Transport for NSW

Chapter 23
Approach to environmental management and mitigation

NSW GOVERNMENT

Contents

Tables

Figures

23. Approach to environmental management and mitigation

This chapter provides a summary of the proposed approach to environmental management and mitigation for the project. The chapter also provides a summary of key project and assessment uncertainties, and the proposed approach to design refinements.

23.1 Approach to environmental management

Transport for NSW, and its responsible contractors, manage their environmental responsibilities and environmental performance consistent with the principles contained within the ISO 14000 (environmental management) series and standards. This includes establishing a corporate environmental policy, setting environmental direction through objectives and targets, integrating these into work systems, and providing measures for continuous improvement.

Transport for NSW's Environment and Sustainability Policy outlines the agency's commitment to effectively manage any risks that may lead to an impact on the environment.

Should the project be approved, Transport for NSW would manage the environmental performance of the project in accordance with these policies and standards, and the approach to environmental management demonstrated on other recent major transport infrastructure projects, including Parramatta Light Rail Stage 1, Sydney Metro City & Southwest and Sydney Gateway.

The approach to environmental management and mitigation for the project, building on the measures incorporated in the design, involves:

- environmental management systems, which would provide the framework for implementing environmental management during construction and operation (described below), and any conditions of other approvals, licences, or permits
- mitigation measures – measures provided in the chapters in Part C of the EIS (and compiled within Appendix K (Consolidated mitigation measures)) have been developed as an outcome of the environmental impact assessment (see section 23.2)
- conditions of approval – the project would be undertaken and managed in accordance with the conditions of approval
- project-specific CEMP – to guide the approach to environmental management during construction as described in section 23.1.1
- environmental management during operation – as described in section 23.1.2.

23.1.1 Construction environmental management

Key construction environmental management documentation, which would be prepared in accordance with the planning approval and mitigation measures (see section 23.2), is described below.

Construction environmental management approach

The general approach to environmental management during construction would include developing the CEMP as the primary project-specific environmental management plan (described below). The CEMP would include sub-plans that would outline the mitigation, management and monitoring requirements for specific environmental and community aspects (as shown in Figure 23.1). Some sub-plans may be combined where there are synergies in the impacts or requirements.

In addition to the CEMP, and its sub-plans, a number of other strategies and plans would be developed and implemented during construction to manage environmental and community impacts in accordance with the mitigation measures (see section 23.2). These additional strategies and plans are shown on Figure 23.1.

A construction environmental management framework may be prepared to facilitate the preparation and approval of the environmental management plans and strategies shown on Figure 23.1. The framework would:

- identify the sub-plans, strategies and monitoring requirements for each stage of construction
- provide a risk assessment of the predicted level of environmental and social risk, including the potential level of community concern posed by each construction stage
- nominate the consultation and approval level for the plans, strategies and monitoring documents for each construction stage
- nominate the use of alternate management processes (such as construction method statements) for low-risk construction activities (where appropriate).

Figure 23.1 Construction environmental management – indicative plans and strategies

Construction environmental management plan

The management of environmental impacts during construction would be documented in a CEMP, which would provide a centralised mechanism through which all potential construction-related environmental impacts would be managed. The CEMP would be prepared in accordance with *Environmental Management Plan Guideline for Infrastructure Projects* (DPIE, 2020d) and I*ndependent Audit Post Approval Requirements* (DPIE, 2020e).

The CEMP would provide the system and procedures to ensure that environmental impacts are minimised, and that legislative and approval requirements are fulfilled. The CEMP would include:

- the environmental policy, objectives, and performance targets for construction
- description of activities to be undertaken during construction
- reference to relevant statutory and other obligations, including consents, licences, approvals, permits and voluntary agreements required
- issue-specific sub plans that detail how construction activities would be managed and monitored to avoid or minimise impacts, including the type, location and timing of environmental controls (described below)
- processes for managing non-conformances, including identifying and implementing corrective and preventative actions to rectify the non-conformance and prevent recurrence (described below)
- processes for demonstrating compliance with the commitments made in the EIS and relevant approval conditions
- responsibilities for planning, implementing, maintaining and monitoring environmental controls including the responsibilities of sub-contractors
- procedures for the control of environmental records
- a compliance tracking and auditing program.

Outline of CEMP sub-plans

The CEMP would comprise a main CEMP document, issue-specific sub-plans and procedures. An outline of the indicative construction sub-plans (shown on Figure 23.1), and a guide to the general construction management measures required in each, is provided in Appendix J (Outline CEMP).

The requirement to prepare these sub-plans is specified by the mitigation measures in relevant chapters, which have been compiled in Appendix K (Consolidated mitigation measures) (see section 23.2). It is noted that the conditions of approval may require different and/or additional matters to be addressed in the CEMP or sub-plans.

Environmental performance

The management measures detailed in the CEMP would be monitored during construction to confirm their effectiveness and whether any additional measures are required. Site inspections would be regularly undertaken to check and update measures as necessary. Environmental site monitoring would also be undertaken to confirm project impacts and existing environmental values in accordance with monitoring commitments made in this document.

The CEMP would provide for an internal compliance monitoring program where the construction contractor(s) would periodically monitor and report on project performance against relevant statutory and other obligations, including the conditions of approval. Independent external audits would also be carried out in accordance with *Independent Audit Post-Approval Requirements* (DPIE, 2020e) and Australian/New Zealand Standard *AS/NZS ISO 19011:2003 – Guidelines for quality and/or environmental management systems auditing*.

An environmental representative would be engaged by Transport for NSW to undertake an independent compliance monitoring role for the project.

Non-conformance and corrective action

For any environmental issues that arise, corrective and preventative actions must be implemented. Corrective and preventative actions may be developed to address issues or initiate environmental management improvement opportunities identified as a result of incidents, inspections and monitoring, audit findings and other reviews.

Incidents would be managed in accordance with Transport for NSW's *Environmental Incident Procedure EMF-EM-PR-0001* (Transport for NSW, 2021d).

The CEMP would document the development and implementation of corrective and preventative actions during construction.

Continual improvement

The CEMP and sub plans would be reviewed and updated as required, including in response to audit findings, compliance monitoring results, and incidents and inspections that identify corrective and preventative actions. This would include an annual review conducted by the contractor(s) as part of the continual improvement process.

23.1.2 Operational environment management

An Operational Environmental Management System would be prepared to detail how the performance outcomes, issues identified through ongoing risk analysis, commitments and mitigation measures (see section 23.2) would be applied. The Operational Environmental Management System would include approaches to managing operations during special events, compliance auditing and incident management.

23.2 Mitigation measures

Appendix K (Consolidated mitigation measures) provides a compilation of the measures proposed to mitigate and manage the potential impacts of the project, as detailed in the impact assessment chapters in Part C of the EIS (Chapters 9 to 22). These are Transport for NSW's commitments to avoiding and minimising the potential impacts of the project as far as practicable.

Measures are grouped according to each environmental aspect, with sub-groupings provided for design, construction and operation. The design measures provide the commitments for design development. Construction measures include those relating to construction planning and the development of the strategies and plans that will be implemented during construction. Operation measures will be implemented during the operational stage to avoid and minimise potential impacts during operation and maintenance of the project.

The mitigation measures may be revised in response to submissions raised during public exhibition of the EIS. The final list of mitigation measures will be provided in the submissions report.

If the project is approved, the conditions of approval, which would include reference to the finalised mitigation measures, would guide the preparation and content of relevant sub-plans for the project stages. The project would be undertaken in accordance with the conditions of approval and the final list of mitigation measures.

23.3 Project uncertainties and approach to design refinements

23.3.1 Project uncertainties

The design presented in this EIS has been developed to a level where potential impacts can be appropriately identified and assessed. Some design elements and construction methodologies would continue to be refined as part of the design development and construction planning process.

Design development and construction planning would continue to be informed by the design objectives and principles (as described in Technical Paper 1 (Design, Place and Movement)), the urban design requirements, mitigation measures, feedback from the community and stakeholders (including in submissions provided during public exhibition of the EIS), availability of improved technologies and materials, and value for money. The involvement of a project-specific Design Review Panel (see section 5.6) would allow for consistently high-quality outcomes throughout the design process.

Aspects of the design, and the associated potential impacts, that may be subject to further refinement are summarised in Table 23.1.

Table 23.1 Project uncertainties

Uncertainty	Proposed resolution	Timing
Assessment matters		
Final noise mitigation requirements	The project would continue to be refined during design development to minimise the potential for operational noise and vibration impacts. This would include iterative design and modelling to identify feasible and reasonable mitigation measures. An operational noise and vibration review would be undertaken to confirm noise and vibration predictions based on the final design and the effectiveness of proposed mitigation. Further information is provided in section 10.7.	Design
Presence of Aboriginal archaeology	Transport for NSW will complete a survey of properties in Melrose Park that are considered to have the potential for Aboriginal archaeology, should it be confirmed they would be impacted by the project and once property access can be arranged. Transport for NSW is undertaking a program of archaeological testing to establish the extent and nature of any archaeological deposits associated with the seven identified PADs within the project site (and the Camellia foreshore to Rydalmere option) to inform the next stages of design and minimise the potential impacts as far as practicable. If archaeological testing confirms that a PAD contains Aboriginal objects, options to modify the design and avoid or minimise areas of potential disturbance (where practicable) would be investigated during design development and construction planning. Unavoidable impacts would be managed in consultation with registered Aboriginal parties and in accordance with the mitigation measures provided in section 11.6. Depending on the results of the test excavations, it may also be appropriate to undertake salvage excavations at some or all of these sites. If salvage is required, it would be undertaken in accordance with a detailed salvage methodology, which would be prepared by a suitably qualified archaeologist in consultation with relevant registered Aboriginal parties. Further information is provided in section 11.6.	During/post EIS exhibition

Uncertainty	Proposed resolution	Timing
Presence and significance of historical archaeological resources	A test excavation program guided by an Archaeological Research and Excavation Framework (see Appendix B of Technical Paper 6 (Historical Archaeological Assessment)) would target areas with medium to high potential for archaeological remains of State significance or high potential for local significance, where ground disturbing works are proposed (mitigation measure NAH3). Following this a detailed Research Design and Excavation Methodology would be prepared including details of appropriate management based on the rating system outlined in Technical Paper 6. Further information is provided in section 12.6 (see mitigation measures NAH1 and NAH2).	During/post EIS exhibition
Considering the need to revisit flood modelling based on City of Parramatta Council's revised flood plan once it becomes publicly available	Further flood modelling would be undertaken to refine the impacts identified by the EIS depending on when the City of Parramatta Council's updated flood model becomes available (noting it is not currently publicly available at the time of finalisation of this EIS). If undertaken, further modelling would be incorporated into the flood management strategy. Further information is provided in section 17.6.	Design
Location and degree of contamination	A contamination investigation is currently underway across the project site to provide further information regarding the presence of contamination. The results of this assessment would be used to inform required actions and the need for further detailed assessment and/or remediation. If required, remediation action plans would be developed to manage contamination during construction. Further information is provided in section 18.6.	Design and construction planning
Design features		
Light rail alignment between Camellia and Rydalmere and at Wharf Road, Melrose Park	Design development (including stakeholder engagement) is ongoing in relation to the light rail alignment between Camellia and Rydalmere across the Parramatta River (see section 5.6). An initial screening of an alternative alignment option is provided in Appendix D (Camellia foreshore to Rydalmere option – preliminary environmental scoping). At Wharf Road, discussions are ongoing with utility providers in relation to the feasibility of relocating the electricity transmission towers that constrain the location of the bridge between Melrose Park and Wentworth Point and associated road and open space adjustments. Any change to the project to incorporate these or other refinements would be developed in consultation with relevant stakeholders.	Design
Open space and recreation facilities to be provided at Ken Newman Park, Atkins Road stop plaza, and Archer Park	Concept plans have been prepared for the proposed new open space and improvements which would be provided as part of the project. Public exhibition of the EIS would provide an opportunity for community comment on the concept plans and plans to repurpose some residual land. Transport for NSW would continue to consult with the City of Parramatta Council, the project-specific Design Review Panel and key stakeholders as the designs are further developed. Feedback received would be considered in design development, and the design of these areas of open space would evolve in response to engagement. Further information is provided in section 6.8.	Design
Design adjustments identified during the Connecting and Designing with Country process	The project is embedding Country-led collaboration and design into the ongoing development of the project, embracing an Aboriginal co-design approach to deliver positive community and placemaking benefits (see Technical Paper 1 (Design, Place and Movement)). The Connecting with Country process would occur in line with Transport for NSW's Aboriginal co-design principles. The process would integrate with the project's Aboriginal Engagement Plan and respond to recommendations of Technical Paper 4 (Preliminary Aboriginal Cultural Heritage Assessment Report) to provide integrated, Country-centred outcomes.	Design

Uncertainty	Proposed resolution	Timing
Design improvements identified by the project-specific Design Review Panel	A comprehensive set of urban design requirements is being developed in consultation with key stakeholders to guide design development and ensure high quality design and place outcomes are achieved. The purpose of the project-specific Design Review Panel would be to provide independent design excellence advice through the stages of design development, assess whether it is consistent with the commitments and outcomes in Technical Paper 1 (Design, Place and Movement), and provide advice on the application of these commitments and outcomes to key design elements.	Design
Design refinements facilitated by further utilities investigation (i.e. as scope of existing utilities becomes clearer)	The location of all utilities and services, and requirements for protection and adjustments, would be confirmed prior to construction in consultation with utility providers. This would include (as required) undertaking utilities investigations, including intrusive investigations, and consultation and agreement with utility providers on proposed protection and adjustments. Further consultation would be undertaken with utility providers to refine and confirm changes and manage the proposed staging of work.	Design
Refinement of bridge designs resulting from delivery innovation	The bridge designs would continue to be refined during design development. The final bridge designs would be developed in accordance with the urban design requirements and in consultation with the project-specific Design Review Panel and key project stakeholders.	Design
Integration with proposed future developments (such as in Melrose Park, Wentworth Point, Camellia and the Carter Street precinct)	The project would continue to be designed to integrate with existing and future land uses, including structure and master planning, for the identified urban renewal areas. Transport for NSW would continue to liaise with relevant stakeholders, including developers of properties adjoining the project site, to manage the interface between the project, adjoining properties and future land uses, and minimise the potential for impacts as far as practicable.	Design
Active transport link integration with Dawn Fraser Avenue pedestrianisation	Consultation with Sydney Olympic Park Authority would be ongoing to ensure that the design of the project is integrated with existing and future development and planning for Sydney Olympic Park.	Design
Location of driver facilities in the Parramatta CBD	The final location of driver facilities would be confirmed during design development in consultation with the City of Parramatta Council.	Design
Construction		
Construction method and staging of bridges over the Parramatta River, including duration of waterway closures	The final construction methodology would be confirmed by the construction constructor(s) in consultation with relevant stakeholders. Impacts on navigation and access along the river would be managed in accordance with the maritime works and navigation management plan, (see section 9.6). The approach to managing potential changes to hydrodynamic processes within the river, and measures to minimise erosion, scour and destabilisation of the river banks, would be defined by the soil and water management plan (see section 17.6).	Construction planning
Construction staging of adjustments to Sydney Water trunk mains	All proposed works to Sydney Water's trunk mains would be undertaken in consultation with Sydney Water and confirmed during detailed construction planning.	Construction planning
Construction compounds (final compound locations)	The final selection of compound locations and the layout of compound sites, including parking for construction workers, would be confirmed by the construction contractor(s) based on the final design and construction methodology. Section 7.6.2 provides guidelines for locating additional or alternative compound sites, if required.	Construction planning

23.3.2 Approach to design refinements

The design and indicative construction method presented in the EIS (see Chapters 6 (Project description – infrastructure and operation) and 7 (Project description – construction)) defines a project that provides a sound basis for assessing the potential impacts of the project (as described in this EIS) and future design development to the standard required to support project delivery. Sufficient flexibility has been provided to allow for the design to be refined during design development, where relevant, to improve environmental performance, minimise impacts on the community and the environment, respond to feedback from the community and stakeholders, provide value for money, and respond to innovations in design, construction method and/or environmental management. As a result, the final design may vary from the design described in the EIS.

The project design as described in the EIS would be subject to ongoing refinements during design development, as described in section 5.6 and in accordance with the:

- mitigation measures (see Appendix K)
- design principles and objectives described in Technical Paper 1 (Design, Place and Movement)
- the conditions of approval.

Refinements may be made to further:

- avoid utilities that present significant construction difficulties in terms of logistics, time and/or cost
- reduce the construction timeframe
- avoid areas of environmental sensitivity identified following approval
- reduce impacts on the community
- respond to community and stakeholder feedback
- promote innovative outcomes and technological improvements
- provide improved value for money outcomes
- improve operation without increasing the potential environmental impacts.

Such refinements may include (for example) minor changes to:

- the location of construction compounds and work area accesses
- the location of key infrastructure, refinement or reorientation of project site boundaries
- technology or the features of key project components.

Refinements would not include significant changes to the project.

A consistency review would be undertaken for design refinements to consider whether the refinements would:

- comply with the conditions of approval
- be consistent with the objectives and operation of the project as described in the EIS
- result in a change to the approved project that is not considered significant
- result in potential environmental or social impacts of a similar scale and nature as those considered by this document.

If the proposed refinement is inconsistent with the above, it would be considered a project modification. Approval for any modifications would be sought in accordance with the requirements of Division 5.2 of the EP&A Act.