

1. Introduction

1.1 Background

On 16 September 2004, the Minister for Transport Services directed the Transport Infrastructure Development Corporation of NSW (TIDC) to undertake works associated with the Rail Clearways Program. The Rail Clearways Program addresses issues of reliability and passenger growth on the Sydney metropolitan rail network. Separation of these rail routes as part of the Clearways Program would ensure that an incident on one train line would have only a limited effect on the other lines on the CityRail network, thus reducing congestion and delays currently experienced. The 'untangling' of the metropolitan rail network would also ensure simpler timetables and provide capacity for future growth in patronage.

As part of this Program, TIDC proposes to duplicate part of the existing Richmond Branch Line by constructing an additional track between Quakers Hill and Vineyard stations ('the Quakers Hill to Vineyard Duplication' or 'the Project') (refer Figure 1-1). The Project would also include associated works at Schofields, Riverstone and Vineyard stations, including new stations bus interchanges, car parking at Schofields and Vineyard, improved provision for pedestrians and cyclists. The Project would be constructed in two stages:

- Stage 1 would involve additional track and associated works from Quakers Hill Station to the new Schofields Station (including removal of the existing Schofields Station and pedestrian level crossing, and the construction of a pedestrian footbridge with ramps).
- Stage 2 would involve additional track and associated works from the new Schofields Station to Vineyard Station including the new Vineyard Station.

At the time of lodgement of this Environmental Assessment it was proposed that Stage 1 construction would commence in 2009 and would take approximately 24 months to complete. Stage 2 would commence after Stage 1 is completed however delivery of Stage 2 is currently deferred to align with growth in the North West Growth Centre (NWGC), with a date for commencement to be determined. Importantly this Environmental Assessment seeks approval for both stages of the Project.

The existing duplicated track on the Richmond Branch Line extends from Blacktown to approximately 150 metres north of Quakers Hill Station with passing loops located at Clarendon and Mulgrave. A short section of the track (approximately 500 metres) is duplicated at Riverstone Station (refer Figure 1-2). The single line sections of the Richmond Branch Line limit service frequency on this line as trains travelling in each direction need to share the same track. The Richmond Branch Line, north of Quakers Hill Station, currently provides three trains per hour to the City and two trains per hour to Richmond in the morning peak, with equivalent services in the afternoon peak (TIDC 2007). The population growth anticipated for the NWGC (refer Section 3.1.3) will increase the demand for travel in this region. It is, therefore, important to increase the capacity of this line.

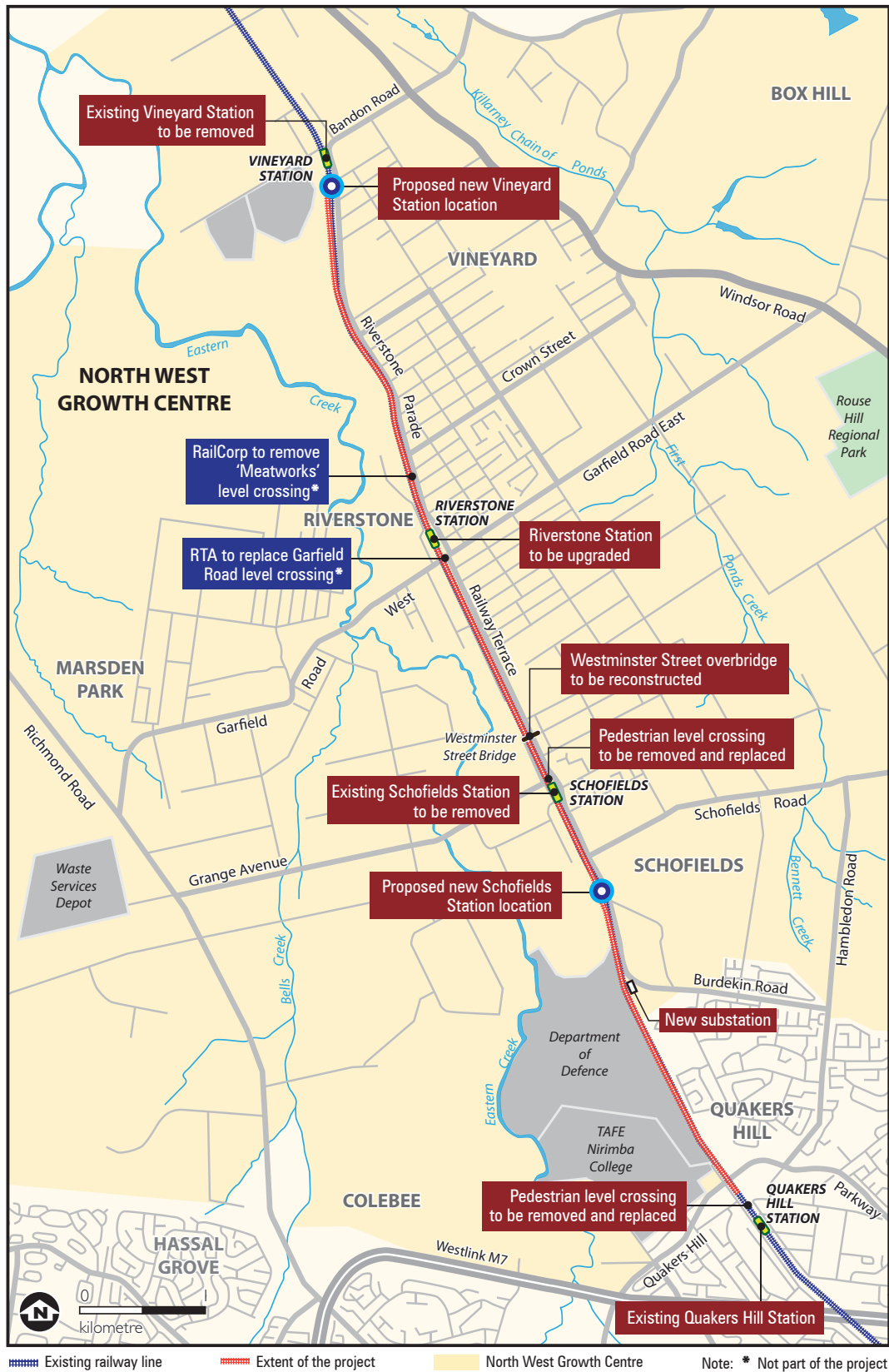


Figure 1-1 Project overview

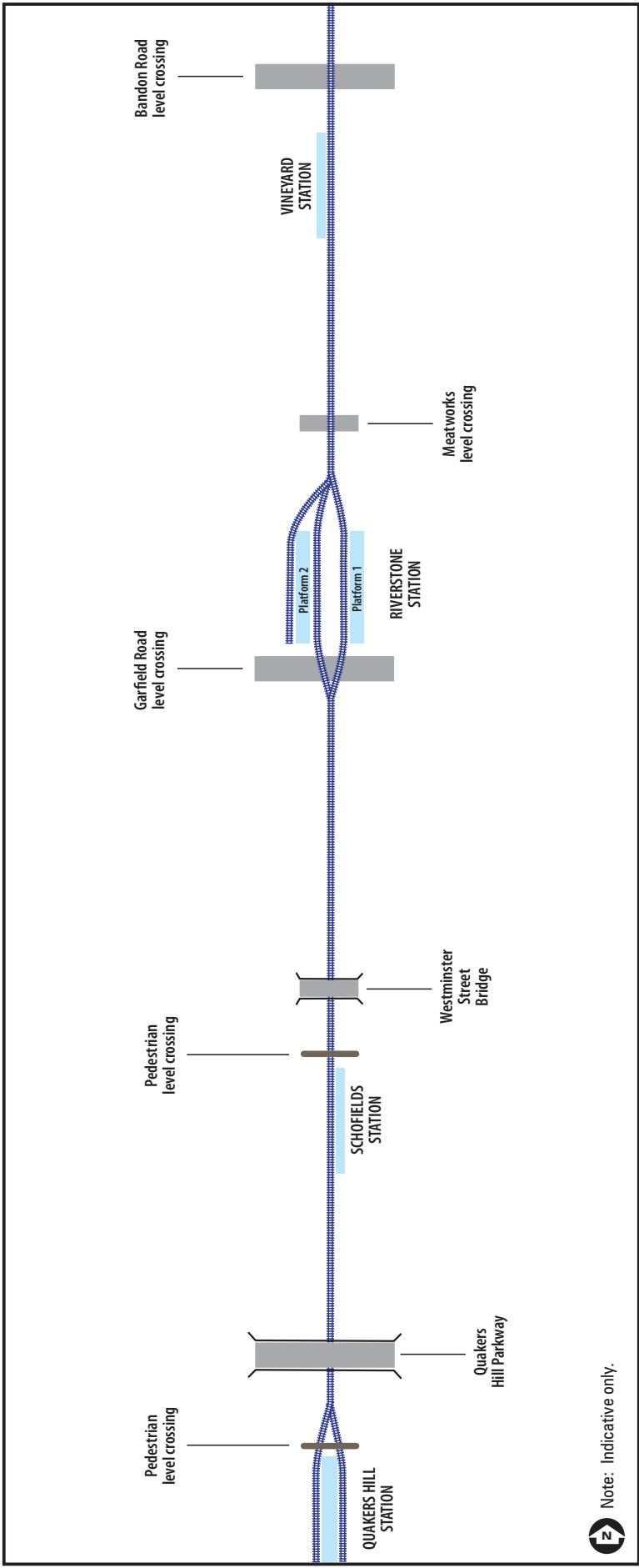


Figure 1-2 Schematic diagram of existing track configuration between Quakers Hill and Vineyard

1.2 The proponent

TIDC, the Project proponent, is a statutory State-owned corporation under the *Transport Administration Act 1988*, with the principal role of delivering major transport projects as directed by the Minister for Transport. TIDC is seeking the Minister for Planning's approval for the Project. For that purpose, TIDC has undertaken an environmental assessment for the Project in accordance with the environmental assessment requirements issued for the Project by the Director-General of the Department of Planning (DoP) (refer Appendix A), referred to as the 'Director General's Requirements' (DGRs). Upon completion of construction, the Project would be managed and operated by RailCorp.

1.3 Location

The Project is located within and adjacent to the existing rail corridor of the Richmond Branch Line between Quakers Hill and Vineyard in Sydney's North West region. The Project is centrally located in the NWGC and directly borders the planned precincts of Schofields, Schofields West, Alex Avenue, Riverstone, Riverstone West and Vineyard (refer Figure 2-2). The majority of the Project works would be undertaken within the Blacktown local government area (LGA), with the exception of the proposed upgrade of the existing substation at Vineyard, and signalling works to extend towards Mulgrave Substation, which would be undertaken within the Hawkesbury LGA.

The Project is proposed to extend as a dual track, electrified rail line for approximately 9.1 kilometres between Quakers Hill and Vineyard stations, and would require approximately 10.1 kilometres of track. The Project would be constructed within the existing rail corridor as well as on approximately 11 hectares of privately owned land, including approximately 3.2 hectares of the commonwealth Department of Defence-owned HMAS Nirimba/Former Schofields Aerodrome that is located adjacent to the existing rail corridor (refer Section 1.4).

1.4 Key features of the Project

The key features of the Project are listed below and shown in Figure 6-1. A more detailed description of the Project is provided in Chapter 6.

- Approximately 10.1 kilometres of new track would be constructed between Quakers Hill and Vineyard in Sydney's North West region as follows:
 - Between Quakers Hill and the new Schofields Station, the new track would be constructed mainly on the western side of the existing track, widening the existing rail corridor to a nominal width (widening increases towards the new Schofields and Vineyard stations; refer Figure 6-1). The new track would become the Down Main track (i.e. the track on which trains travel away from Sydney).
 - Between the new Schofields and Riverstone stations, the new track would be constructed on the eastern side of the existing track. This would become the new Up Main track (i.e. the track on which trains travel towards Sydney).
 - Between the Riverstone and new Vineyard stations, the new track would be constructed on the western side of the existing track. This would become the Down Main track.
 - The track is already duplicated at Riverstone Station and both of the existing tracks would remain (refer Figure 1-2).

- Turnbacks (a track from which train services terminate and change direction) and turnouts (the intersection and mechanisms for the meeting of two tracks) would be provided. This proposed track work would require the widening of the existing rail corridor to accommodate the additional track.
- Schofields and Vineyard stations would be relocated south of their current location and provided with car parks and bus interchanges.
- A new substation would be constructed at Schofields, near the corner of Burdekin Road and Railway Parade, adjacent to the eastern boundary of the rail corridor (refer Figure 6-1). The new stations and substation would be constructed outside of the existing rail corridor boundary and would be located adjacent to the western (new stations) and eastern sides (substation) of the existing rail corridor.
- The existing substation at Vineyard would be upgraded.

Other Project works would include new overhead wiring, modifications to the existing signalling system, culvert works, and the adjustment, relocation and protection of utilities. Westminster Street overbridge at Riverstone would be reconstructed and the pedestrian level crossings at Quakers Hill and Schofields stations would be removed and replaced with footbridges with ramps. The vehicle level crossings at Riverstone Station and at Riverstone (the 'Meatworks' level crossing) are proposed to be removed by the NSW Roads and Traffic Authority (RTA), and RailCorp respectively — the removal of these level crossings does not form part of this Project.

The RTA has investigated and assessed a number of route options for the Riverstone Railway Overpass. A grade separated crossing of the rail line would be needed to achieve the optimal benefit from Stage 2 of the Quakers Hill to Vineyard Project. The construction of Stage 2 of the proposed Quakers Hill to Vineyard Duplication would be coordinated with RailCorp, RTA, TIDC and the GCC.

1.5 Overview of approval process

The Project will be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Part 3A of the EP&A Act establishes an assessment and approval regime for major infrastructure projects in NSW that are likely to significantly affect the environment. Part 3A applies to the carrying out of development that is declared to be a Part 3A project by either a State Environmental Planning Policy (SEPP) or a Ministerial Order published in the *Government Gazette* (under Section 75B of the EP&A Act). A summary of the statutory planning context of the Project is provided in Chapter 2.

In February 2008, a major project application and Project Application Report (*Quakers Hill to Vineyard Duplication Project, Project Application Report*; PB 2008) was submitted to the DoP to seek approval of the Minister to carry out the Project. In response, the DGRs were issued for the Project (refer Appendix A). This Environmental Assessment has been prepared in accordance with those requirements.

A referral to the Commonwealth Minister for the Department of the Environment, Water, Heritage and the Arts was submitted as the Project would affect items defined under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Specifically, the Project would affect Commonwealth Land (acquisition of approximately 3.2 hectares of the HMAS Nirimba/Former Schofields Aerodrome owned by the Commonwealth Department of Defence), and a Commonwealth-listed Endangered Ecological Community (Cumberland Plain Woodland) and plant species (*Pultenaea parviflora*). A referral under

Sections 18, 18A, 26 and 27A of the EPBC Act was submitted to the Minister in early 2009 to seek confirmation as to whether the Project constitutes a *Controlled Action*. It is anticipated that the Minister will advise TIDC that the Project is not a Controlled Action, and will not require approval under the EPBC Act. This is discussed in further detail in Section 2.4.2.

1.6 Regional context

The Project is located almost entirely within the NWGC. The existing environment is characterised by small town centres, residential suburbs, rural-residential development, industrial development and rural land. With the development of this area in accordance with the proposed plans for the NWGC, the environment will be subject to widespread change over the next 25–30 years. For this reason, this Environmental Assessment has addressed the potential impacts of the Project on both the existing and future environment.

The key issues for which the impacts on the existing environment may differ significantly to the impacts on the future environment include:

- land use and property (refer Section 8.1)
- traffic and transport (refer Section 8.2)
- socio-economic (refer Section 8.3)
- noise and vibration (refer Section 8.4)
- visual amenity (refer Section 9.1).

The assessment of impacts of the Project on the future environment is problematic considering that planning for some precincts has not yet commenced and is in preliminary stages for others. For the purpose of this assessment, the future environment was assumed based on available information and preliminary plans. Typical impacts and possible mitigation measures have been provided as a guide.

1.7 Structure of this Environmental Assessment

This document comprises the Environmental Assessment for the Quakers Hill to Vineyard Duplication Project — Volume 1 (Main Volume). The structure and content of Volume 1 is summarised in Table 1-1.

Table 1-1 Structure and content of this document (Volume 1)

Chapter/Appendix	Description
Chapter 1 — Introduction	Outlines the background to the Project, the Project proponent, location, key features of the Project, and provides a guide to the approval requirements and the environmental assessment.
Chapter 2 — Planning and statutory context	Outlines the planning strategies, policies and legislation that apply to the Project.
Chapter 3 — Existing and future environment	Outlines the existing biophysical and social environment along the rail corridor between Quakers Hill and Vineyard, and details how this environment is expected to change with planned future development in the NWGC.
Chapter 4 — Consultation	Outlines how the community and stakeholders have been, and will be, involved in the Project development, assessment and construction phases, and summarises the issues raised by the community and stakeholders.
Chapter 5 — Project justification	Outlines the objectives and need for the Project, the consequences of not proceeding with the Project, and provides an overview of the development of the preferred project option.
Chapter 6 — Description of the Project	Provides a description of the physical works that make up the Quakers Hill to Vineyard Duplication Project, details on the overall proposed construction plan for the Project and an overview of how the Project would operate.
Chapter 7 — Environmental risk analysis	Details the risk process by which the key environmental issues for the environmental assessment were determined.
Chapter 8 — Environmental impact assessment	Describes the potential impact of the Project on 'key' environmental issues and outlines the measures proposed to avoid, remedy or mitigate those impacts in accordance with the DGRs.
Chapter 9 — Environmental impact assessment (other issues)	Describes the potential impact of the Project on 'other' environmental issues and outlines measures proposed to avoid, remedy or mitigate those impacts.
Chapter 10 — Construction compound impacts	Provides a specific, consolidated assessment of site compound impacts to demonstrate that such impacts, while temporary, have been adequately considered and assessed.
Chapter 11 — Sustainability in Project design and delivery	Describes the sustainability initiatives that would be implemented through the Project, as well as other sustainability measures that would be considered further during the development of the detailed design.
Chapter 12 — Draft Statement of Commitments	Outlines the standards, procedures, methods and protocols for identifying and managing the environmental impacts of the Project, including any commitments for further assessment and/or approval.
Chapter 13 — Justification and conclusion	Provides justification of the Project proceeding based on the likelihood of achieving the Project and ecologically sustainable development (ESD) objectives; describes how ESD principles have been applied to the Project; outlines key conclusions of this document and details the next steps following its completion.
Appendix A — Director-General's environmental assessment requirements	Provides a copy of correspondence from the Director-General of the NSW Department of Planning, outlining the DGRs for this Environmental Assessment.
Appendix B — Checklist of environmental assessment requirements	Provides a checklist identifying where the DGRs have been addressed in the Environmental Assessment.

Chapter/Appendix	Description
Appendix C — Stakeholder issues raised during consultation	Provides a list of issues raised by both government agencies and the community during the preparation of the Environmental Assessment.

Volume 2 of this document comprises a number of Technical Papers that support the main Environmental Assessment (Volume 1). These specialist reports document the studies that have been undertaken to assess the potential impacts of the Project in accordance with the DGRs.

The specialist reports have been used to inform the environmental assessment contained in Chapter 8 of this document. In particular, the mitigation and management measures proposed in the specialist reports have been taken into account in developing the recommended mitigation measures and further investigations for the Project as a whole.

Additional management measures are outlined in the draft Statement of Commitments for the Project set out in Chapter 12 of this document.

The structure and content of Volume 2 (Technical Papers) of the Quakers Hill to Vineyard Duplication Environmental Assessment is summarised in Table 1-2.

Table 1-2 Structure and content of Volume 2 (Technical Papers)

Technical Paper	Description
Volume 2a	
Technical Paper 1 — Traffic and transport	Documents the detailed traffic and transport assessment that was undertaken for the Project, by Parsons Brinckerhoff, in accordance with the DGRs. This Technical Paper also provides mitigation measures and recommendations to manage the identified impacts of the Project during construction and operation.
Technical Paper 2 — Noise and vibration	Documents the detailed noise and vibration assessment that was undertaken for the Project, by Heggies Pty Ltd, in accordance with the DGRs. This Technical Paper also provides mitigation measures and recommendations to manage the identified impacts of the Project during construction and operation.
Volume 2b	
Technical Paper 3 — Non-Indigenous heritage	Documents the detailed non-Indigenous heritage assessment that was undertaken for the Project, by Heritage Concepts, in accordance with the DGRs. This Technical Paper also provides mitigation measures and recommendations to manage the identified impacts of the Project during construction and operation.
Technical Paper 4 — Indigenous heritage	Documents the detailed Indigenous heritage assessment that was undertaken for the Project, by Heritage Concepts. This Technical Paper also provides mitigation measures and recommendations to manage the identified impacts of the Project during construction and operation.
Technical Paper 5 — Flora and fauna	Documents the detailed flora and fauna assessment that was undertaken for the Project, by Parsons Brinckerhoff, in accordance with the DGRs. This Technical Paper also provides mitigation measures and recommendations to manage the identified impacts of the Project during construction and operation.