providing confidence and certainty that encourages continued investment in the freight industry to support economic growth.
- Efficiency, connectivity and access: Improving the efficiency of existing infrastructure and ensuring greater connectivity and access along key freight routes.
- Capacity: Maximising infrastructure investment and increasing land use capacity to accommodate growth.

To meet the 'capacity' key objective, the NSW Government has a goal to deliver new infrastructure to increase rail freight capacity. The project is identified as one of the committed initiatives to address this goal:

- Amplification of the Southern Sydney Freight Line: Construct a passing loop at Cabramatta to support operations at Moorebank Intermodal Terminal (subject to Final Business Case, 3 – 5 years).

### Metropolitan/regional planning

#### *A Metropolis of Three Cities – the Greater Sydney Region Plan*

*A Metropolis of Three Cities – the Greater Sydney Region Plan* (Greater Sydney Commission 2018a) sets a 40 year vision (to 2056) and establishes a 20 year plan to manage Greater Sydney's growth and change.

The Plan is built on a vision of three cities, where most residents live within 30 minutes of jobs, education, health facilities, and other services:

- Western Parkland City
- Central River City
- Eastern Harbour City.

The Plan notes that:

- efficient trade gateways, freight and logistics networks are required for the region to be more internationally competitive
- Port Botany and Sydney Airport are Greater Sydney's two nationally significant trade gateways, with significant growth projected
- retaining internationally competitive operations at Port Botany and Sydney Airport is vital for a productive NSW economy
- ensuring transport networks can support the needs of the trade gateways is of national significance
- providing for a growing Greater Sydney requires an efficient and effective road and rail freight network integrated with ports and airports.

The Plan includes ten directions and 40 objectives for the future of Sydney. The project is consistent with the following objectives:

- Objective 3 – Infrastructure adapts to meet future needs
- Objective 15 – The Eastern, Greater Parramatta and the Olympic Peninsula, and Western Economic Corridors are better connected and more competitive
- Objective 16 – Freight and logistics network is competitive and efficient.

***Western City District Plan***

The Greater Sydney Commission's five district plans are a guide for implementing *A Metropolis of Three Cities – the Greater Sydney Region Plan* at a district level. These 20 year plans are a bridge between regional and local planning. Their purpose is to inform local environmental plans, community strategic plans and the assessment of planning proposals.

The project is located in an area subject to the *Western City District Plan* (Greater Sydney Commission 2018b). The plan notes that as the Western City District develops, opportunities to improve freight network efficiencies will become more important. It notes that the Western City District must also connect port and airport activities, linking Western Sydney Airport, Moorebank Intermodal Terminal and a potentially expanded container port at Port Kembla.

The project is consistent with the following planning priorities:

- W1 Planning for a city supported by infrastructure
- W7 Establishing the land use and transport structure to deliver a liveable, productive and sustainable Western Parkland City
- W10 Maximising freight and logistics opportunities and planning and managing industrial and urban services land
- W11 Growing investment, business opportunities and jobs in strategic centres.

The Moorebank Intermodal Terminal will provide integrated service including interstate terminals, warehousing, retail and service offerings, and rail connection to the Southern Sydney Freight Line, which also provides dedicated freight rail access all the way to Port Botany. The plan notes that Transport for NSW and the Australian Government are committed to supporting efficient movement of goods close to the Moorebank Intermodal Terminal by facilitating freight rail and road access. The project will support the increased demand associated with operation of the Moorebank Intermodal Terminal.

### *Greater Sydney Services and Infrastructure Plan*

The *Greater Sydney Services and Infrastructure Plan* (Transport for NSW 2018c), which forms part of the *Future Transport Strategy 2056*, sets the strategic direction for transport in NSW over the next 40 years. Building on the state-wide transport outcomes identified in the *Future Transport Strategy 2056*, the plan identifies specific transport outcomes for Greater Sydney, and the policy, service and infrastructure initiatives to achieve these outcomes.

The project will assist in achieving outcome 8, which relates to the 'safety and performance' outcome under the *Future Transport Strategy 2056*. Outcome 8 is 'Efficient and reliable freight journeys supported by 24/7 rail access between key freight precincts with convenient access to centres'. Relevant to this outcome, the plan recognises that the productivity of Sydney and many regional NSW communities depends on container goods being moved safely, efficiently and reliably within Greater Sydney, and that the efficiency of freight movements in Sydney has a significant impact on the wider freight industry and economy. The plan commits to investigating capacity improvements to the Southern Sydney Freight Line to improve the reliability of connections between Greater Sydney and regional NSW.

The plan also defines the vision for Sydney's future transport networks, including the strategic freight network. The plan notes that 'A key task for the freight network over the next 40 years will be to support growing demand between ports in the east, particularly Port Botany'. The plan includes 'improve reliability and journey times for freight movements between regional NSW and Greater Sydney through upgrades to the Southern Sydney Freight Line' as an initiative for investigation (0–10 years), as one of the transport initiatives for the Western Parkland City. These initiatives include those focussed on supporting the efficient movement of freight between the city and ports and regions including providing additional capacity on the Southern Sydney Freight Line.

### *Navigating the Future: NSW Ports' 30 Year Master Plan*

NSW Ports began operations in mid-2013 under a 99-year lease for Port Botany, Port Kembla, the Cooks River Intermodal Terminal and the Enfield Intermodal Logistics Centre. Navig*ating the Future: NSW Ports' 30 Year Master Plan* documents the actions required to create a sustainable port supply chain that will meet the needs of NSW over the next 30 years and beyond. It details expected trade growth and outlines the actions to address this growth. The Master Plan notes that:

- Port Botany is vital to the economic wellbeing of Sydney and NSW and is NSW's only container port and the largest bulk liquid and gas port.
- Most of Port Botany's trade caters for Sydney's consumers and businesses, with 80 per cent of import containers delivered within a 40 kilometres radius from Port Botany.
- Port Botany will be required to cater for growing trade volumes over the next 30 years.

More containers will be transported by rail, supported by a network of existing and new metropolitan intermodal terminals – NSW Ports' has a target of three million TEUs (basic container units) of containers being moved to and from Port Botany by rail by 2045 (around 40 per cent of forecast container volumes), with the Cooks River Intermodal Terminal and Enfield Intermodal Logistics Centre supporting this task

The Enfield and Cooks River intermodal terminals will be inland extensions to Port Botany, with Cooks River operating as an extended port gate and the Enfield Intermodal Logistics Centre a key logistics hub in the central-west of Sydney

Container volumes could more than triple from 2.3 million to 8.4 million TEUs over the next 30 years

Maximising the capacity of Port Botany and its ability to meet the predicted growth in freight throughput requires a combined investment in, and optimisation of, both road and rail networks.

The Master Plan identifies five objectives to respond to these needs and sustainably cater for forecast trade growth. The project will assist in achieving objective 2 'Grow rail transport of containers'. With regard to this objective, the plan notes that:

> *Maximising the transport of containers by rail between Port Botany and Sydney metropolitan intermodal terminals will be essential for cost-effective, efficient and sustainable container distribution throughout Sydney. Growth in use of rail will benefit the road networks surrounding the port by reducing the numbers of trucks. Significant growth in containers moved by rail will reduce the growth of trucks around Port Botany and will enable the port to achieve its optimum capacity.*

Port Botany will not achieve an annual container throughput of over seven million TEU without rail becoming a more significant component of the port logistics chain.

The Master Plan specifically mentions the requirement for the project, noting that capacity improvements on rail beyond the Enfield Intermodal Logistics Centre, for example a passing loop near Warwick Farm on the Southern Sydney Freight Line, will also be required to cater for the growth of the Moorebank Intermodal Terminal and future intermodal terminals in western Sydney.

### *Sydney Metropolitan Freight Strategy*

The purpose of ARTC's *Sydney Metropolitan Freight Strategy* (ARTC 2015) is to document the challenges, opportunities and the most effective solutions to achieve rail freight growth in Sydney. The Strategy notes that ARTC's fundamental objective in the Sydney area is to facilitate the growth of rail freight in the short, medium and long term.

The Strategy notes that rail market share at Port Botany is predicted to increase from 14 per cent in 2014 to 42 per cent in 2028, and that capacity improvements on the network are required to address this increase.

The Strategy describes how ARTC has developed a staged upgrading program. Stage 1 and Stage 2 of this program have been completed and the strategy notes a third phase has now been funded under the current infrastructure investment program. The Stage 3 works included a capacity study looking at future enhancements of the Southern Sydney Freight Line to accommodate increased freight traffic to Port Botany, including Moorebank Intermodal Terminal. As an outcome of this capacity study, required to meet future capacity requirements under the most likely future demand scenario, the Strategy notes the need to proceed with a new entry loop at Warwick Farm.

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# APPENDIX D

## ENVIRONMENTAL RISK ASSESSMENT

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# 1 OVERVIEW

## 1.1 Background

As part of the process of undertaking a detailed environmental impact statement (EIS) for the Cabramatta Loop Project (the project), a preliminary environmental risk assessment was undertaken. The purpose of undertaking the risk assessment process was to identify key issues and impacts to be incorporated into the impact assessment.

To inform the preliminary environmental risk assessment an initial risk analysis workshop was held on 14 November 2018 with representatives from ARTC, the design team and the environmental impact assessment team. The preliminary environmental risk analysis was undertaken in general accordance with the principles of the Australian/New Zealand Standard AS/NZS ISO 31000:2009 Risk management – Principles and guidelines (Australian/New Zealand Standard 2009).

The environmental risk assessment was carried out in the form of a preliminary, desktop level risk assessment, to broadly assess the potential environmental impacts and risks associated with construction and operation of the project. The assessment was based on evidence, previous experience and professional judgement of potential risks, and their consequence, likelihood and significance (without mitigation). The environmental risk assessment identified and ranked potential impacts with the aim of refining and prioritising the scope of the environmental assessment including the specialist studies which support this environmental impact statement.

The environmental impact assessment addresses the issues that were confirmed as key issues through this initial environmental risk assessment process. Key issues are those issues that have high or very high impacts (actual or perceived) and require comprehensive assessment to determine the severity of potential effects and to identify appropriate management and mitigation measures.

Those risks that were identified as medium or above as part of the preliminary environmental risk assessment are detailed in Chapter 8 to Chapter 21.

Based on the impacts identified as part of the environmental impact assessment (refer to Chapter 8 to Chapter 21) the preliminary risk assessment has been re-evaluated to assess the residual risks of the project, taking into account the mitigation measures identified in Chapter 22.

## 1.2 Risk analysis framework

The residual environmental risk analysis was undertaken in general accordance with the principles of the Australian/New Zealand Standard AS/NZS ISO 31000:2009 Risk management – Principles and guidelines (Australian/New Zealand Standard 2009). The risk analysis involved assessing the risk level of each identified potential impact by identifying the consequences of the impact and the likelihood that the impact can occur.

Definitions of the ‘consequence’ and ‘likelihood’ of the impacts are discussed in more detail in the following sections.

### 1.2.1 Evaluating consequence

Consequence is defined as the implication of an impact. The consequences of an impact require a degree of subjective assessment as the likely consequences of an impact may consist of several elements.

The elements that have been considered in this risk assessment are described in Table D.4

Table D.4 Consequences of occurrence

| Consequence level | Description |
|---|---|
| **Extreme** | ▸ Long-term (greater than 12 months) and irreversible large-scale environmental, social or economic impacts<br>▸ May be local or wider spatial extent (including up to state-wide)<br>▸ One or more fatalities<br>▸ Resulting in major prosecution under relevant environmental legislation<br>▸ Extended substantial disruption and impacts to stakeholders or customers |
| **Major** | ▸ Medium to long-term (6 to 12 months) and potentially irreversible<br>▸ May be local or wider spatial extent (no greater than nearby local government areas)<br>▸ Two to ten serious injuries<br>▸ Extensive remediation required<br>▸ Resulting in a fine or equivalent penalty under relevant environmental legislation<br>▸ Severe disruptions or long-term impacts to stakeholders or customers |
| **Moderate** | ▸ Short to medium-term (1 to 6 months), reversible and/or well-contained impacts<br>▸ May be local spatial extent (the site and nearby surrounds)<br>▸ One serious injury<br>▸ Minor remedial actions<br>▸ Moderate disruptions or impacts to stakeholders or customers |
| **Minor** | ▸ Short-term (less than 1 month), and reversible<br>▸ May be localised spatial extent (within site boundaries)<br>▸ One or more minor injuries<br>▸ Within environmental regulatory limits<br>▸ Minor or short-term disruptions or impacts to stakeholders or customers |
| **Not significant** | ▸ Very short-term and readily reversible (not significant)<br>▸ No appreciable changes to environment<br>▸ No injuries<br>▸ Negligible impacts to environment, stakeholders or customers |

### 1.2.2 Evaluating likelihood

The likelihood of an impact occurring can be described in terms of probability. Overlaying this is the need to recognise the uncertainty that may be associated with the possible impacts, particularly during the initial risk assessment process. Where there is scientific uncertainty a cautious approach will identify a higher level of risk (worst-case scenario).

Each identifiable impact can be assigned likelihood between rare and almost certain (refer to Table D.5). In simplifying the possible impacts for the purpose of a risk assessment, an element of subjectivity is

introduced. The purpose of the risk assessment is not necessarily to agree on the probability of any particular impact, but to facilitate an understanding of the relative probability of different impacts.

Table D.5 Likelihood and probability of occurrence

| Likelihood | Description | Probability |
|---|---|---|
| Almost Certain | Expected to occur | >85% |
| Likely | Probably will occur | 50-85% |
| Possible | May occur | 21-49% |
| Unlikely | Not expected to occur in most circumstances | 1-20% |
| Rare | May occur in exceptional circumstances | <1% |

### 1.2.3 Environmental risk assessment matrix

Based on the assessment of consequence and likelihood any foreseeable impact can be assigned a risk level. This determines the significance of the environmental risk associated with a given impact. Table D.6 to be read as a matrix, with increasing consequence left to right and decreasing likelihood top to bottom.

Table D.6 Environmental risk assessment matrix

| | Consequence | | | | |
|---|---|---|---|---|---|
| **Likelihood** | **Not significant** | **Minor** | **Moderate** | **Major** | **Extreme** |
| **Almost Certain** | Medium | Medium | High | Very high | Very high |
| **Likely** | Low | Medium | High | High | Very high |
| **Possible** | Low | Medium | Medium | High | High |
| **Unlikely** | Low | Low | Medium | Medium | High |
| Rare | **Low** | **Low** | **Low** | **Medium** | **High** |

Very high impacts were considered the highest priority and were the focus of the concept design and environmental assessment. In general, the following was applied when scoping requirements for the environmental assessment.

- **Very high impacts** – Assessment and planning is necessary to avoid these impacts to the greatest extent possible.
- **High impacts** – Detailed specialist investigation and assessment is necessary to enable identification of appropriate management and mitigation options.
- **Medium impacts** –Further investigation as part of the environmental assessment is desirable, to address some uncertainties. Impacts could be mitigated through the application of relatively standard environmental mitigation measures.
- **Low impacts** – May not require specialist investigations, particularly where identifiable management/mitigation guidelines exist then potentially only broad or desktop investigation is

necessary. Impacts could be mitigated through other working controls (such as detailed design requirements, normal working practice, safety and quality controls).

## 1.3 Residual environmental risk assessment

Using the risk framework discussed in section 1.2 a residual environmental risk assessment was undertaken for the construction and operation of the project and is presented in Table 3.1. The residual environmental risk assessment included consideration of the impact assessment undertaken as part of the EIS, including the detailed specialist assessments, where available. This enabled the preliminary risk analysis to be refined and to also take into account available mitigation measures, hence representing an analysis of residual risks. The assessment was based on evidence, previous experience and professional judgement of potential risks, and their consequence, likelihood and significance (without mitigation).

No impacts were identified as having a high residual risk following implementation of the environmental management approach and mitigation measures proposed in section 22.2 and 22.3. The risk analysis has identified that the following issues would have medium residual risks:

- **Traffic, transport and access -** specifically impacts to property access and delays and/or reduced access to road users (including pedestrians/cyclists) due to construction activities and impacts to parking during construction and operation.
- **Biodiversity** – specifically impacts associated with the removal of a limited amount of vegetation particularly around Cabramatta Creek.
- **Noise and vibration** – specifically noise from construction activities including out of hours works.
- **Aboriginal heritage** – specifically potential impacts on unidentified items or places of Aboriginal heritage significance.
- **Visual amenity** –due to the introduction of built elements, including the new noise wall and embankment, and the removal of vegetation along Broomfield Street, Cabramatta Creek and in Jacquie Osmond Reserve.
- **Land use and property** – temporary impacts on users of Jacquie Osmond Reserve and Warwick Farm Recreational Reserve and impacts due to partial property acquisition.
- **Socio-economic** –temporary impacts to users of community recreational facility and amenity impacts during operation due to increased trains.
- **Health and safety** – safety hazards to road users (including pedestrians and cyclists) due to construction activities.

For the majority of these impacts the risk ranking was high prior to mitigation, indicating that implementation of the environmental management approach and mitigation measures proposed in this EIS would effectively minimise the impacts associated with the project.

Table D.7 Residual environmental risk assessment

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| **Transport and traffic – Construction** | Road network impacts, including temporary delays to local traffic due to diversions and shut downs | Almost Certain | Moderate | High | Refer to section 22.3 | Almost Certain | Minor | Medium |
| | Congestion in surrounding road networks due to diversion of road users during construction | Almost Certain | Moderate | High | Refer to section 22.3 | Almost Certain | Minor | Medium |
| | Reduced pedestrian and cyclist access due to works on the shared path | Almost Certain | Moderate | High | Refer to section 22.3 | Likely | Minor | Medium |
| | Impacts to existing parking spaces on the western side of Broomfield Street due to the works encroaching in this area | Almost Certain | Moderate | High | Refer to section 22.3 | Almost Certain | Minor | Medium |
| | Impacts to emergency services through delays in access due to works | Possible | Moderate | Medium | Refer to section 22.3 | Unlikely | Major | Medium |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| | Construction staff parking resulting in impacts to street parking | Almost Certain | Moderate | High | Refer to section 22.3 | Unlikely | Moderate | Medium |
| | Impacts to land owners and occupiers due to property access restrictions | Almost Certain | Moderate | High | Refer to section 22.3 | Possible | Moderate | Medium |
| **Transport and traffic - Operation** | Permanent loss of parking along Broomfield Street | Almost Certain | Moderate | High | Refer to section 22.3 | Almost certain | Not significant | Medium |
| | Additional maintenance activities due to loop - additional traffic, traffic noise, etc. | Likely | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| **Biodiversity - Construction** | Potential impacts on a limited amount of identified vegetation communities and/or threatened flora species, in particular in the vicinity of Cabramatta Creek | Almost Certain | Moderate | High | Refer to section 22.3 | Likely | Minor | Medium |
| | Potential impacts from tree removal along Broomfield Street and Jacquie Osmond Reserve | Almost Certain | Minor | Medium | Refer to section 22.3 | Possible | Minor | Medium |
| | Potential impacts on habitat due to vegetation removal | Almost Certain | Moderate | High | Refer to section 22.3 | Possible | Minor | Medium |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| | Indirect impacts due to increased dust, weeds, sedimentation and erosion, noise, light including disturbance to flying fox habitat | Almost Certain | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| **Biodiversity - Operation** | Impacts on fauna and habitat from noise and light during operation | Unlikely | Minor | Low | Refer to section 22.3 | Rare | Minor | Low |
| | Increased potential for pest plants and animals during maintenance from movement of vehicles, machinery and materials in and out of the rail corridor | Unlikely | Minor | Low | Refer to section 22.3 | Rare | Minor | Low |
| **Noise and vibration (amenity) - Construction** | Noise impacts on local residents and sensitive receivers from construction activities including out of hours works | Almost certain | Moderate | High | Refer to section 22.3 | Possible | Moderate | Medium |
| | Noise impacts on local residents and sensitive receivers from construction traffic | Likely | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| **Noise and vibration (amenity) - Operation** | Noise impacts on local residents and sensitive receivers from the operation of trains due to the loop (idling in loop, slowing down/accelerating into/out of loop, closer to receivers on loop) | Possible | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Impacts to new receivers due to change in noise wall from current | Almost certain | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| **Noise and vibration (structural) - Construction** | Damage to structures including heritage structures from vibration caused by construction activities | Possible | Moderate | Medium | Refer to section 22.3 | Unlikely | Moderate | Medium |
| **Air quality – Construction** | Generation of dust during construction (from exposed soil/stockpiles, excavation and vehicle movements) | Almost Certain | Minor | Medium | Refer to section 22.3 | Possible | Not significant | Low |
| | Emissions from vehicles or plant during construction | Likely | Minor | Medium | Refer to section 22.3 | Likely | Not significant | Low |
| | Odours/emissions from disturbance of contaminated soils | Unlikely | Minor | Low | Refer to section 22.3 | Rare | Minor | Low |
| | Generation of dust from transport of uncovered loads | Almost Certain | Minor | Medium | Refer to section 22.3 | Rare | Minor | Low |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| **Air quality - Operation** | Impacts on local air quality during operation from maintenance vehicle and train emissions | Unlikely | Not significant | Low | Refer to section 22.3 | Unlikely | Not significant | Low |
| **Soils (including site contamination and saline soils) - Construction** | Impacts associated with the disturbance of contaminated, ASS or soil salinity/saline soils during construction. | Possible | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Increased erosion and sedimentation due to excavation activities and vehicle movement | Likely | Moderate | High | Refer to section 22.3 | Rare | Moderate | Low |
| | Contamination of soils/groundwater due to spills and leaks during construction | Possible | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| **Soils (including site contamination and saline soils) - Operation** | Increased erosion and sedimentation due to excavation activities and vehicle movement during maintenance activities | Possible | Moderate | Medium | Refer to section 22.3 | Rare | Moderate | Low |
| | Contamination of soils/groundwater due to spills and leaks during maintenance | Unlikely | Moderate | Medium | Refer to section 22.3 | Rare | Moderate | Low |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| **Flooding - Construction** | Impact of flooding on unprotected areas during construction resulting in wash-outs or erosion | Possible | Moderate | Medium | Refer to section 22.3 | Rare | Minor | Low |
| | Temporary impact to the behaviour of local surface water systems during construction | Possible | Minor | Medium | Refer to section 22.3 | Possible | Not significant | Low |
| **Flooding - Operation** | Presence of or change to structures associated with the project could impact upstream and downstream local flood behaviour (including bridges and changes to drainage infrastructure) | Likely | Moderate | High | Refer to section 22.3 | Rare | Moderate | Low |
| **Water (hydrology) - Construction** | Changes to flow patterns and altered hydrology due to construction in Cabramatta Creek | Possible | Moderate | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Blockages of flow paths affecting low flows through construction within Cabramatta Creek and through erosion and sedimentation control structures | Possible | Moderate | Medium | Refer to section 22.3 | Unlikely | Minor | Low |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| | Sedimentation and changes to geomorphology (aggradation in bed channels) in Cabramatta Creek | Possible | Major | High | Refer to section 22.3 | Unlikely | Minor | Low |
| **Water (hydrology) - Operation** | Impacts on upstream and downstream drainage due to the introduction of built structures such as embankment and bridges | Possible | Major | High | Refer to section 22.3 | Rare | Moderate | Low |
| **Water (water quality) - Construction** | Reduced water quality (increased TSS and turbidity) due to earthworks and erosion and sedimentation near watercourses | Possible | Moderate | Medium | Refer to section 22.3 | Rare | Moderate | Low |
| | Impacts on water quality from contamination from spills and leaks during construction | Unlikely | Moderate | Medium | Refer to section 22.3 | Rare | Minor | Low |
| | Impacts on water quality from discharge of excess water from dewatering | Possible | Moderate | Medium | Refer to section 22.3 | Rare | Minor | Low |
| **Water (water quality) – Operation** | Potential for pollution of Cabramatta Creek due to operation (freight materials, contaminants from train operation) | Unlikely | Minor | Low | Refer to section 22.3 | Rare | Minor | Low |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| | Modification to existing drainage infrastructure resulting in water quality impacts | Possible | Moderate | Medium | Refer to section 22.3 | Rare | Minor | Low |
| | Impacts on water quality from contamination from spills and leaks during operation/maintenance | Unlikely | Moderate | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Impact to surface water quality and receiving environments due to increased runoff from minor increase in impervious surfaces | Possible | Minor | Medium | Refer to section 22.3 | Rare | Not significant | Low |
| **Aboriginal heritage – Construction** | Disturbance of known or unidentified items or places of Aboriginal heritage significance | Possible | Major | High | Refer to section 22.3 | Unlikely | Moderate | Medium |
| **Non-Aboriginal – Construction** | Design that detracts from the heritage significance of nearby items | Possible | Moderate | Medium | Refer to section 22.3 | Unlikely | Minor | Low |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| | Impacts on listed heritage items or items with heritage values due to demolition, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment | Possible | Moderate | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Damage to heritage items from vibration during construction | Possible | Major | High | Refer to section 22.3 | Rare | Moderate | Low |
| | Disturbance of known or unidentified items or places of non-Aboriginal heritage significance | Unlikely | Major | Medium | Refer to section 22.3 | Rare | Moderate | Low |
| **Non-Aboriginal – Operation** | Change to the aesthetic significance of nearby heritage items due to the presence of introduced structures blocking or obscuring views | Possible | Moderate | Medium | Refer to section 22.3 | Rare | Moderate | Low |
| | Damage to heritage items from vibration during operation | Possible | Major | High | Refer to section 22.3 | Rare | Moderate | Low |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| **Visual amenity - Construction** | Impacts to nearby residents and users of recreational areas due to the presence of construction compounds and activities | Likely | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Light impacts from out-of-hours work during construction | Possible | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Adverse impacts on landscape character during construction | Possible | Moderate | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| **Visual amenity - Operation** | Impacts on visual amenity due to the introduction of built elements, including the new noise wall and embankment, and the removal of vegetation along Broomfield Street, Cabramatta Creek and in Jacquie Osmond Reserve | Almost certain | Moderate | High | Refer to section 22.3 | Likely | Minor | Medium |
| | Visual impact of operational lighting | Unlikely | Minor | Low | Refer to section 22.3 | Unlikely | Minor | Low |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| **Land use property – Construction** | Temporary impacts on land use during construction including impacts to neighbouring residential properties and users of Jacquie Osmond Reserve and Warwick Farm Recreational Reserve. Impacts include reduced access and reduced amenity. | Likely | Moderate | High | Refer to section 22.3 | Likely | Minor | Medium |
| | Impacts on services and utilities during construction resulting in a loss of services. | Likely | Moderate | High | Refer to section 22.3 | Rare | Moderate | Low |
| | Impacts on land use as a result of property acquisition | Almost certain | Moderate | High | Refer to section 22.3 | Likely | Minor | Medium |
| **Land use and Property - Operation** | Severance of properties (Peter Warren Automotive) resulting in smaller lot sizes that may impact on use. | Likely | Minor | Medium | Refer to section 22.3 | Likely | Minor | Medium |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| **Socio-economic - Construction** | Positive impacts due to job creation | | | | Benefit | | | |
| | Increased trade for food during construction | | | | Benefit | - | - | - |
| | Impacts on the use and functionality of community facilities, including Jacquie Osmond Reserve and Warwick Farm Recreation Reserve | Almost Certain | Moderate | High | Refer to section 22.3 | Almost certain | Minor | Medium |
| | Amenity impacts (noise, air, traffic, visual) to nearby residential receivers and users of recreational grounds | Almost Certain | Moderate | High | Refer to section 22.3 | Unlikely | Minor | Medium |
| **Socio-economic Operation** | Positive economic impacts due to enhanced efficiencies and capacity for transporting goods | | | | Benefit | - | - | - |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| | Impacts to local amenity due to increased frequency of trains and visual and character changes along Broomfield Street and in Jacquie Osmond Reserve | Likely | Moderate | High | Refer to section 22.3 | Likely | Minor | Medium |
| **GHG and Climate change – Construction** | Increased electricity and fuel use during construction | Almost Certain | Minor | Medium | Refer to section 22.3 | Likely | Not significant | Low |
| | Increased demand on local and regional resources during construction | Almost Certain | Minor | Medium | Refer to section 22.3 | Likely | Not significant | Low |
| | Greenhouse gas emissions from combustion of fuels during plant/vehicle operation | Almost Certain | Minor | Medium | Refer to section 22.3 | Likely | Not significant | Low |
| | Increased energy consumption associated with the operation of site compounds | Almost Certain | Minor | Medium | Refer to section 22.3 | Likely | Not significant | Low |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| **GHG and Climate change risk – Operation** | Increase in efficiency of transportation of freight goods | Benefit | | | | | | |
| | Greenhouse gas emissions due to operation of the rail line, predominantly burning of diesel. | Likely | Minor | Medium | Refer to section 22.3 | Likely | Not significant | Low |
| | Impacts to infrastructure due to extreme weather events | Unlikely | Major | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| **Waste - Construction** | Inappropriate management of waste generated during construction resulting in excessive waste being directed to landfill | Possible | Moderate | Medium | Refer to section 22.3 | Rare | Minor | Low |
| **Waste - Operation** | Increased littering from maintenance teams | Rare | Not significant | Low | Refer to section 22.3 | Rare | Not significant | Low |
| **Health and safety - Construction** | Impacts from transport, storage and use of hazardous substances and dangerous goods | Possible | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Reduced safety for road users, cyclists and pedestrians during construction particularly in the vicinity of houses and shared path. | Likely | Major | High | Refer to section 22.3 | Possible | Minor | Medium |

| Key issue | Potential impact/risk | Initial risks | | | Comment/response | Post mitigation risks | | |
|---|---|---|---|---|---|---|---|---|
| | | Likelihood | Consequence | Risk rating | | Likelihood | Consequence | Risk rating |
| | Adverse health from noise and air pollution during construction | Possible | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Potential rupture of utilities during works | Rare | Minor | Low | Refer to section 22.3 | Rare | Minor | Low |
| | Safety impacts due to the presence of construction activities (moving vehicles etc) particularly within recreational areas and near Lawrence Hargrave Special Education School. | Possible | Major | High | Refer to section 22.3 | Unlikely | Minor | Low |
| **Health and safety – Operation** | Impact from spill or accident during the transport, storage and use of hazardous substances and dangerous goods | Unlikely | Moderate | Medium | Refer to section 22.3 | Rare | Moderate | Low |
| | Increased safety risks due to changes to infrastructure (eg additional length of shared path under bridge) | Possible | Moderate | Medium | Refer to section 22.3 | Unlikely | Minor | Low |
| | Adverse health from noise during operation | Possible | Minor | Medium | Refer to section 22.3 | Unlikely | Minor | Low |

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# APPENDIX E

## PROJECTS WITH POTENTIAL FOR CUMULATIVE IMPACTS

ENVIRONMENTAL IMPACT STATEMENT

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# E. PROJECTS WITH POTENTIAL FOR CUMULATIVE IMPACTS

For an environmental impact statement, cumulative impacts can be defined as the successive, incremental, and combined effect of multiple impacts, which may in themselves be minor, but could become significant when considered together.

The assessment of potential cumulative impacts has been undertaken in accordance with the SEARs, and considers the potential for impacts taking into account other projects in close proximity to the project (referred to as the 'Cabramatta Loop project for the purpose of this chapter). The assessment draws on the findings of Chapters 8 to 21, and environmental impact assessments for other projects, where these are available.

The potential for cumulative impacts for each environmental issue is considered in each of the key issue chapters (refer to Chapters 8 to 21) and considers the projects listed in Table E.1 where relevant to the environmental issue.

## Methodology

The following tasks were undertaken to assess the potential for cumulative impacts:

- identifying existing (approved or under construction) and proposed projects in the vicinity of the Sydenham to Bankstown upgrade, based on information available in the public domain
- screening identified projects for their potential to interact with the Cabramatta Loop project
- identifying and assessing the significance of potential cumulative impacts by:
- considering project-specific impacts for the key projects with the potential for cumulative impacts when combined with the construction and/or operation of the Cabramatta Loop project (refer to Chapters 8 to 21)
- undertaking an issue-specific cumulative assessment for the key environmental issues listed in the SEARs (refer to Chapters 8 to 21).

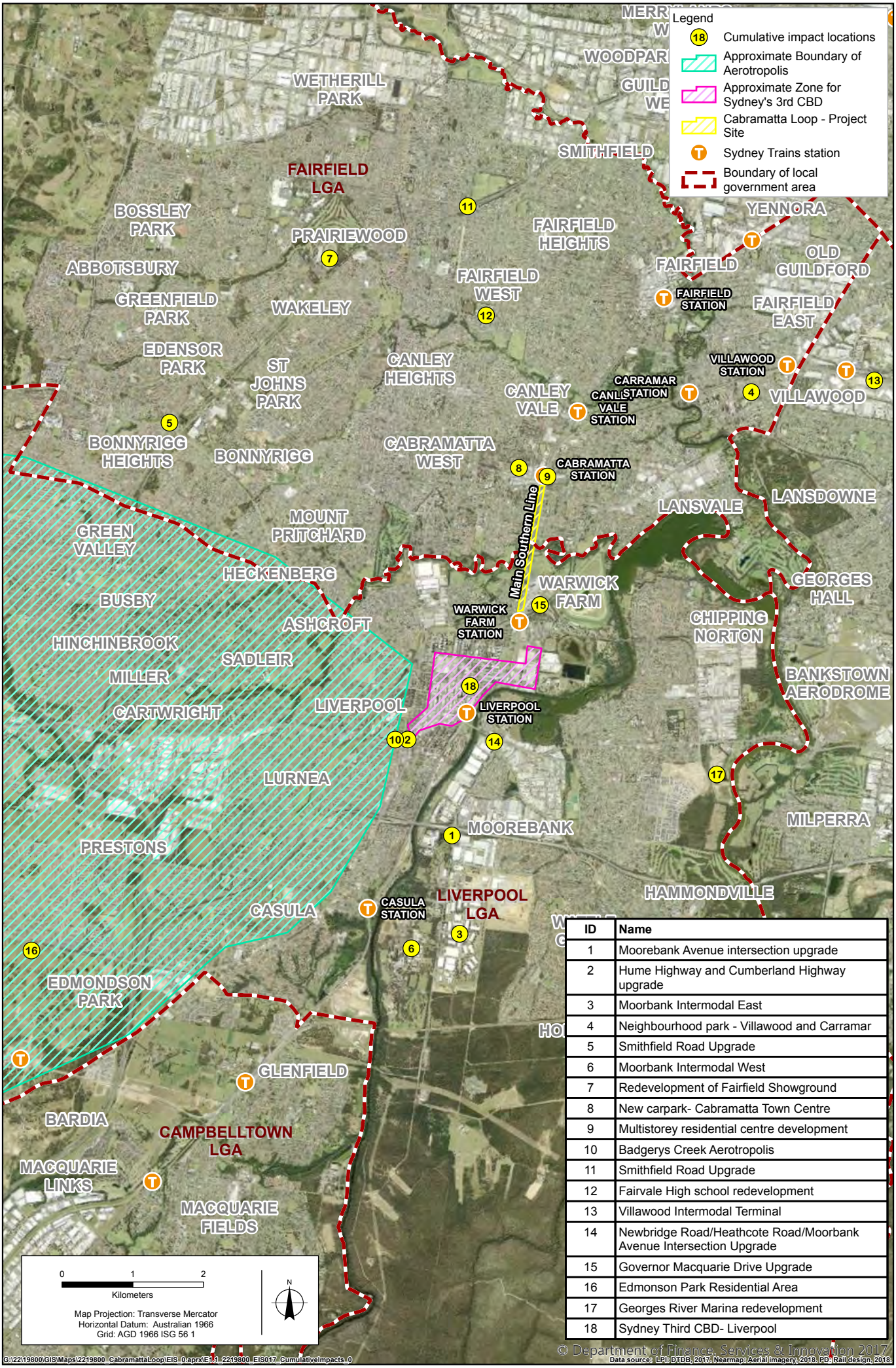
The screening of projects took into account the following:

- The project location – projects in close proximity to the Cabramatta Loop project where there is potential for impacts to spatially overlap. This included potential for shared use of roads for construction access, for example.
- The project timeframe and planning approval – only projects likely to be built concurrently with the Cabramatta Loop Project were assessed. This includes projects currently under construction and/or projects that have received planning approval. Projects at a conceptual or pre-approval stage were generally not able to be considered due to an absence of project and/or environmental impact details or development timeframes.
- The project size – projects considered are typically larger scale projects identified on the Department of Planning, Industry and Environment's Major Projects Register and council development application registers.
- Projects considered to have the potential for cumulative impacts with the Cabramatta Loop project are listed in Table E.1, and are shown in Figure E.

Table E.1 Projects with the potential for cumulative impacts

| Project | Proponent | Type | Status | LGA | Approx. distance from the proposal site (km) |
|---|---|---|---|---|---|
| **Existing projects** | | | | | |
| Moorebank Intermodal West | Moorebank Intermodal Company (MIC)- Australian government entity | Rail transport facilities | Existing | Liverpool | 5.0 km south |
| Moorebank Intermodal East | Moorebank Intermodal Company (MIC)- Australian government entity | Rail transport facilities | Existing | Liverpool | 4.59 km south |
| Sydney Third CBD | Liverpool City Council | Urban renewal | Existing | Liverpool | 0.7 km south |
| Georges River Marina | Liverpool City Council | Marine development | Existing | Liverpool | 3.4 km south east |
| Development proposal for a multistorey residential centre at the corner of Broomfield Street and Cabramatta Road. | Moon Investments<br>Star Dust Hotels | Urban renewal | Existing- 2021 | Fairfield | East- adjacent to Cabramatta Station |
| New car park proposed in Cabramatta town centre | Fairfield City Council | Urban renewal | Existing- 2020 | Fairfield | 0.3 km west |
| Redevelopment of Fairfield showground | Fairfield City Council | Facility redevelopment | Existing- 2020 | Fairfield | 4.2 km north west |
| **Future projects** | | | | | |
| Smithfield Road upgrade | Fairfield City Council | Transport- road upgrade | Proposed mid 2019 | Fairfield | 5.0 km west |
| Neighbourhood park for Villawood and Carramar | Fairfield City Council | Public open space renewal | Proposed | Fairfield | 3.4 km north east |
| Fairvale High school | Fairfield City Council | Education | Proposed | Fairfield | 2.5 km north west |
| Badgerys Creek Aerotropolis | University of Wollongong<br>Western Sydney University<br>University of Newcastle<br>University of NSW | Education | Proposed | Liverpool | 2.2 km south west |
| Villawood Intermodal Terminal | Unknown | Transport and storage infrastructure | Proposed | Canterbury/ Bankstown | 4.9 km north east |

| Project | Proponent | Type | Status | LGA | Approx. distance from the proposal site (km) |
|---|---|---|---|---|---|
| Moorebank Voluntary Planning Agreement<br>New bridge Road/Heathcote Road/Moorebank Avenue intersection upgrade | Qube Holdings<br>RMS | Transport infrastructure | Proposed | Liverpool | 1.8 km south |
| Moorebank Voluntary Planning Agreement<br>Governor Macquarie Drive Upgrade | Qube Holdings<br>RMS | Transport infrastructure | Proposed | Liverpool | 0.2 km east to 3.0km south east |
| Moorebank Voluntary Planning Agreement<br>Sections of the M5 Motorway, Hume Highway and Cumberland Highway | Qube Holding<br>RMSs | Transport infrastructure | Proposed | Liverpool/Fairfield | Various locations surrounding project |
| Moorebank Voluntary Planning Agreement<br>Moorebank Avenue South | Qube Holding<br>RMSs | Transport infrastructure | Proposed | Liverpool | 3.3 km south |




| ID | Name |
|---|---|
| 1 | Moorebank Avenue intersection upgrade |
| 2 | Hume Highway and Cumberland Highway upgrade |
| 3 | Moorbank Intermodal East |
| 4 | Neighbourhood park - Villawood and Carramar |
| 5 | Smithfield Road Upgrade |
| 6 | Moorbank Intermodal West |
| 7 | Redevelopment of Fairfield Showground |
| 8 | New carpark- Cabramatta Town Centre |
| 9 | Multistorey residential centre development |
| 10 | Badgerys Creek Aerotropolis |
| 11 | Smithfield Road Upgrade |
| 12 | Fairvale High school redevelopment |
| 13 | Villawood Intermodal Terminal |
| 14 | Newbridge Road/Heathcote Road/Moorbank Avenue Intersection Upgrade |
| 15 | Governor Macquarie Drive Upgrade |
| 16 | Edmonson Park Residential Area |
| 17 | Georges River Marina redevelopment |
| 18 | Sydney Third CBD- Liverpool |



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Figure E1.1 Cumulative impacts

# CABRAMATTA LOOP PROJECT

## ENVIRONMENTAL IMPACT STATEMENT

**VOLUME** 1 — MAIN REPORT