1 Introduction

1.1 Purpose of this report

This Modification Report (report) provides the environmental assessment for the proposed modification to the M4-M5 Link project) (the project) in accordance with Section 5.25 of *the Environmental Planning & Assessment Act 1979* (NSW) (EP&A Act). The proposed modification relates to the Rozelle Interchange stage of the project (Stage 2) and specifically, works at Iron Cove. This report includes:

- An overview of the approved project
- A description of the proposed modification to the approved project
- An assessment of the potential environmental impacts of the proposed modification
- Details of the changes to the conditions of the project approval required by the proposed modification
- Details of the changes to the approved environmental management measures required by the proposed modification
- Justification for the proposed modification.

The Environmental Impact Statement (EIS) described an electrical substation and ventilation exhaust facility located in separate buildings on the surface that together would comprise the Iron Cove Motorway Operations Complex 4 (MOC4). The proposed modification would relocate the MOC4 underground, including the electrical substation and ventilation facilities (the ventilation outlet would remain above ground in the same location). Only a switch room, high voltage regulators, an alternative Operational Motorway Control System (OMCS) room and a stair access leading down to the ventilation tunnel would be required on the surface. The proposed modification is described in section 1.6 and in more detail in Chapter 5 (Proposed modification).

1.2 Overview of WestConnex

WestConnex is one of the NSW Government's key infrastructure projects. The WestConnex program of works and the proposed Sydney Gateway project will facilitate improved connections between western Sydney, Sydney Airport, Port Botany and south and south-western Sydney, as well as better connectivity between the important economic centres along Sydney's Global Economic Corridor and local communities.

Separate planning applications and assessments have been completed for each of the approved WestConnex projects. NSW Roads and Maritime Services (Roads and Maritime) is the proponent for the program of works.

An overview of the WestConnex program of works is provided in Figure 1-1 and includes:

- **M4 Widening** – widening of the existing M4 Motorway from Parramatta to Homebush (open to traffic)
- **M4 East** – extension of the M4 Motorway in tunnels between Homebush and Haberfield via Concord (open to traffic)
- **King Georges Road Interchange Upgrade** – upgrade of the King Georges Road interchange between the M5 West and M5 East at Beverly Hills (open to traffic)
- **New M5** – duplication of the M5 East from King Georges Road at Beverly Hills with tunnels from Kingsgrove to a new interchange at St Peters (approved and under construction)
- **M4–M5 Link** – tunnels connecting to the M4 East at Haberfield and the New M5 at St Peters (approved and under construction)
- **M4-M5 Link** – Rozelle Interchange and Iron Cove Link (approved and under construction).

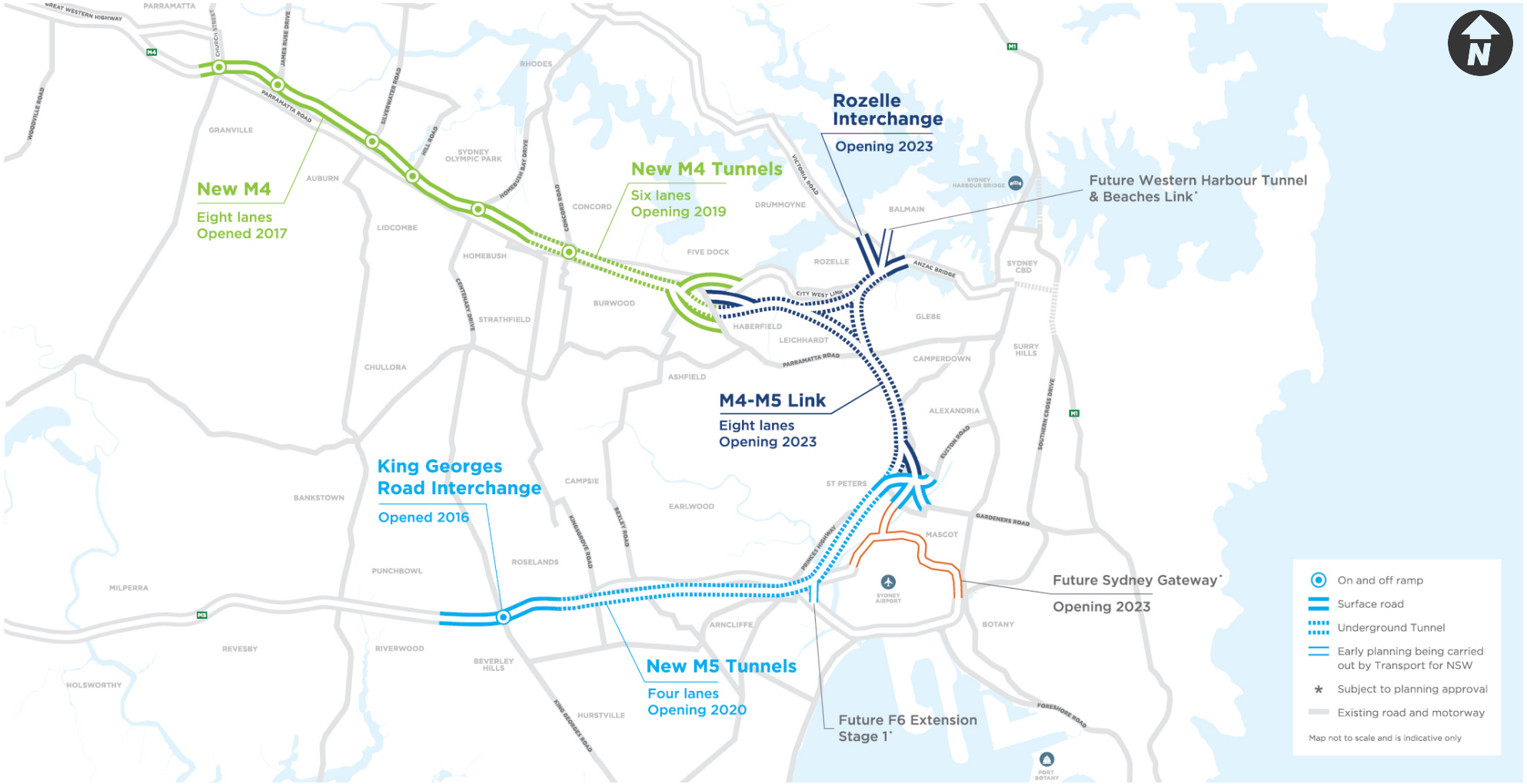

Figure 1-1 Overview of WestConnex and related projects (EIS figure 1-4)

1.3 M4-M5 Link project

Approval for the construction and operation of the project was granted on 17 April 2018 by the NSW Minister for Planning (application number SSI 7485). Figure 1-2 provides an overview of the approved project.

The EIS describes construction and operation of the project in two stages.

Stage 1 (also commonly referred to as Stage 3A of the WestConnex program of works), as described in the EIS included:

- Construction of the mainline tunnels between the M4 East Motorway at Haberfield and the New M5 Motorway at St Peters, stub tunnels to the Rozelle interchange (at the Inner West subsurface interchange) and ancillary infrastructure at the Darley Road motorway operations complex (MOC1), which was subsequently removed (refer to section 1.4), and the Campbell Road motorway operations complex (MOC5).
- These works commenced in 2018 with the mainline tunnel anticipated to be open to traffic in 2022.

Stage 2 (also commonly referred to as Stage 3B of the WestConnex program of works), as described in the EIS, included:

- Construction of the Rozelle Interchange and Iron Cove Link including connection to the stub tunnels at the Inner West subsurface interchange, connection to the surface road network at Lilyfield and Rozelle, and construction of tunnels, ramps and associated infrastructure as part of the Rozelle Interchange to provide connections to the proposed future Western Harbour Tunnel and Beaches Link project. Ancillary infrastructure will be provided at the Rozelle West motorway operations complex (MOC2), the Rozelle East motorway operations complex (MOC3) and the MOC4.
- Stage 2 works commenced in 2019 with these components of the project anticipated to be open to traffic in 2023.

The M4-M5 Link project is part of the WestConnex program of works that, together with the proposed future Sydney Gateway, would facilitate improved connections between western Sydney, Sydney Airport and Port Botany and south and south-west Sydney, as well as better connectivity between the important economic centres along Sydney's Global Economic Corridor and through local communities.

A more comprehensive overview of the M4-M5 Link project, as well as other aspects of the WestConnex program of works, is provided within the EIS and the Submissions and Preferred Infrastructure Report (SPIR).

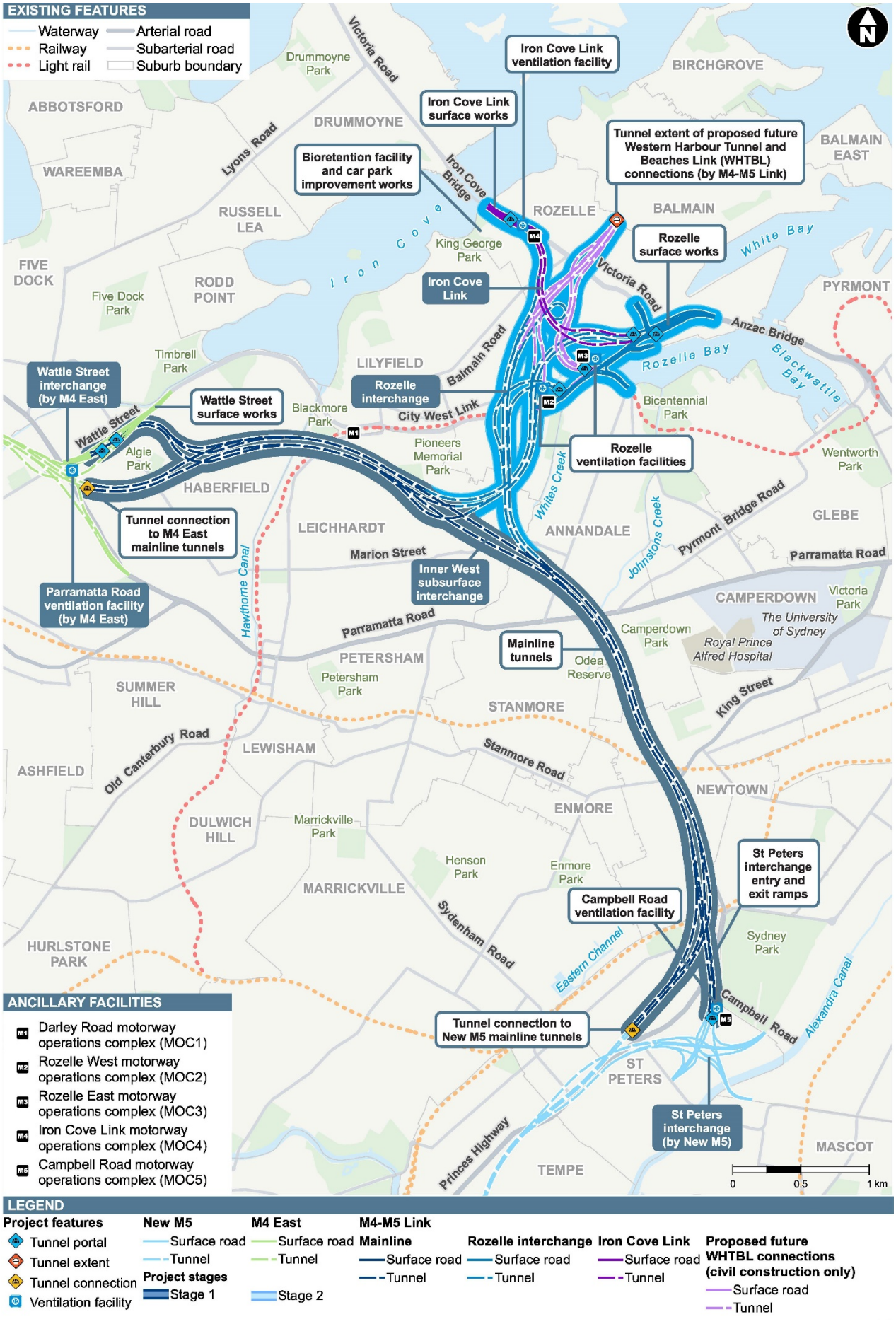

Figure 1-2 Overview of the M4-M5 Link project as described in the EIS

1.4 Modifications to WestConnex M4-M5 Link

Following approval on 17 April 2018, Roads and Maritime submitted an initial modification of the project under Section 5.25 of the EP&A Act (application number SSI 7485 MOD1). The modification related to Stage 1 of the approved project (the mainline tunnel) and was approved by the NSW Minister for Planning on 25 February 2019. Key features of the modification included:

- The Northcote Street civil site (C3a) would become a civil and tunnel site. This would result in 24-hour, seven days a week tunnelling works being carried out from this location within an existing acoustic shed
- The Parramatta Road West and Parramatta Road East civil sites (C1b and C3b) would be used as civil sites. The sites would be used for site offices, light and heavy vehicle car parking, shuttle bus services, workshop and storage of equipment, materials and construction vehicles
- The Darley Road civil and tunnel site (C4) would be removed from the project
- The operational water treatment plant would be relocated from the Darley Road site to the Campbell Road motorway operations complex at the St Peters interchange

A more comprehensive description is provided within the Modification Report for these works. The Modification Report can be found at the following webpage:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9612

An additional modification to the M4-M5 Link, proposing to alter The Crescent overpass and active transport links, has been lodged with the Department of Planning, Industry and Environment (DPIE). This additional modification application is being assessed separately from this modification that is the subject of this report.

1.5 Relevant approved activities

As stated in section 1.3, Stage 2 of the approved project involves the construction of the Rozelle Interchange and Iron Cove Link. This modification report relates to activities to be conducted as part of Stage 2. Further detail is provided in Chapter 3 (Approved Project) of this report.

Key components of the approved project at Iron Cove include:

- Establishment of the Iron Cove civil site (C8) along the southern side of Victoria Road at Rozelle between Byrnes Street and Springside Street. The site would be used to support construction of the Iron Cove Link surface works, including tunnel entry and exit ramps, upgrades and modifications to the eastbound and westbound carriageways of Victoria Road
- Construction and operation of the Iron Cove Link motorway operations complex (MOC4) on the western side of Victoria Road including the Iron Cove Link ventilation facility building located between Springside and Callan Streets and an intake substation located between Callan and Toelle Streets
- Construction and operation of a ventilation outlet between the eastbound and westbound carriageways of Victoria Road above the Iron Cove Link cut and cover

No provision was made to operate roadheaders at the Iron Cove civil site. All tunnelling work associated with construction of the Rozelle Interchange and Iron Cove Link would occur from the Rozelle civil and tunnel site (C5).

Further detail on the approved project is provided in Chapter 3 (Approved Project) of this report and Sections 5.7 and 6.5.12 of the EIS.

1.6 The proposed modification

1.6.1 Description of the proposed modification

The proposed modification relates to Stage 2 of the approved project and includes the following key components:

- Relocation of the MOC4, including the electrical substation and ventilation facilities, underground (the ventilation outlet would remain above ground in the same location illustrated in the EIS). Only a switch room, high voltage regulators, alternative Operational Motorway Control System (OMCS) room and a stair access leading down to the ventilation tunnel would be required on the surface

- Construction of a ventilation tunnel about 340 metres in length that connects the Iron Cove Link tunnel, at an underground location between Cambridge and Waterloo Streets, with the Iron Cove cut and cover structure near Callan Street
- The ventilation tunnel would include two caverns for the housing of ventilation equipment and the electrical substation, along with access tunnels for maintenance
- The Iron Cove Link cut and cover area would be extended on the southwestern side of Victoria Road to facilitate connection to the ventilation tunnel
- All plant, equipment and materials required to construct the proposed new ventilation tunnel and caverns would be supported from the Iron Cove civil site (C8), with the potential for some tunnelling to be supported from the Rozelle civil and tunnel site (C5) later in the construction program.

There is no change to the Iron Cove Link ventilation outlet as described in the approved project.

Chapter 5 (Proposed modification) of this report provides a detailed description of the proposed modification. Proposed changes to the project approval are detailed in Chapter 8 (Conditions of approval).

1.6.2 Need and benefits of the proposed modification

The proposed modification aims to improve the visual impacts associated with the MOC4 by undergrounding the ventilation infrastructure. The proposed modification would:

- Decrease the surface footprint of the permanent works associated with the Iron Cove ventilation facilities potentially increasing the availability of residual land at the completion of construction (see section 6.7)
- Improve visual impacts, particularly overshadowing, by reducing the scale of the operational infrastructure (see section 6.8)
- Improve operational noise impacts by placing the ventilation facilities and substation underground. Operation of the proposed modification would comply with relevant noise criteria in all noise catchment areas, compared to the EIS which predicted exceedances of up to 12dB (see section 6.5.4)
- Provide additional access and egress for tunnel workers, plant, deliveries, ventilation and spoil and work improving safety during construction. Housing the ventilation facilities underground means that the majority of construction would also be underground
- Potentially allow the project to commence commissioning two to three months early, providing more opportunity to finish early and more certainty of finishing dates. Commissioning of the entire project would begin at Iron Cove Link

Alternative design options have been considered including horizontal and vertical arrangements for the fans above ground, an underground arrangement within a ventilation building with a depth of about 40 metres, and the relocation of the ventilation facility to above the cut and cover structure on Victoria Road. The proposed modification significantly reduces and, in some cases, eliminates impacts associated with these options. By locating the ventilation facility underground impacts related to the construction of a link between the ventilation outlet and a ventilation facility on the surface are avoided. These include:

- Elimination of a long duration excavation at the MOC4 site. This excavation would likely be undertaken by excavators with rock hammers. As this is directly adjacent to residential properties rock hammering impacts including potential property damage, high vibration, high intensive noise and dust are avoided
- Potential constriction of Victoria Road traffic (Drummoyne bound) to accommodate the construction footprint while constructing a ventilation link between an above ground ventilation facility and the ventilation outlet. This potential impact would have a significant effect on traffic flow by reducing the Drummoyne bound lanes available to traffic
- Elimination of the operational impacts related to the above ground ventilation facility, detailed above, such as long-term operational noise, overshadowing and amenity reduction.

Should the proposed modification not proceed, additional assessment and approval may be required to provide the necessary connectivity between the ventilation outlet, the road tunnels and the ventilation exhaust facility.

Chapter 4 (Alternatives considered and identification of the preferred option) of this report provides more detail on the identification for the proposed modification.

1.7 Report structure

This report is structured as follows:

- **Chapter 1** (Introduction) provides an overview of the modification, its scope and purpose.
- **Chapter 2** (Assessment process) outlines the statutory assessment requirements and explains the steps in the assessment and approval process.
- **Chapter 3** (Approved project) provides a description of the approved project with a more detailed focus on the elements that are proposed to be changed by the modification.
- **Chapter 4** (Alternatives considered and identification of the preferred option) of this report provides more detail on the need and justification for the modification and alternatives considered.
- **Chapter 5** (Proposed modification) provides a detailed description of the modification to the approved project.
- **Chapter 6** (Consultation) outlines the consultation activities undertaken to date and in the future.
- **Chapter 7** (Environmental assessment) identifies the relevant environmental issues, assesses the potential impacts of the modification and presents environmental management measures in response to those impacts.
- **Chapter 8** (Conditions of approval) identifies the conditions of the project approval that are required to be amended as part of this modification.
- **Chapter 9** (Environmental management measures) details changes to the approved environmental management measures as a result of this modification.
- **Chapter 10** (Modification justification and conclusions) presents the justification for the modification. The

report includes the following supporting appendices:

- **Appendix A**: Environmental assessment requirements for modification
- **Appendix B**: Construction traffic
- **Appendix C**: Operational air quality
- **Appendix D**: Noise and vibration
- **Appendix E**: Potential settlement and property impact
- **Appendix F**: Urban design and visual amenity.