Transport NSW

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SYDNEY LIGHT RAIL EXTENSION
STAGE 1 – INNER WEST EXTENSION
Submissions Report

NSW GOVERNMENT Transport

PB 125 YEARS PARSONS BRINCKERHOFF

Sydney Light Rail Extension Stage 1 - Inner West Extension - Submissions Report

December 2010

Transport NSW

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Glossary and abbreviations

Term or abbreviation	Definition
CBD	Central business district
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CPTED	Crime Prevention Through Environmental Design
CSIP	Community and Stakeholder Involvement Plan
DDA	*Disability Discrimination Act 1992*
DECCW	Department of Environment, Climate Change and Water (formerly DECC, DEC)
DoP	Department of Planning
EA	Environmental Assessment
EMS	Environmental Management System
EPA&A Act	*Environmental Planning and Assessment Act 197*
ERM	Environmental Management Representative
FFMP	Flora and Fauna Management Plan
HMP	Heritage Management Plan
IWEG	Inner West Environment Group
LRV	Light Rail Vehicle
MCA	Multi Criteria Analysis
NML	Noise Management Levels
PEA	Preliminary Environmental Assessment
POEO Act	*Protection of the Environment Operations Act 1997*
RTA	Roads and Traffic Authority
SLRE	Sydney Light Rail Extension
SMP	Sustainability Management Plan
SoC	Statement of commitments — measures considered necessary by the proponent (Transport NSW) to mitigate and manage existing and potential environmental impacts resulting from the construction and/or operation of the project
STA	State Transit Authority

Executive summary

Overview of the project

In February 2010, the New South Wales (NSW) Government announced, as part of the *Metropolitan Transport Plan*, a $500 million commitment to extend the Sydney light rail system in the Inner West along the disused Rozelle goods line corridor. This extension would comprise two stages:

- Stage 1 — an Inner West extension of 5.6 kilometres along the disused Rozelle goods line corridor from Lilyfield to Dulwich Hill
- Stage 2 — a CBD western corridor extension from Haymarket to Circular Quay via Barangaroo with consideration of a future light rail option from Circular Quay to Central via George Street.

Collectively, these two stages are known as the Sydney Light Rail Extensions (SLRE).

In finalising the scope of work for the SLRE Stage 1, the NSW Government also took into account suggestions received from the community during initial consultation regarding the project. The community strongly favoured the inclusion of a walking and cycling shared path within the rail corridor, along with a number of bushcare sites — termed the 'GreenWay' — from the Cooks River to Iron Cove. On 19 July 2010, the NSW Government announced that the GreenWay would be included as part of the development and construction of the SLRE Stage 1 (Inner West Extension).

The project (and subject of this Submissions Report) includes the construction and operation of the SLRE Stage 1 (Inner West Extension) and the GreenWay. The proponent of the project is Transport NSW.

Purpose of this report

This Submissions Report documents and considers the submissions received on the *Sydney Light Rail (Stage 1) — Inner West Extension Environmental Assessment* (EA) (Parsons Brinckerhoff October 2010) and outlines Transport NSW's response to the submissions, as required under Section 75H (6) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).This report provides an overview of the EA (refer Section 1.4), consultation activities undertaken during the preparation and public exhibition of the EA (refer Chapter 2), an overview of alternative scheme investigations and the assessment outcomes (refer Chapter 3), a summary of the issues raised in submissions (refer Chapter 4), responses to most commonly raised issues in submissions (refer Chapter 5), details of the proposed design changes (refer Chapter 6) that have been made since the EA exhibition and an assessment of environmental impacts resulting from these changes (refer Chapter 7). This report also documents a revised final Statement of Commitments (SoC), which has been amended to address some of the key issues raised in the submissions received.

Alternative schemes

Transport NSW undertook a program of community and stakeholder consultation during the preparation of the EA. During this consultation concerns were raised about three components of the project:

- the location of the Dulwich Hill Interchange stop
- the signalised pedestrian crossing at Marion Street
- the GreenWay on Weston Street.

As a result of these concerns Transport NSW devised alternative schemes for these three elements of the project. In the EA these alternative schemes were identified as requiring further investigation to determine their viability and feasibility. Further investigations and options assessments were undertaken by Transport NSW.

The outcomes of the investigations are that the base cases (the designs, as identified in the EA) for the signalised pedestrian crossing at Marion Street and the GreenWay on Weston Street are preferred for the project whilst an alternative scheme for the Dulwich Hill Interchange stop is preferred for the project.

Overview of submissions

The key issues raised in this report (refer to Chapter 4) are divided into three main categories: community submissions, non–government stakeholder submissions and government agency and authority submissions.

The most frequently raised issues in these categories, starting in order of greatest frequency, include:

- for community submissions:
  - alternative schemes
  - visual impact, landscaping and urban design
  - project design
  - traffic and transport
  - noise and vibration
  - ecology and biodiversity.
- for non–government stakeholder submissions:
  - project design
  - alternative schemes
  - ecology and biodiversity.

- for government agency and authority submissions:
  - consultation
  - ecology and biodiversity
  - project design
  - traffic and transport
  - noise and vibration.

Changes to the project design

Since the exhibition of the EA, there have been two modifications made to the project design – the design of the Dulwich Hill Interchange stop and the addition of a lift between the Waratah Mills stop and the Davis Street bridge to provide an additional access point.

The project design is otherwise as described in Chapter 6 of the EA with the modifications as summarised above. The project design has been modified in accordance with Section 75H of the EP&A Act to improve constructability and operational effectiveness and to minimise environmental impacts.

An assessment of the proposed modification to the project design is provided in Chapter 7. In instances where significant design changes are proposed since the exhibition of the EA, the proponent is required to prepare a preferred project report with a view to further exhibition of those changes. However, Chapter 7 demonstrates that the modifications are minor and can be managed with the application of suitable mitigation measures. As such a preferred project report is not required.

Conclusions

This report has addressed the issues raised through the consultation process conducted during and following the exhibition of the EA for the project.

It is proposed that the project as described in Chapter 6 of the EA, as amended by this report, should be submitted for determination by the NSW Minister for Planning.

The revised Statement of Commitments provided in Table 9.1 will establish the appropriate environmental framework for the project to be undertaken in a sustainable manner.

Next steps

The NSW Minister for Planning will subsequently determine whether to grant approval (with or without conditions), or refuse the project in accordance with Section 75J of the EP&A Act.

Should the project be approved by the NSW Minister for Planning, Transport NSW will continue to consult with community members, government agencies and other stakeholders during the pre–construction and construction phases of the project.

1. Introduction

1.1 Background

In February 2010, the New South Wales (NSW) Government announced, as part of the *Metropolitan Transport Plan*, a $500 million commitment to extend the Sydney light rail. These extensions would comprise two stages:

- Stage 1 — an Inner West extension of 5.6 kilometres along the disused Rozelle goods line corridor from Lilyfield to Dulwich Hill
- Stage 2 — a CBD western corridor extension from Haymarket to Circular Quay via Barangaroo with consideration of a future light rail option from Circular Quay to Central via George Street.

Collectively, these two stages are known as the Sydney Light Rail Extensions (SLRE).

In finalising the scope of work for the SLRE Stage 1, the NSW Government took into account the many practical suggestions received from the community following the public release of the *Sydney Light Rail — Inner West Extension Study* (GHD 2010).

The community strongly favoured the inclusion of a walking and cycling shared path in the corridor, along with a number of bushcare sites — termed a 'GreenWay' — from the Cooks River to Iron Cove. On 19 July 2010, the NSW Government announced that the GreenWay would be included in the project.

The construction and operation of the SLRE Stage 1 (Inner West Extension) and GreenWay therefore form the scope of the project.

The project is to be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as per the declaration made in the Government Gazette dated 19 March 2010, which was subsequently amended on 16 July 2010. The 16 July 2010 gazette also declared the project to be a critical infrastructure project under Part 3A of the EP&A Act, meaning that it is deemed to be essential for the economic development of the state.

In July 2010, a major project application and supporting preliminary environmental assessment (Transport NSW 2010a) was submitted to NSW Department of Planning seeking approval from the Minister to carry out the project. In response, Director–General's Requirements (DGRs) were issued for the project on 11 August 2010.

The *Sydney Light Rail Extension – Stage 1 – Inner West Extension Environmental Assessment* (hereafter referred to as the EA) (Parsons Brinckerhoff October 2010) was prepared to assess the impacts of the project in accordance with the DGRs.

The EA report assessed the potential adverse impacts in addition to identifying the benefits of the project. It also outlined the various management and mitigation measures proposed to reduce adverse impacts, and identifies opportunities created by the project that would result in increased benefits to the environment and local community.

The EA was exhibited between 13 October and 15 November 2010 in accordance with Section 75H (3) of the EP&A Act. During this period, submissions were invited from anyone with an interest in the project, including members of the community, non–government stakeholders and government agencies and authorities (Chapter 4 of this report contains details of the submissions received). These submissions have been considered and are addressed in this report.

1.2 Purpose of this report

This report documents and considers the submissions received on the EA and outlines Transport NSW's response to the submissions, as required under Section 75H (6) of the EP&A Act. This report also provides an overview of the EA (refer Section 1.4), consultation activities undertaken during the preparation and public exhibition of the EA (refer Chapter 2), an overview of alternative scheme investigations and an assessment of those schemes (refer Chapter 3), a summary of the issues raised in submissions (refer Chapter 4), responses to most commonly raised issues in submissions (refer Chapter 5), details of the proposed design changes that have been made since the EA exhibition (refer Chapter 6) and an assessment of environmental impacts resulting from these changes (refer Chapter 7). This report also documents a revised final Statement of Commitments (SoC), which has been amended to address some of the key issues raised in the submissions received.

1.3 Transport NSW

Transport NSW is the lead public transport agency of the NSW Government, with primary responsibility for transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management. Transport NSW was constituted under the *Transport Administration Act 1988* as amended by the *Transport Administration Amendment Act 2010*.

Transport NSW will be the governing body responsible for the development and delivery of the project and the proponent for the purposes of the EP&A Act.

1.4 Overview of the EA

1.4.1 Scope of the project

The project includes the SLRE Stage 1 (Inner West Extension) and the GreenWay. The key features of the project are shown in Figures 1.1a to 1.1f and comprise:

- a 5.6-kilometre extension of the light rail between the existing Lilyfield light rail stop and the proposed Dulwich Hill Interchange stop. The extension would be located within the disused Rozelle goods line corridor
- nine new light rail stops — Leichhardt North, Hawthorne, Marion, Taverners Hill, Lewisham West, Waratah Mills, Arlington, Dulwich Grove and Dulwich Hill Interchange

- provision of the GreenWay shared path, (a shared pedestrian and cycle path) from Iron Cove at Dobroyd Point to the northern bank of the Cooks River. This would be located on the western side of the light rail
- as part of the provision of the GreenWay, provision of sites for bushcare and vegetation remediation in order to increase local habitat for fauna
- minor modifications to the existing Lilyfield stop and surrounding track to tie–in new track and overhead wiring infrastructure with the existing light rail
- modifications to the existing space used for car parking in Bedford Crescent to accommodate the Dulwich Hill Interchange stop
- raising of the existing bridge over Parramatta Road, which would carry the light rail
- provision of pedestrian linkages (access pathways) to surrounding neighbourhoods to enable access to the GreenWay shared path and light rail stops
- modification of the existing road bridge structures to accommodate the GreenWay shared path — namely at Hercules Street, Old Canterbury Road, Constitution Road, Davis Street and Longport Street
- a new pedestrian/cycle bridge at Parramatta Road adjacent to the Parramatta Road underbridge
- a new pedestrian/cycle bridge across Hawthorne Canal near Hawthorne stop
- new infrastructure to ensure accessibility and connectivity between the GreenWay shared path, local streets and light rail stops
- safety fencing or other separation of the:
  - GreenWay shared path and light rail operations
  - the light rail operations and the heavy rail near Dulwich Hill Railway Station
- provision of overhead wiring, substation and utilities infrastructure
- minor modifications to the existing light rail stabling and maintenance facility located at Pyrmont.

Joins Figure 1.1b

Light rail alignment
City West Link rail corridor tunnel
Local government area boundary
Existing light rail stop
Proposed light rail stops
Potential substation location

Figure 1.1a Key features of the project

Note: Indicative only, subject to detail design.

Figure 1.1b Key features of the project

Note: Indicative only, subject to detail design.

Light rail alignment
Proposed light rail stops
Local government area boundary
Watercourse
Existing GreenWay shared path (upgraded)
New GreenWay shared path (at-grade)
New GreenWay shared path (elevated)
Existing bushcare site
Potential bushcare/landscaping
Potential substation location
Potential service vehicle access point

Figure 1.1c Key features of the project

Note: Indicative only, subject to detail design.

Figure 1.1d Key features of the project

Note: Indicative only, subject to detail design.

Light rail alignment
Proposed light rail stops
Local government area boundary
Watercourse
Existing shared path (upgraded)
New GreenWay shared path (at-grade)
New GreenWay shared path (elevated)
New GreenWay on-street cycle path
Existing bushcare site
Potential bushcare/landscaping
Potential service vehicle access point

Figure 1.1e Key features of the project

Note: Indicative only, subject to detail design.

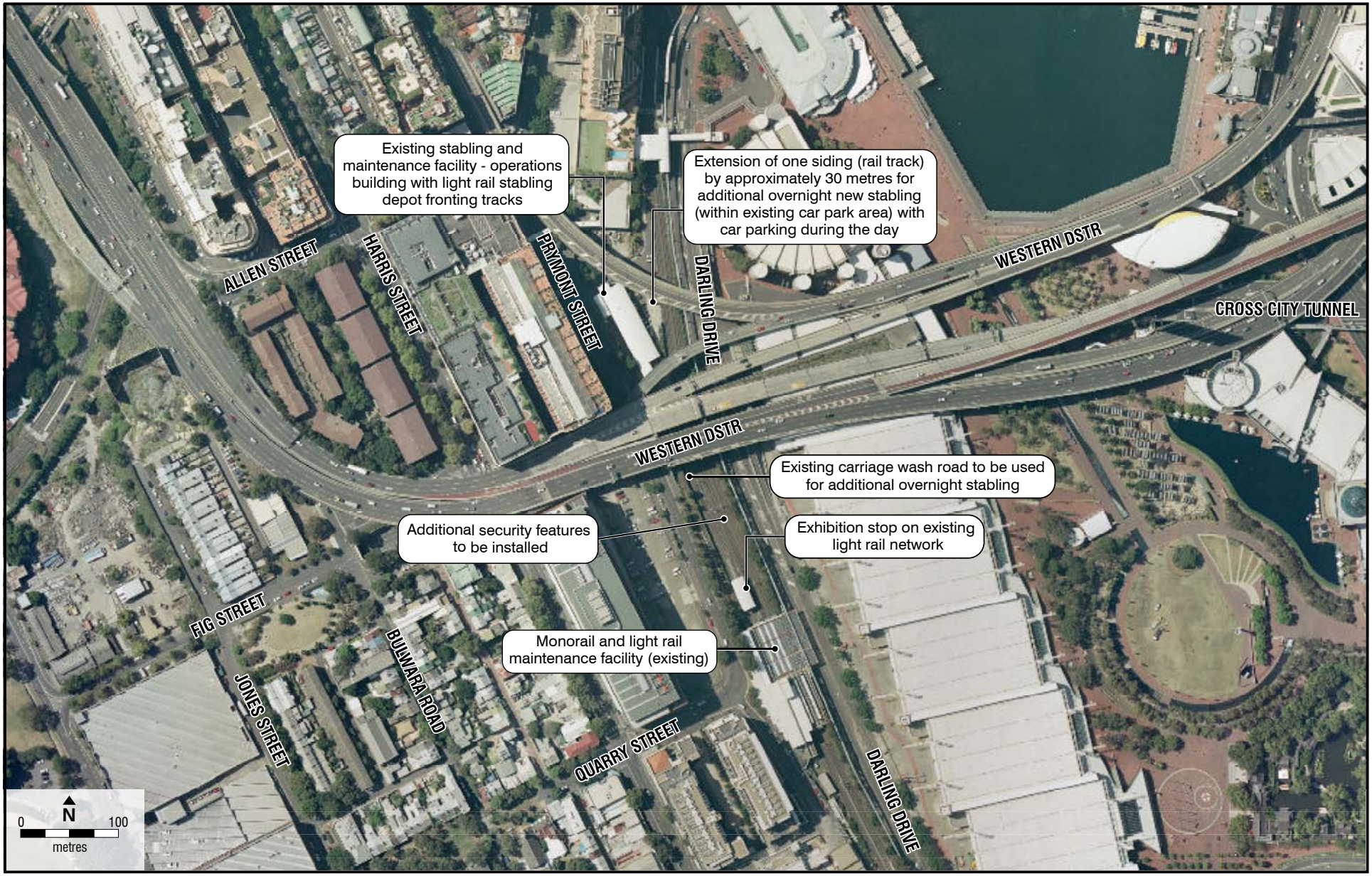


Figure 1.1f Key features of the project - existing stabling and maintenance facility, Pyrmont

Note: Indicative only, subject to detail design.

1.4.2 Overview of likely impacts

The project is expected to have largely positive environmental, social and economic impacts, although some negative impacts will be experienced, in particular during construction of the project. The key potential environmental impacts of the project (in accordance with those identified by the Director–General) were presented in Table E.1 of the EA along with key management measures proposed to avoid and/or mitigate those potential impacts.

1.4.3 Conclusions of the EA

The EA confirmed the project has a strong justification for proceeding, considering the significant regional transport, social and economic benefits it would provide for the existing communities within Sydney's Inner West.

The project would support the NSW Government's aim to increase the patronage of public transport and active transport (cycling and walking) options within the Sydney metropolitan region and make alternative transport options more reliable. The adverse consequences of not proceeding with the proposal would be significant in the long term for the existing rail network's capacity, road network congestion, and poor accessibility for existing residents and businesses within the local area.

The project is expected to have significant environmental, social and economic benefits for the Inner West region of Sydney, as well as the wider metropolitan area. However, some adverse impacts would be unavoidable due to the nature of the project. Noise, visual and traffic impacts would occur, particularly during the project's construction. These are expected to reduce in the long term once the project starts operating and proposed mitigation measures are implemented.

Various measures and commitments are recommended to avoid and/or manage the identified impacts associated with the project's construction and operation. These would be incorporated in the final construction environmental management plan (CEMP(s)) and operator's environmental management system (EMS), as the detailed design of project progresses. This was reflected in the draft statement of commitments presented in Section 19.1 of the EA.

Provided the measures and commitments specified in the EA, as updated by this report (refer Table 9.1), are applied and adhered to during the project's design, construction and operation, the overall environmental impacts are considered to be manageable.

1.5 The assessment and approval process

The project has been assessed and will be considered in accordance with the project approval requirements of Part 3A of the EP&A Act. The determination process under Part 3A is illustrated in Figure 1.2.

The next steps for the assessment of the project are summarised as follows:

- following the lodgement of this report with the Department of Planning, the Director–General of the Department of Planning will prepare an Assessment Report for the project (under Section 75I of the EP&A Act)
- the Assessment Report, including a copy of the EA, this report and any advice provided by public authorities, will be submitted by the Director–General to the Minister for Planning for the purpose of the Minister's consideration as to whether to grant project approval under Part 3A of the EP&A Act
- the Minister for Planning's determination of the project and the Assessment Report will be published on the Department of Planning website.

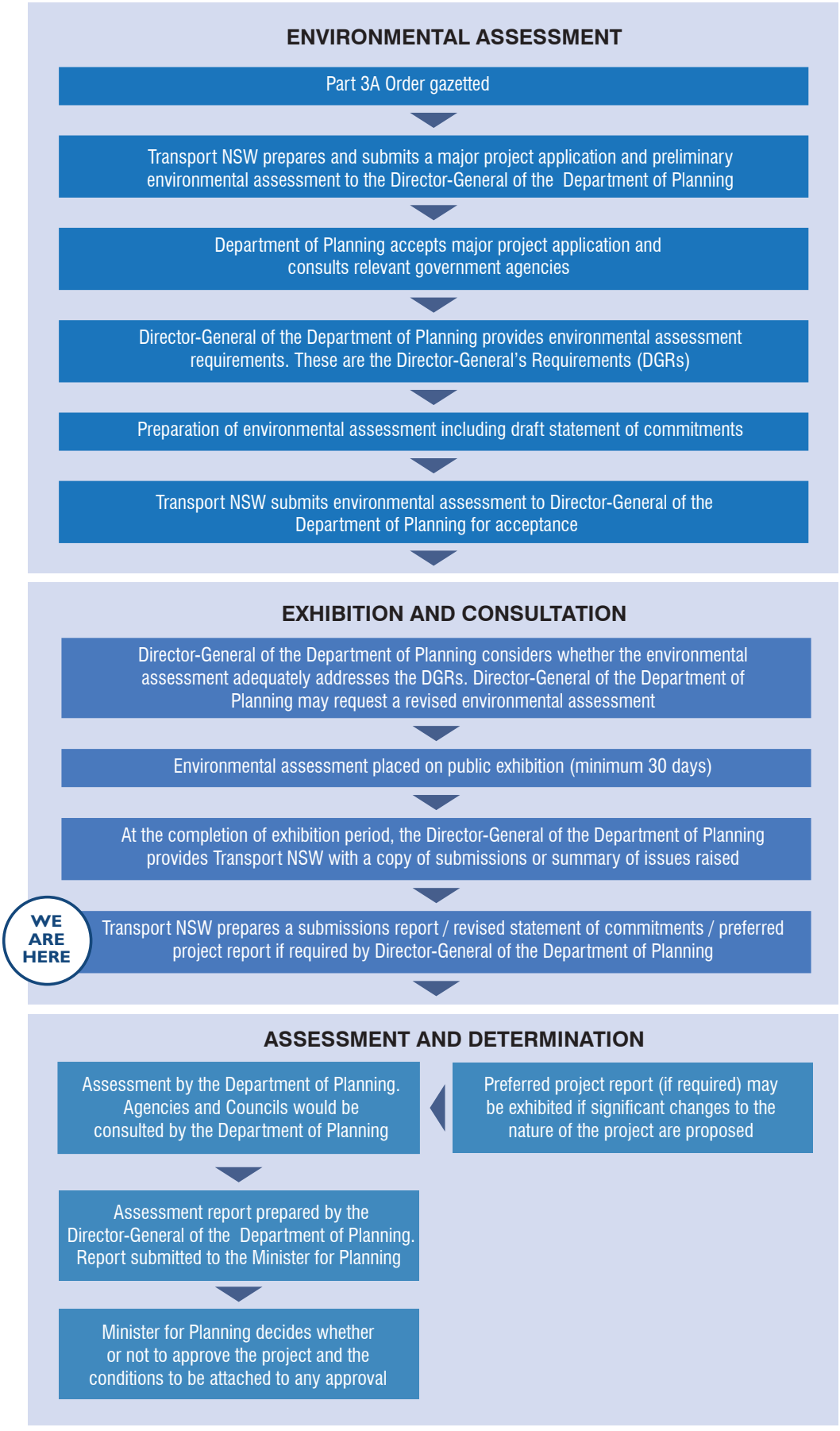


Figure 1.2 Part 3A approval process

1.6 Structure of this report

The structure and content of this Submissions Report is summarised below in Table 1.1.

Table 1.1 Structure and content of the Submissions Report

Chapter	Description
Chapter 1 – Introduction	Outlines the background and need for the project and the purpose of the report, and summarises the key findings of the EA. This chapter also provides an outline of the determination process for the project.
Chapter 2 – Consultation	Documents the consultation undertaken by Transport NSW during the preparation and public exhibition of the EA, and the process used to manage submissions received on the project. This chapter also provides an overview of consultation activities that Transport NSW would undertake if project approval is granted.
Chapter 3 – Alternative scheme investigations	Provides a description of the alternative schemes investigated during the exhibition period of the EA and outlines the preferred options for the project.
Chapter 4 – Overview of submissions	Provides an overview of the submissions received and the key issues raised.
Chapter 5 – Responses to submissions	Provides Transport NSW's response to frequently raised issues.
Chapter 6 – Proposed design changes	Provides a description and justification of the proposed design changes to the project since exhibition of the EA.
Chapter 7 – Impact assessment of proposed design changes	Provides a summary of the assessments undertaken for the proposed design changes.
Chapter 8 – Clarifications to the EA	Provides clarification to minor editorial errors which were identified within the EA during exhibition.
Chapter 9 – Final Statement of Commitments	Provides the final Statement of Commitments that Transport NSW commits to during the pre-construction, construction and operational phases of the project to manage the impacts identified in the EA and this report.
Chapter 10 – Conclusions and next steps	Presents the conclusions of the report and documents the form of approval requested in accordance with the provisions of Part 3A of the EP&A Act.
Appendix	
Appendix A – Alternative Schemes Options Report	Details the options assessment process undertaken by Transport NSW on the alternative schemes and presents the findings of the options assessment.
Appendix B – Responses to community submissions	Provides a summary of the issues raised in community submissions and Transport NSW's response to these issues.
Appendix C – Responses to Non–government stakeholder submissions	Provides a summary of the issues raised in non-government stakeholder submissions and Transport NSW's response to these issues.
Appendix D – Responses to government submissions	Provides a summary of the issues raised in government agency and authority submissions and Transport NSW's response to these issues.
Appendix E – Parking survey	Assesses the current (pre-operation) availability of parking within the study area of the project.

2. Consultation

This section documents the consultation undertaken by Transport NSW and its consultants during the preparation and public exhibition of the EA.

2.1 Pre–exhibition consultation

In October 2009, a Light Rail Extension Study Steering Committee was formed, consisting of Ashfield, Leichhardt, Marrickville and City of Sydney councils, the Department of Planning and the Barangaroo Delivery Authority. Transport NSW commissioned a study on the proposed extension of the Sydney Light Rail — Inner West.

The study produced the draft *Inner West Extension Study* (GHD 2010a), with the Steering Committee overseeing the work. The draft *Inner West Extension Study* (GHD 2010a) was released by Transport NSW for public comment from 17 May to 7 June 2010. Other consultation activities undertaken during this time included meetings between Transport NSW and local councils, as well as a number of other non government stakeholders.

Submissions and feedback received from the other consultation activities during this time were summarised and presented in the *Sydney Light Rail Inner West Extension Stakeholder Comments Report on the Draft Inner West Extension Study* (GHD 2010b).

Following the public comment period on the draft *Inner West Extension Study*, local residents and other stakeholders were kept informed of the project via information presented on the Transport NSW website, community update newsletters, advertisements in local papers, media releases, emails and community information sessions. Local residents and other stakeholders were able to provide feedback via a dedicated project email address or telephone line (refer to Section 2.1.1 below for further details).

The *Product Definition Report* (Transport NSW, 2010a) and *Preliminary Environmental Assessment for the Sydney Light Rail Extension – Inner West* (PEA) (Transport NSW 2010b) were lodged with the Department of Planning on 19 July and made available to the public via the Transport NSW website. A media release was issued and key stakeholders were notified of the inclusion of the GreenWay in the project scope.

2.1.1 Contact and feedback mechanisms

Project contact details were maintained from the feasibility report phase. These details were included on all written communications distributed to the community. They included:

- project information line: 1800 636 910
- email: lightrail@transport.nsw.gov.au
- postal address: Transport NSW, PO Box Q286, QVB Post Office NSW 1230
- website: www.transport.nsw.gov.au. This website is updated regularly and to–date has received over 100,000 hits.

2.1.2 Government authority and agency consultation

Government authorities and agencies were consulted before and throughout the EA preparation. Most of the agencies were consulted through the GreenWay Steering Committee, with a number consulted on a one–on–one basis by the project team as required. Meetings of the Light Rail Steering Committee were held on 17 May, 17 June, 19 July and 26 August, 2010.

The following government authorities and agencies were contacted while producing the EA:

- Department of Environment, Climate Change and Water (DECCW)
- Department of Planning (Major Projects Team, Heritage Branch)
- NSW Environment Trust
- Roads and Traffic Authority (RTA)
- RailCorp
- State Transit Authority (STA)
- Sydney Water Corporation
- Independent Transport Safety and Reliability Regulator (ITSRR)
- Marrickville Council
- Leichhardt Council
- Ashfield Council
- Canterbury Council.

Contact with a number of these government authorities and agencies is ongoing and will continue through detailed design.

2.1.3 Consultation with other stakeholders

The following is a list of non–government stakeholders that have been consulted throughout the EA preparation:

- Bike user groups
- EcoTransit
- GreenWay Steering Committee (included Friends of the GreenWay and the Inner West Environment Group)
- NSW Commuter Council
- Haberfield Association

- Marion Street Light Rail Committee
- Darug Aboriginal Cultural Heritage Assessment
- Metropolitan Local Aboriginal Land Council
- Metro Transport Sydney.

Contact with a number of these non–government stakeholders has continued post EA exhibition period.

2.1.4 Consultation activities

Newsletters

Two newsletters called *Community update: light rail extension – Inner West Lilyfield to Dulwich Hill* were distributed to properties close to the rail corridor to inform residents, stakeholders and other community members about the project in June and August–September.

The newsletters identified the track maintenance works underway in the corridor that are separate to this EA and have been approved under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The newsletters also detailed the inclusion of GreenWay shared path into the scope of the project.

A separate newsletter was also distributed to around 200 properties in the Weston Street area in August. This newsletter qualified point of fact about the GreenWay along Weston Street and also provided information about the August-September round of community information sessions.

Advertisements

Advertisements were placed in the following local newspapers in early August to inform the community about the trackworks, and later in mid–late August to encourage community attendance at the August–September 2010 community information sessions (detailed below):

- Inner West Courier
- Ciao Magazine.

Community information sessions

Three community information sessions were held during the EA preparation. Notification of the community information sessions was provided via letterbox drop to local residents, an email notification to registered stakeholders and a media release issued on 24 August 2010. The notification informed stakeholders and residents of the community information sessions and also provided a brief description of the project and a timeline of where the project was in the planning stages.

Details of the community information sessions are summarised in Table 2.1.

Table 2.1 Community information session details

Venue	Date and time	Registered attendees[1]
Art Est. Art School, Leichhardt	Thursday 26 August, 6 pm–9 pm	50
Michael Maher room, Haberfield Centre	Saturday 28 August, 10 am–1 pm	100
Dulwich Hill Public School, Dulwich Hill	Saturday 4 September, 11 am–2 pm	180

Note 1: The number of community members who attended the community information sessions was potentially higher than the number quoted as not all attendees registered their attendance.

Comprehensive display materials were used to convey information to the community and to provide material for future reference, including route alignment maps, stop context and concept plans, information boards, fact sheets and newsletters and feedback forms. Information sessions were attended by project team members from Transport NSW, PB and technical specialists; providing an overview of the project and an opportunity for the community to ask questions and provide feedback.

Aboriginal Community consultation

A *notice of Aboriginal consultation* was placed in the Inner West Courier on 29 July 2010, inviting Aboriginal stakeholders with a cultural knowledge of the area to register an interest in being consulted for the project.

One to one contact with residents

The project team has been available to discuss issues one–on–one with residents as points of concern have arisen.

2.2 Consultation during the public exhibition period

The EA was placed on public exhibition from 13 October to 15 November 2010. The exhibition activities and consultation undertaken during the exhibition period are summarised below.

2.2.1 Exhibition venues

Hard copies of the EA were placed on public exhibition at the following locations:

- NSW Department of Planning
- Transport NSW
- Nature Conservation Council of NSW
- Leichhardt Administrative Centre
- Leichhardt Library (Leichhardt)
- Ashfield Council Customer Service Centre
- Ashfield Library (Haberfield)

- Marrickville Council Citizen's Service Centre
- Marrickville Library (Marrickville)
- Marrickville Library (Dulwich Hill Branch)
- City of Sydney Customer Service Centre
- Glebe Library.

The display included copies of the EA, an A3 poster with information on the project and contact details.

An electronic copy of the EA was available on the Department of Planning website and a link to the Department of Planning website was provided via the Transport NSW website (www.transport.nsw.gov.au).

2.2.2 Advertisements

Advertisements outlining the key details of the project, exhibition of the EA and community information session details were placed in the local newspapers listed in Table 2.2.

Table 2.2 Advertisements

Publication	Appearance date
Inner–West Courier	Thursday 14 October
	Tuesday 19 October
	Thursday 21 October
	Tuesday 26 October
Cooks River Valley Times	Thursday 14 October
	Thursday 21 October
Ciao Magazine	Thursday 21 October

These advertisements requested submissions on the EA from anyone with an interest in the project, including stakeholders and members of the community.

2.2.3 Project information line, email and website

The project 1800 information line, email and website, as described in Section 2.1.1, continue to provide the opportunity for stakeholders, to contact Transport NSW to request information or raise concerns.

The Transport NSW website (www.transport.nsw.gov.au) is regularly updated with current information regarding the progress of the project development of the Inner–West Light Rail extension.

2.2.4 Project updates

A number of methods were used to notify community members of the community information sessions during the EA exhibition period. These included:

- targeted flyer drops to over 20,000 residents
- advertising in the Inner West Courier, Ciao Magazine and the Cooks Valley River Times (see Section 2.2.2)
- email notification to subscribers on the project Consultation Manager database, the GreenWay mailing list and via council e–newsletters and email mailing lists
- project information and flyers were also distributed to number of businesses along the alignment and at community events in the local area.

2.2.5 Community information sessions

Three community information sessions were held during the public exhibition period. These sessions were advertised in local newspapers (refer to Section 2.2.2), on Transport NSW website (refer to Section 2.2.3), and in printed and electronic distributions to stakeholders and the wider community.

Details of the community information sessions are summarised in Table 2.3.

Table 2.3 Community information session details

Venue	Date and time	Registered attendees[1]
Dulwich Hill Public School, Dulwich Hill	Sunday 23 October, 11 am–2 pm	88
Michael Maher room, Haberfield Centre	Monday 25 October, 5 pm–8 pm	40
Leichhardt Town Hall, Leichhardt	Saturday 30 October, 11 am–2 pm	53

Note 1: The number of community members who attended the community information sessions was potentially higher than the number quoted as not all attendees registered their attendance.

Comprehensive display materials were used to convey information to the community and to provide material for future reference, including route alignment maps, stop context and concept plans, information boards, fact sheets and newsletters and feedback forms.

Information sessions were attended by project team members from Transport NSW, PB and technical specialists; providing an overview of the project and an opportunity for the community to ask questions and provide feedback.

The sessions allowed:

- a transfer of information between stakeholders and the project team
- the presentation of information regarding the project development and design, the PEA and EA, key project issues, alternative schemes and the EA process
- an opportunity for community comments and questions
- access to further information on up to date project information, the outcome of technical investigations and the submission process
- opportunity for one–on–one contact with the project team and technical experts in areas of interest, including acoustics, planning, design, environmental assessment, construction and communications
- a chance to review display materials, including: a route alignment map, stop context and concept plans, copies of the PEA and EA, and information boards presenting information on the EA process, project design and development, technical investigations, key issues and benefits and how community feedback has influenced the project
- opportunity to provide feedback on the usefulness and effectiveness of the information sessions through feedback forms which were collected by the project team
- access to business cards for project details for future easy reference.

2.2.6 Attendance at other community events

The Summer Hill Grand Food Bazaar, part of the GreenWay Festival, was held on Sunday 17 October between 10 am – 4 pm. The Light Rail project team hosted a stall at the festival to provide the community with information about the Inner West Light Rail Extension and GreenWay. This event provided an opportunity to access a wide cross–section of the project's catchment to raise awareness, answer questions, and promote the EA exhibition period. Approximately 500 people visited the stall on the day.

2.2.7 Notification to specified properties about predicted noise levels

The EA found that the noise levels associated with operation of the light rail extension are minimal. However, the EA identified a limited number of properties where noise goals are potentially exceeded in the evening/night and where additional noise mitigation may be required. Transport NSW attempted to contact these property owners by telephone on 13 October. A follow up letter was also sent by Transport NSW on 15 October outlining the predicted noise levels at these properties, approach to mitigation measures and an invitation to meet with a representative from Transport NSW to discuss the contents of the letter further.

2.3 Receipt and management of submissions

Submissions on the project were received by the Department of Planning and copies provided to Transport NSW by the Department of Planning.

Submissions that were sent directly to Transport NSW via email were forwarded to the Department of Planning to be registered as a formal submission.

Each submission that was received was allocated a unique identification number in chronological order. The submissions were then reviewed to identify the key issues.

Late submissions from government agencies were accepted by the Department of Planning until one week after the close of the exhibition period. These submissions were managed using the same process described for submissions that were not late.

Following determination of the project, a letter will be sent to persons who provided a submission, advising them of the completion of the Submissions Report, their submission number and the process for determining the project by the Minister for Planning.

2.4 Future consultation

As identified in Statement of Commitment 5 (refer Table 9.1) a community and stakeholder involvement plan (CSIP) would be established before construction begins. The plan would then be implemented throughout the project's delivery. The plan would include, but not be limited to:

a) identification of community and other stakeholders to be informed/consulted as part of the project

b) details of procedures and mechanisms that would be used to regularly inform the community and other stakeholders of the project's progress and issues of interest to the community

c) details of how property owners directly affected by the project would be consulted throughout the project

d) processes to receive and manage feedback and complaints

e) project phone, email and mail contact details (including a 24–hour contact number for urgent enquiries/complaints). The proponent would notify the public of the existence and purpose of the 24 hour complaints line

f) notification of specific activities via advertising, letter, telephone, SMS, email, and meetings.

Details would be provided for community–based forums that would be held to address key community and environment issues of interest/concern. The community would be encouraged to participate in community–based forums to help identify further opportunities to improve project outcomes and/or reduce the impacts associated with the project.

3. Alternative scheme investigations

3.1 Background

Transport NSW undertook a program of community and stakeholder consultation during the preparation of the EA. During this consultation concerns were raised about certain components of the project. The concerns related to three particular elements of the project:

- the location of the Dulwich Hill Interchange stop
- the signalised pedestrian crossing at Marion Street
- the Weston Street on street cycle pathway.

As a result of these concerns Transport NSW devised alternative schemes for these three elements of the project and these schemes were presented within the EA and at community information sessions.

As identified in the EA, these alternative schemes did not represent Transport NSW's preferred position at the time and therefore did not form part of the proposed project as described in the EA. In the EA these alternative schemes were identified as requiring further investigation to determine their viability and feasibility.

Further investigations and options assessments were undertaken by Transport NSW during the exhibition of the EA and the findings have been documented in the *Sydney Light Rail Extension Stage 1 – Inner West Extension Alternative Schemes Options Report* (PB. 2010). The investigations and alternatives assessment is summarised below with the full report included as Appendix A.

3.2 The alternative schemes

3.2.1 Dulwich Hill Interchange stop location

Alternative scheme 1

Alternative scheme 1 would locate the Dulwich Hill Interchange stop at the western end of Bedford Crescent between the existing residential properties to the east and Jack Shanahan Park to the west. An indicative arrangement of the Dulwich Hill Interchange stop alternative scheme 1 is shown on Figure 3.1.

The Dulwich Hill Interchange stop would include a single, four metre wide, platform which would allow for light rail vehicles (LRVs) to load and unload passengers on its western side.

A stair and lift from Bedford Crescent down to a new path would provide access to the stop platform and to Jack Shanahan Park. Upgraded footpaths would be provided on Bedford Crescent. A new pedestrian crossing and extended footpath blisters would be provided on Bedford Crescent at its intersection with Wardell Street.

A new small pocket park with tree plantings would be installed at the far western end of Bedford Crescent. This would require the removal of a small section of the road and some car parking spaces.

The existing 90 degree commuter parking on the southern side of Bedford Crescent would remain, with the exception of a few spaces on the eastern end of the street which would be removed to accommodate a kiss-and-ride drop off area. Line markings would be provided to formalise the 90 degree commuter parking. An area for car turning would be provided at the western end of the street.

As with the base case this alternative scheme would include a security fence between the proposed light rail corridor and the existing heavy rail corridor. This fence would also extend to the north along the light rail corridor around the eastern edge of Jack Shanahan Park. There would also be a fence at the edge of the escarpment on Bedford Crescent.

Totem signage would be installed at the junction of Bedford Crescent and the Wardell Street bridge, at the stop entrance and in Jack Shanahan Park.

Alternative scheme 2

Alternative scheme 2 would locate the Dulwich Hill Interchange stop slightly to the north of the alternative scheme 2. The location of this alternative would be south of Macarthur Parade between the intersection of Macarthur Parade and Keith Lane on the east and Jack Shanahan Park on the west. An indicative arrangement of the Dulwich Hill Interchange stop alternative scheme 2 is shown on Figure 3.2.

The Dulwich Hill Interchange stop would include a single, four metre wide, platform which would allow for LRVs to load and unload passengers on its western side.

A stair and ramp from the existing pedestrian path off Macarthur Parade and Keith lane would provide access to the stop platform and to a new path which would provide access to Jack Shanahan Park. A kiss-and-ride drop off area would be provided on Macarthur Parade.

As with the base case this alternative scheme would include a security fence between the end of proposed light rail corridor and the existing heavy rail corridor. This fence would also extend to the north along the light rail corridor around the eastern edge of Jack Shanahan Park. There would also be a fence at the edge of the escarpment on Bedford Crescent.

Totem signage would be installed at the junction of Macarthur Parade and Keith Lane, on the stop entrance on the pedestrian path and in Jack Shanahan Park. This alternative scheme would not require changes to Bedford Crescent.

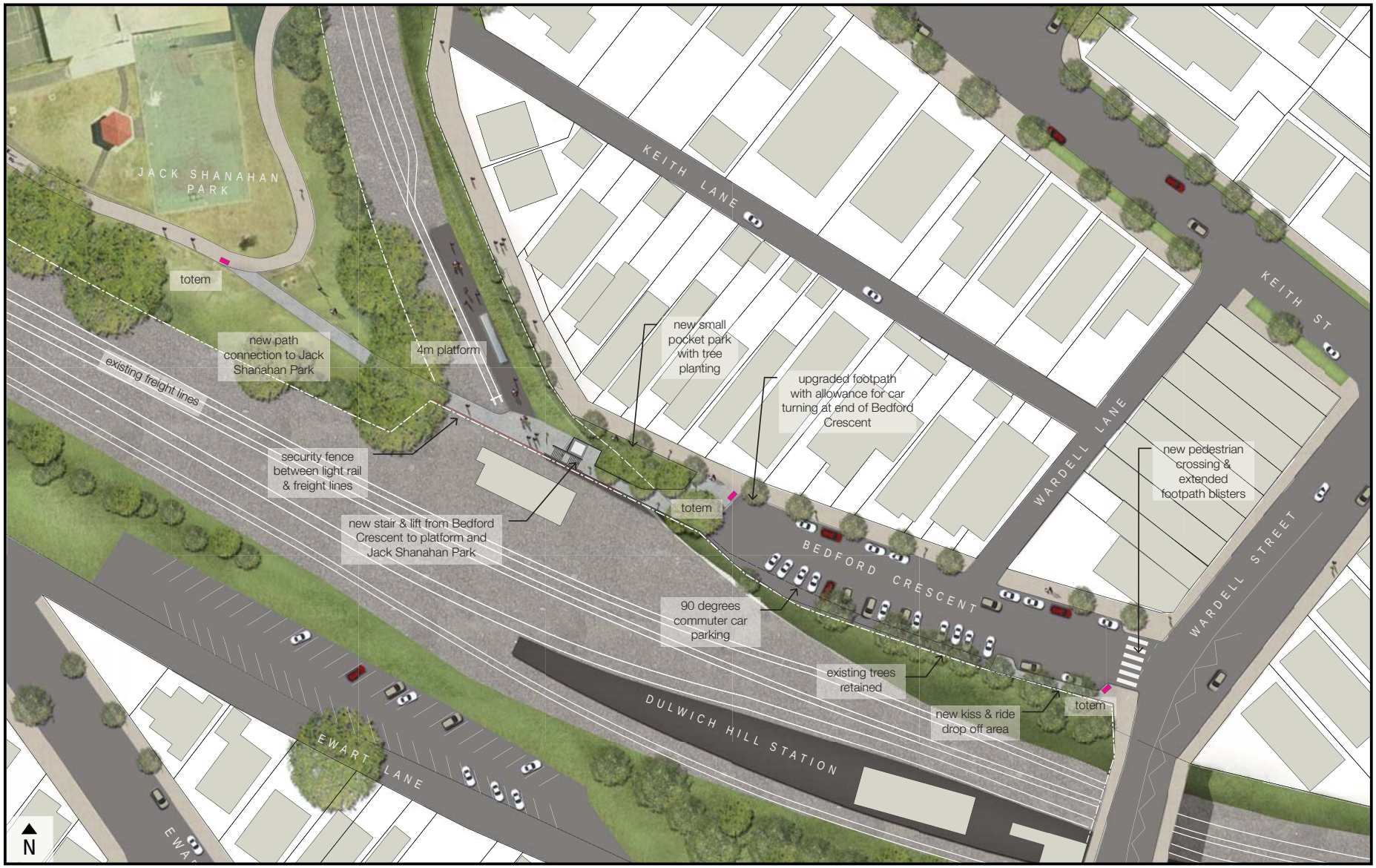


Figure 3.1 Indicative arrangement of the Dulwich Hill Interchange stop (alternative scheme 1)

Note: Indicative only, subject to detail design.

Figure 3.2 Indicative arrangement of the Dulwich Hill Interchange stop (alternative scheme 2)

Note: Indicative only, subject to detail design.

3.2.2 Crossing of Marion Street for pedestrians and cyclists

Alternative scheme

The alternative scheme would provide for a new GreenWay pedestrian and cycle bridge over Marion Street. The bridge would comprise an elevated ramp approximately 200 metres long over Marion Street adjacent to the western side of the existing underbridge.

The northern side of ramp would join upgraded shared path in Richard Murden Reserve and cross above the Hawthorne Canal.

On the southern side of Marion Street the ramp would gradually decrease in height and join the GreenWay shared path alongside the rail corridor as proposed in the EA.

On the northern side of Marion Street the bridge would provide access to Marion stop via a new ramp. Lifts would be provided on both sides of Marion Street to provide easy access to the bridge and the Marion stop platform.

The indicative arrangements of the alternative scheme are shown in Figure 3.3 and Figure 3.4.

Figure 3.3 Indicative arrangement of the alternative scheme for the Marion Street crossing

Note: Indicative only, subject to detail design.

Figure 3.4 Cross-section of the alternative scheme for the Marion Street crossing

Note: Indicative only, subject to detail design.

3.2.3 GreenWay between Davis Street and Old Canterbury Road (Weston Street)

Alternative scheme 1

Alternative scheme 1 would include the GreenWay shared path within the rail corridor at the rear of properties on Weston Street. The pedestrian and cycle paths would not enter onto Weston Street.

Alternative scheme 1 would position the GreenWay shared path directly above Hawthorne Canal as suspended walkway structure. There would be a 3.5 metre safety clearance from centre line of light rail track to the GreenWay shared path. Privacy screening would be provided between the GreenWay shared path and the property boundaries.

Alternative scheme 2

Alternative scheme 2 would also include the GreenWay shared path within the rail corridor at the rear of properties on Weston Street. The pedestrian and cycle paths would not enter onto Weston Street.

Alternative scheme 1 would position the GreenWay shared path adjacent to Hawthorne Canal as an elevated structure supported by columns. As with alternative scheme 1, there would be a 3.5 metre safety clearance from centre line of light rail track to the GreenWay shared path and privacy screening would be provided between the GreenWay shared path and the property boundaries.

The indicative arrangements of the alternative schemes are shown in Figure 3.5 and Figure 3.6.

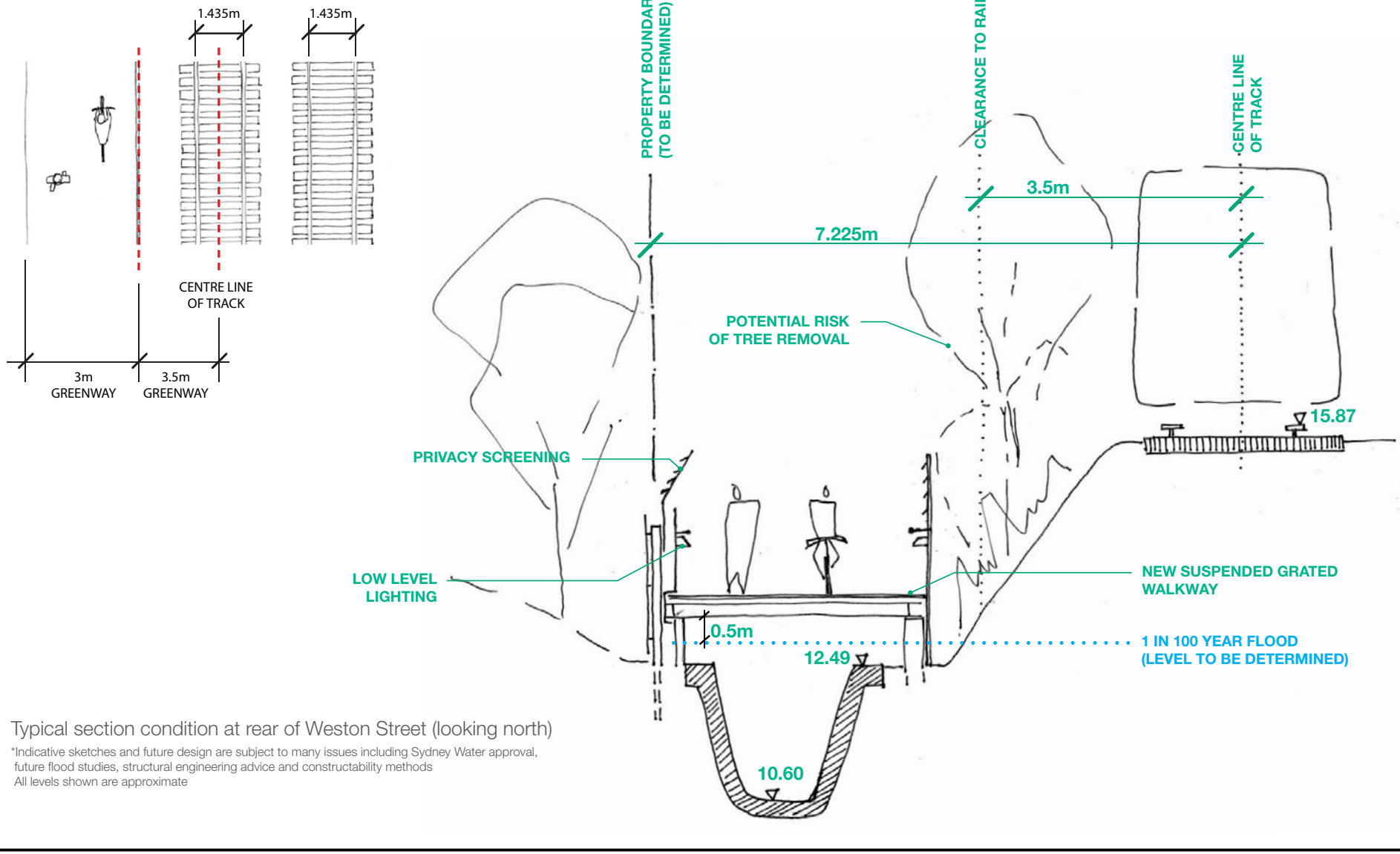


Figure 3.5 Indicative section of the GreenWay shared path at rear of Weston Street – alternative scheme 1

Note: Indicative only, subject to detail design.

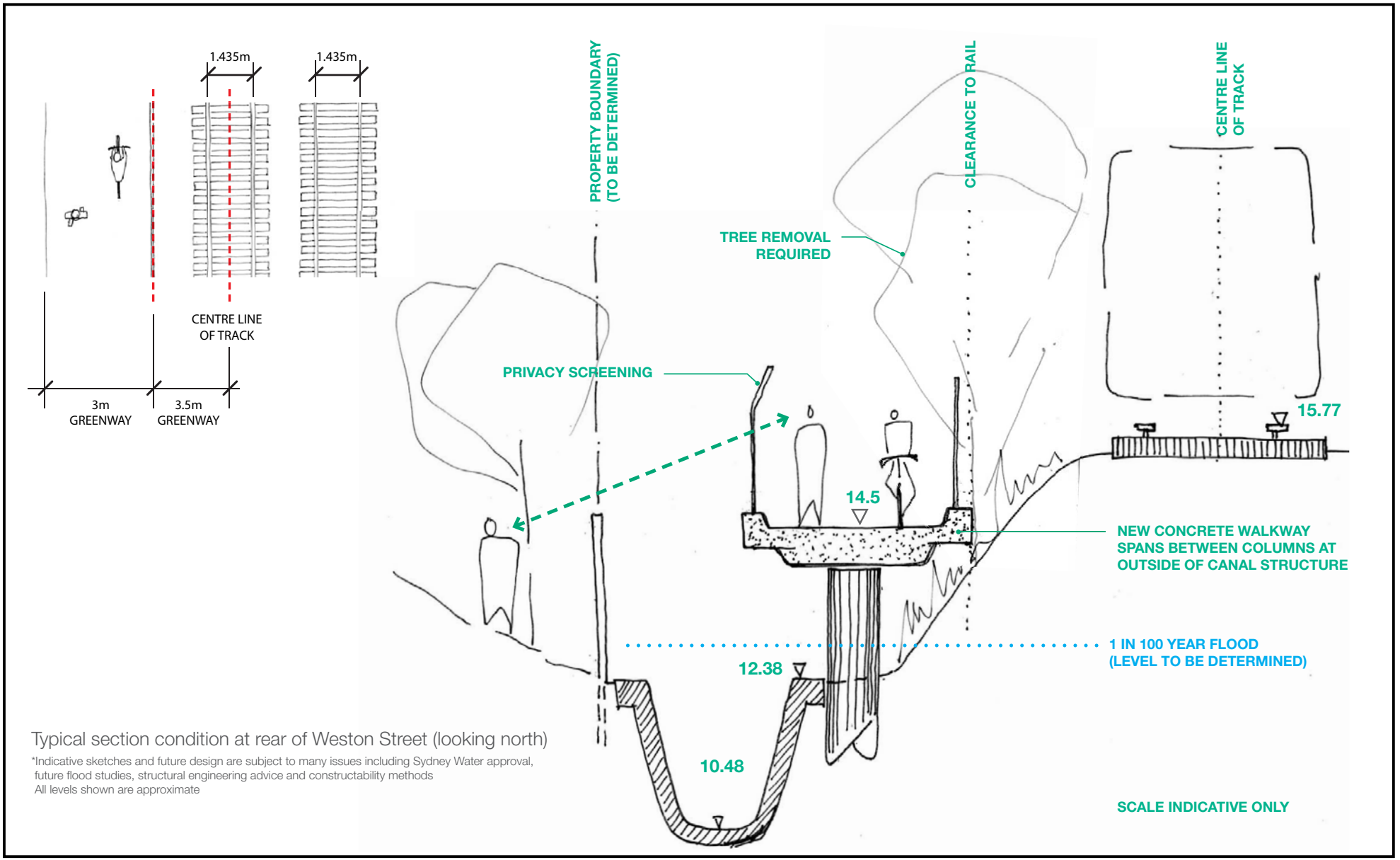


Figure 3.6 Indicative section of the GreenWay shared path at rear of Weston Street – alternative scheme 2

Note: Indicative only, subject to detail design.

3.3 Multi–criteria analysis

A multi criteria analysis (MCA) was undertaken on the alternative schemes to measure the benefits and impacts of each of the alternate schemes against the base case scheme which was presented and assessed within the EA.

The MCA used eight main issue categories to measure each of the schemes against:

- user experience
- stakeholder views
- community feedback
- constructability
- cost
- environmental impacts (including ecology; heritage; flooding and climate change; parking, traffic and access; noise and vibration; and amenity and property)
- environmental sustainability
- safety and security.

For the purpose of the MCA process, the base case was ranked as zero for each of the above categories. Each alternative scheme was then scored against the base case for each of the categories based on whether the alternate scheme provided a benefit (positive score) or adverse impact (negative score) in comparison to the base case.

A workshop was held on 3 November 2010 to confirm the methodology and performance measures and to determine the scores for all categories for each alternative scheme. The workshop was attended by members of the Light Rail Project Team with a broad representation of technical skills to cover off on the relevant issues.

3.4 Preferred schemes

The full results of the MCA are provided in Chapter 4 of the Options Report (included as Appendix A). A summary of the preferred schemes and reasons for the preference are provided below.

3.4.1 Dulwich Hill Interchange stop location

The MCA determined that the alternate scheme 1 is preferred when compared to the base case due to:

- improved connectivity between communities, to the stop from the west side of the rail corridor and to community infrastructure facilities such as Jack Shanahan Park and the GreenWay shared path
- general community acceptance of the scheme
- improved visual amenity, ecological and parking and traffic operational impacts
- improvement in environmental sustainability
- reduction in construction method complexity and construction impacts on the surrounding community
- the cost savings able to be achieved through the design of this scheme.

The MCA did identify that alternative scheme 1 would benefit if the interchange with the heavy rail and bus services and the light rail services could be further improved. To address this area for improvement further design refinement was committed to by Transport NSW.

Results of this design refinement process are presented in Chapter 6 of this report.

3.4.2 Crossing of Marion Street

The MCA determined that the base case is preferred when compared to the alternate scheme due to:

- general community acceptance of the scheme
- improved visual amenity, ecology and environmental sustainability impacts
- reduction in heritage impacts
- ease of construction and reduced construction impacts on the surrounding community
- the cost savings able to be achieved through the design of this scheme.

3.4.3 GreenWay between Davis Street and Old Canterbury Road (Weston Street)

The MCA determined that the base case is preferred when compared to the alternate scheme due to:

- reduction in environmental impacts in particular in relation to heritage, flooding, ecology and noise and vibration (during construction)
- increased privacy and security benefits
- ease of construction and reduced construction impacts on the surrounding community
- the cost savings able to be achieved through the design of this scheme.

The assessment also highlighted that locating the GreenWay shared path within the rail corridor would enhance the user experience. However, this would have environmental impacts, visual amenity issues and cost implications. Construction would be more difficult, but not unachievable.

3.5 Outcome of investigations on alternative schemes

The project will progress with the inclusion of the following:

- the base case for the crossing of Marion Street, as described and assessed in the EA
- the base case for the GreenWay between Davis Street and Old Canterbury Road (on Weston Street), as described and assessed in the EA.

The preferred option for the Dulwich Hill Interchange stop is alternative scheme 1. On balance, this option provides a more cost effective solution whilst maintaining operational functionality and has reduced environmental impacts compared to the scheme presented in the EA. However as identified in Section 3.4.1 it was identified through the MCA process that alternative scheme 1 would benefit if the interchange with the heavy rail and bus services and the light rail services could be further improved. To address this area for improvement further design refinement was committed to by Transport NSW.

Results of this design refinement process are presented in Chapter 6 of this report.

4. Overview of submissions

This chapter provides an overview of submissions received by category of submissions type, including submissions from community members, non–government stakeholders and government authorities and agencies.

Chapter 5 provides Transport NSW's responses to most commonly raised issues. A detailed breakdown of all submissions and responses is provided in Appendices B, C and D.

4.1 Number of submissions received

A total of 197 submissions were received during the exhibition period. These comprised 178 submissions from community members, 10 submissions from non–government stakeholders and nine from government authorities and agencies.

4.2 Submissions analysis process

All community and non–government stakeholder submissions have been categorised according to key issues and specific issues they raised (refer Tables 4.1 and 4.2 respectively). The specific issues raised in community and non–government stakeholder submissions, and Transport NSW's response to these issues, are provided in Appendices B and C respectively. A summary of the most frequently raised issues in community and non–government stakeholder submissions, and Transport NSW's response to these issues, is provided in Section 4.3.1 and 4.3.2, respectively.

Government submissions have been dealt with separately to community and non–government stakeholder submissions due to the number of specific, technical issues that were raised. The specific issues raised in government submissions, and Transport NSW's response to these issues, are provided in Appendix D. A summary of frequently raised issues in government submissions, and Transport NSW's response to these issues, are provided in Section 4.3.3.

4.3 Summary of issues raised in submissions

4.3.1 Community submissions

A breakdown of the key issues raised in community submissions is provided in Table 4.1. Since most submissions raised more than one issue, the number of issues identified in Table 4.1 is greater than the total number of submissions received.

The key issues identified in Table 4.1 have been categorised into topics that correspond with the information presented in the EA. Submissions that raised multiple issues from the same category (e.g. noise and vibration related issues) were only counted once.

As shown in Table 4.1, 'alternative schemes', 'project design', 'visual, landscaping and urban design', 'traffic and transport', 'noise and vibration' and 'ecology and biodiversity' related issues were the most frequently raised issues in community submissions. Additionally, 27% of all community submissions highlighted overall support for the project.

A further breakdown of these key issues into sub–issues is provided in the following sections.

Table 4.1 Summary of the key issues raised in the community submissions

Key issue	Number of submissions raising the issue[1]	Percentage of submissions raising the issue[2]
Alternative schemes	127	71%
Visual impact, landscaping and urban design	56	31%
Project design	54	30%
Project support	48	27%
Traffic and transport	42	24%
Noise and vibration	39	22%
Ecology and biodiversity	29	16%
Consultation	15	8%
Project justification	13	7%
Socioeconomic issues	8	4%
Historical heritage	3	2%
Other issue raised	3	2%
Cumulative impacts	2	1%
Hydrology/groundwater and topography/soils	2	1%
Air quality	1	1%
Hazards and risks	1	1%
Property and land use	1	1%
Sustainability	1	1%

Notes 1: Submissions that raised multiple issues from the same category (e.g. traffic and transport) were only counted once.

2: 178 community submissions were received during the exhibition period. The percentage stated is the number of submissions raising each key issue, relative to the 178 submissions received.

A breakdown of these key issues is provided below and a detailed breakdown of this issue into specific sub–issue categories is presented in Figure 4.1.

Key Issue 1 – Alternative schemes

Alternative scheme related issues were raised in approximately 71% of all community submissions received.

Of the submissions received identifying alternative scheme issues, a series of sub-issues were identified. The most frequently noted sub-issues included, opposition to the preferred option for the construction of the GreenWay shared path on Weston Street (34% of submissions received by the community discussing alternative schemes), support for the preferred stop locations for Arlington and Waratah Mills (28%), opposition for the preferred stop locations for Arlington and Waratah Mills (19%) and opposition to the location of the Dulwich Hill Interchange stop (3%).

Discussion regarding the alignment of the GreenWay shared path along Weston Street and the preferred stop locations for Arlington stop and Waratah Mills stop, and Transport NSW's responses to these issues, is provided in Section 5.1.1. Whilst not raised as frequently in submissions, a discussion regarding the alternate schemes for the Marion Street crossing and the Dulwich Hill Interchange stop location is also provided in Section 5.1.1.

Key Issue 2 – Visual impact, landscaping and urban design

Visual impact, landscaping and urban design related issues were raised in approximately 31% of all community submissions received.

Of the submissions received identifying visual impact, landscaping and urban design issues, a series of sub-issues were identified. The most frequently noted sub-issues included public safety and privacy/amenity (48% and 31% respectively of submissions received by the community which discussed visual impact, landscaping and urban design as an issue).

Discussion of the project's impact on visual impact, landscaping and urban design is provided in Section 5.1.2.

Key Issue 3 – Project design

Project design related issues were raised in approximately 30% of all community submissions received.

Of the submissions received identifying project issues, a series of sub-issues were identified. The most frequently noted sub-issues included the route of the GreenWay shared path - route, stops - construction and design, and general concerns regarding stops (21%, 14% and 13% respectively of submissions received by the community which discussed project design as an issue).

Discussion regarding the GreenWay shared path, stop design and construction, stop locations and Transport NSW's response to these issues is provided in Section 5.1.3.

Key Issue 4 – Project support

Overall support for the project was raised in 27% of all community submissions received. This issue has been noted within the context of all key issues raised by the community but has not been discussed further in this submissions report.

Key Issue 5 – Traffic and Transport

Traffic and transport issues were raised in approximately 24% of all community submissions received.

Of the submissions received identifying traffic and transport issues, a series of sub-issues were identified. The most frequently noted sub-issues included parking for the light rail and operational traffic congestion (46% and 23% respectively of all submissions received by the community which discussed traffic and transport as an issue).

Discussion of traffic and transport issues, and Transport NSW's response to these issues, is provided in Section 5.1.4.

Key Issue 6 – Noise and Vibration

Noise and vibration related issues were raised in approximately 22% of all community submissions received.

Of the submissions received identifying noise and vibration issues, a series of sub-issues were identified. The most frequently noted sub-issues included light rail operation noise impacts and GreenWay shared path operation noise impacts (41% and 39%, respectively of all submissions identifying noise and vibration issues).

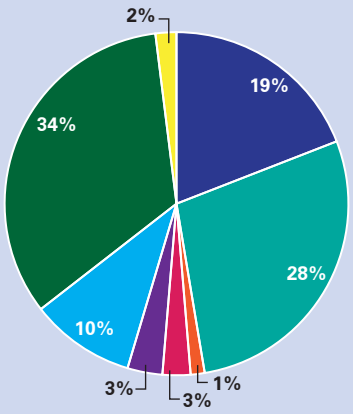
Discussion on noise and vibration issues, as well as Transport NSW's response, is provided in Section 5.1.5.

Key Issue 7 – Ecology and biodiversity

Ecology and biodiversity related issues were raised in 16% of all community submissions received.

Of the submissions received identifying ecology and biodiversity issues, a series of sub-issues were identified. The most frequently noted sub-issues included vegetation clearing and bushcare management (39% and 28% respectively of all submissions received by the community which discussed ecology and biodiversity as an issue).

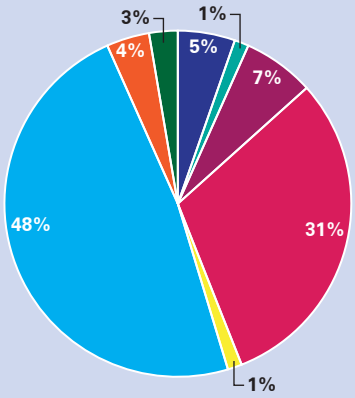
Discussion of the ecology and biodiversity issues, and Transport NSW's response, is provided in Section 5.1.6.



ALTERNATIVE SCHEMES*

- Arlington/Waratah Mills stops - Oppose base case
- Arlington/Waratah Mills stops - Support base case
- Dulwich Hill Interchange stop location - Support base case
- Dulwich Hill Interchange stop location - Oppose base case
- Marion Street crossing - Support base case
- Marion Street crossing - Oppose base case
- Weston Street - Oppose base case
- Weston Street - Support base case

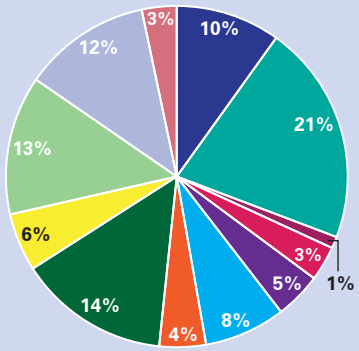
Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 127 project alternative scheme issues raised.



VISUAL IMPACT, URBAN DESIGN AND LANDSCAPING*

- Accessibility
- Assessment methodology and scope
- Light spill
- Privacy and amenity
- Public domain impacts
- Saftey - Public
- Security - GreenWay shared path
- Visual impacts - Operation

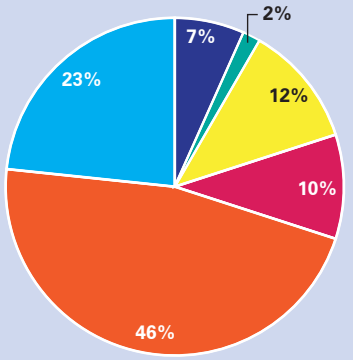
Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 56 visual impact, urban design and landscaping issues raised.



PROJECT DESIGN*

- GreenWay - General
- GreenWay - Routes
- Light rail - Operation
- Light rail track - General
- Light rail track configuration - (length v route)
- Light rail track configuration - (single v double)
- Public transport integration - stop locations / timetable
- Stops - Construction and design
- Stops - Location
- Stops - General
- Ticketing
- User experience

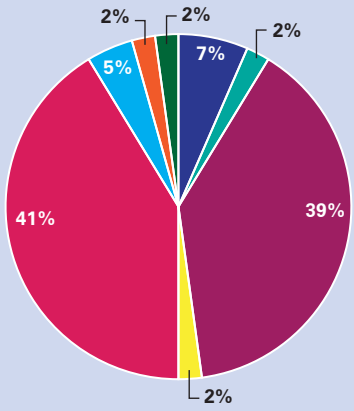
Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 54 project design issues raised.



TRAFFIC AND TRANSPORT*

- Assessment methodology and scope
- GreenWay - General
- GreenWay - Shared street sections
- Parking - GreenWay
- Parking - Light rail
- Traffic congestion

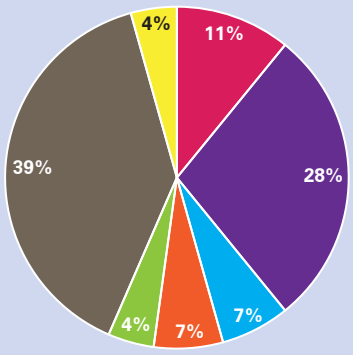
Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 42 traffic and transport issues raised.



NOISE AND VIBRATION*

- Assessment methodology and scope
- Cumulative impacts
- GreenWay - Operation
- Light rail - Construction and design
- Light rail - Operation
- Stops - Operation
- Vibration - Construction
- Vibration - Operation

Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 39 noise and vibration issues raised.



ECOLOGY AND BIODIVERSITY*

- Assessment methodology and scope
- Bushcare management
- Habitat loss
- Light rail - Operations
- Threatened species/communities
- Vegetation clearing
- Weeds and pests

Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 29 ecology and biodiversity issues raised.

Figure 4.1 Analysis of the specific project issues raised in community submissions

4.3.2 Non–government stakeholder submissions

A breakdown of the key issues raised in non–government submissions is provided in Table 4.2. Non-government stakeholders are defined as recognised groups which are not official government agencies or authorities. Since most submissions raised more than one issue, the number of issues identified in Table 4.2 is greater than the total number of submissions received. The key issues identified in Table 4.2 have been categorised into topics that correspond with the information presented in the EA. Submissions that raised multiple issues from the same category (e.g. noise and vibration related issues) were only counted once.

As shown in Table 4.2, 'project design', 'alternative schemes' and 'ecology and biodiversity' related issues were the most frequently raised issues in non–government stakeholder submissions. Additionally, 80% of all non-government stakeholder submissions highlighted overall support project.

A further breakdown of these key issues into sub–issues is provided in the following sections.

Table 4.2 Summary of the key issues raised in the non–government stakeholder submissions

Key issue	Number of submissions raising the issue[1]	Percentage of submissions raising the issue[2]
Project design	10	100%
Project support	8	80%
Alternative schemes	7	70%
Ecology and biodiversity	4	40%
Consultation	4	40%
Traffic and transport	3	30%
Visual impact, landscaping and urban design	3	30%
Contamination/spoil/waste	2	20%
Hydrology/groundwater and topography/soils	2	20%
Other issue raised	2	20%
Project justification	2	20%
Noise and vibration	1	10%
Sustainability/GHG/Climate Change	1	10%

Notes 1: Submissions that raised multiple issues from the same category (e.g. traffic and transport) were only counted once.

2: 10 non–government stakeholder submissions were received during the exhibition period. The percentage stated is the number of submissions raising each key issue, relative to the 10 submissions received.

A breakdown of these key issues is provided below and a detailed breakdown of this issue into specific sub–issue categories is presented in Figure 4.2.

Key Issue 1 – Project design

Project design related issues were raised in 100% of all non-government stakeholder submissions received.

Of the submissions received identifying project design, a series of sub-issues was identified The most frequently noted sub-issues included general issues regarding the GreenWay shared path (raised in 26% of all non-government stakeholder submissions raising project design as an issue), the route of the GreenWay shared path (23%) and general concerns regarding the proposed stops (13%).

Discussion of issues relating to the GreenWay shared path, and Transport NSW's response, are provided in Section 5.1.3.

Key Issue 2 – Project support

Overall support for the project was raised in 80% of all non-government stakeholder submissions. This issue has been noted within the context of all key issues raised by non-government stakeholders but has not been discussed further in this submissions report.

Key Issue 3 – Alternative schemes

Alternative scheme related issues were raised in 70% of all non-government stakeholder submissions received.

Of the submissions received identifying alternative scheme issues, a series of sub-issues were identified. The most frequently noted sub-issues included opposition to the preferred Marion Street at-grade signalised crossing, support for the provision of the GreenWay shared path along Weston Street and opposition to the preferred stop locations for Arlington and Waratah Mills stops (46%, 23% and 15% respectively of all non-government stakeholder submissions raising alternative schemes as an issue).

Discussion regarding the alternate schemes, and Transport NSW's response, are provided in Section 5.1.1.

Key Issue 4 – Ecology and biodiversity

Ecology and biodiversity related issues were raised in 40% of all non-government stakeholder submissions received.

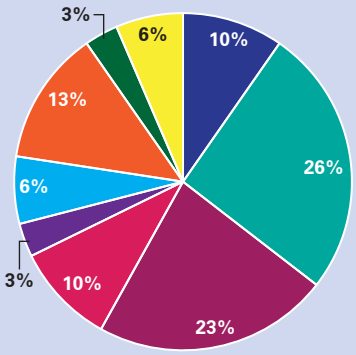
Of the submissions received identifying alternative scheme issues, a series of sub-issues were identified. The most frequently noted sub-issues included bushcare management and threatened species/communities (27% and 20% respectively of all non-government stakeholder submissions raising ecology and biodiversity as an issue).

Discussion of the project's impact on ecology and biodiversity, and Transport NSW's response, are provided in Section 5.1.6.

Key Issue 5 – Consultation

Consultation related issues were raised in 40% of all non-government stakeholder submissions received.

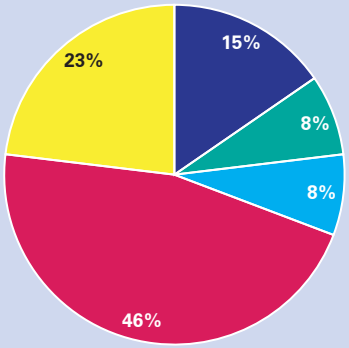
Of the submissions received identifying consultation issues, two sub-issues were identified. These sub-issues were the need for future consultation with stakeholders (four submissions or 80% of all non-government stakeholder submissions raising consultation as an issue) and inadequacy of the consultation to date (one submission or 20% of all non-government stakeholder submissions raising alternative schemes as an issue).



PROJECT DESIGN*

- GreenWay - Bushcare
- GreenWay - General
- GreenWay - Routes
- Light rail track configuration (single v double)
- Public transport integration - stop locations / timetables
- Stops - Construction and design
- Stops - General
- Stops - Location
- Ticketing

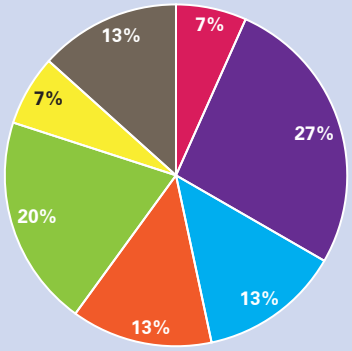
Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 10 project design issues raised.



ALTERNATIVE SCHEMES*

- Arlington/Waratah Mills stops - Oppose base case
- Arlington/Waratah Mills stops - Support base case
- Dulwich Hill Interchange stop location - Support base case
- Marion Street crossing - Oppose base case
- Weston Street - Support base case

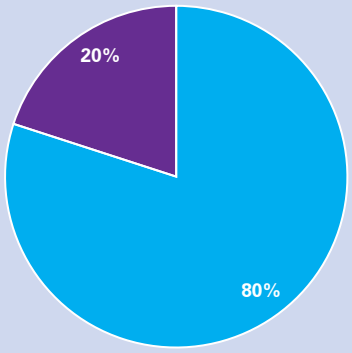
Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 7 project alternative scheme issues raised.



ECOLOGY AND BIODIVERSITY*

- Assessment methodology and scope
- Bushcare management
- GreenWay - Bushcare
- Habitat loss
- Threatened species/communities
- Vegetation clearing
- Weeds and pests

Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 4 ecology and biodiversity issues raised.



CONSULTATION*

- Future consultation process
- Inadequate consultation

Note: * Percentage stated is the number of submissions raising each sub-issue, relative to the 4 consultation issues raised.

Figure 4.2 Analysis of the specific project issues raised in non-government stakeholder submissions

4.3.3 Government submissions

A summary of the key issues raised by each government authority and agency is provided in Table 4.3. Discussion of issues raised frequently by multiple government authorities and agencies and Transport NSW's response to these issues are provided in Section 5.2 of this report. A complete list of issues raised in government submissions, including Transport NSW's response to these issues, is provided in Appendix D.

Table 4.3 Summary of issues raised in government submissions

Government authority or agency	Key issues raised
State Transit Authority	▪ overall support for the project ▪ bus stops identified as interchange bus stops need to be DDA compliant, and if not, upgraded appropriately ▪ consultation with the State Transit Authority should be undertaken during detailed design.
Leichhardt Council	▪ overall support for the project ▪ opposition to the preferred design option regarding the Marion Street signalised crossing ▪ extension of the GreenWay shared path to the CBD ▪ consultation with Leichhardt Council should be maintained during detailed design ▪ ensure the preservation of existing sensitive environmental and bushcare sites along the proposed GreenWay shared path ▪ Leichhardt Council should be involved in the preparation of the CEMP ▪ consideration of dust, dirt and soil waste, noise and vibration, drainage, existing wetland areas, damage to existing habitats including 'over growth' or 'weed dominated' area ▪ the light rail's design should consider significant heritage items – Battle Bridge, Lewisham Railway Viaduct and Sewage Aqueduct ▪ landmark trees within the project area should be retained ▪ the proposed pedestrian bridge across Hawthorne Canal should be constructed as a shared pedestrian/cycle bridge ▪ incorporate best practice Safety by Design and full DDA compliance ▪ integration with the complete Sydney Transport Network in terms of ticketing, timetabling, information and promotion.

Government authority or agency	Key issues raised
DECCW	▪ carry out contamination testing in those areas deemed to be at high risk of contamination ▪ methodology for assessment of threatened species (Long-nosed Bandicoot) ▪ mitigation measures for the project are not adequately explained ▪ vegetation clearing and restoration of bushcare sites ▪ noise assessment and mitigation ▪ conditions of consent (recommendations).
Railcorp	▪ overall support for the project ▪ ongoing consultation required between Railcorp and Transport NSW during detailed design.
Ashfield Council	▪ overall support for the project ▪ opposition to the preferred design option regarding the Marion Street at-grade signalised crossing ▪ consultation with Ashfield Council should be maintained during detailed design regarding GreenWay shared path alignment ▪ carry out contamination testing before any bushcare sites are established ▪ gradual staging for weed removal ▪ further consideration of important habitat for Long-nosed Bandicoot in the Inner West is required ▪ acoustic fencing/sound barriers should be considered at certain locations ▪ amendment of stop names ▪ on-going funding of the GreenWay shared path ▪ vegetation screening of the project from adjoining residents ▪ signage and wayfinding integration with the established visual identity and branding created for the GreenWay shared path ▪ parking for the light rail.
RTA	▪ opposition to the preferred design option regarding the Marion Street signalised crossing ▪ local street traffic flow design considerations ▪ construction work method statements.

Government authority or agency	Key issues raised
Marrickville Council	▪ overall support for the project ▪ opposition to the preferred design option of the GreenWay shared path on Weston Street ▪ consultation with Marrickville Council should be maintained during detailed design regarding GreenWay shared path alignment ▪ minimising impacts on existing bush regeneration areas ▪ improved management and treatment of stormwater ▪ future extensions to the light rail network including potential extensions to Ashfield and Sydenham ▪ integration of the ticketing system for the light rail with the existing MyZone scheme ▪ locations of the Lewisham West and Dulwich Hill Interchange stops
Department of Planning (Heritage Branch)	▪ amendment and additions to the draft statement of commitments including statement of commitments referencing the HMP and Interpretation Strategy ▪ conditions of consent (recommendations)
City of Sydney Council	▪ overall support for the project ▪ GreenWay shared path should be the same grade as the light rail tracks for the entirety of the route and aligned with the rail corridor ▪ maximising bicycle storage areas at stops ▪ GreenWay shared path patronage forecasts

5. Responses to submissions

This chapter provides Transport NSW responses to the most commonly raised issues in the community, non-government stakeholder and government submissions. A detailed breakdown of all submissions and Transport NSW complete responses are provided in Appendices B, C and D.

5.1 Responses to community and non-government stakeholder submissions

This section details the most frequently raised issues in community and non-government stakeholder submissions received on the project (as identified in Tables 4.1 and 4.2) and Transport NSW response to these issues. Individuals/groups seeking a specific response to their individual submission are referred to Appendix B and C.

5.1.1 Alternative schemes

Arlington and Waratah Mills stops

At the community consultation sessions held during the preparation of the EA in August (see Section 2.1.4) an alternative scheme for the Arlington and Waratah Mills stops was presented. The alternative scheme included replacing these two stops with a single stop located at Terry Road/Hill Street. Design development during the EA preparation concluded that the project would see maximum benefit from including the two separate Arlington and Waratah Mills stops and as a result the alternative scheme was not presented in the EA.

Despite the findings presented in the EA, the community and non-government stakeholders have lodged submissions on this element of the project.

Overall, 43 community submissions expressed support for the Arlington and Waratah Mills stops remaining as separate stops as proposed in the EA. However, 29 community submissions were opposed to this, and requested that the stops be combined to form a single stop at Terry Road/Hill Street.

Three submissions from non-government stakeholders raised issues on this element of the project. Of these, one was in support of Arlington and Waratah Mills stops to remain as separate stops and two submissions were in favour of combining the two stops.

An assessment of stop location options was undertaken in July 2010 by GHD and presented in the *Sydney Light Rail Inner West Extension Study - Final Report*. The results of the options assessment and a rationale for the preferred nine stops were discussed in Section 5.1 of the EA. The number of stops and stop locations were selected to provide maximum benefit to the community based on elements such as maximising potential catchments and accessibility to the stops. Based on this selection process and further design, patronage and catchment assessments carried out during the preparation of the EA, Transport NSW determined that the project would benefit from having nine separate stops in the locations presented in Chapter 6 of the EA, including the Waratah Mills and Arlington stops as separate stops.

No change to the number of stops is proposed based on review of issues raised in submissions. The project is proposed with separate Waratah Mills and Arlington stops. Transport NSW note that the alternative scheme for this aspect was not presented in the EA or considered in the alternative schemes options assessment discussed in Section 3 of this report.

GreenWay between Davis Street and Old Canterbury Road (Weston Street)

Issues relating to the location of the GreenWay on Weston Street between Davis Street and Old Canterbury Road were raised in 54 community submissions. Of these community submissions, 51 expressed support for the alternative schemes presented in the EA which would include the GreenWay in the rail corridor at the rear of the Weston Street properties and remove the GreenWay from travelling on-street on Weston Street (the base case scheme presented in the EA). The other two of the community submissions expressed support for the base case.

Three of the non-government stakeholder submissions received expressed support for the base case. No non-government stakeholder submissions received opposed the base case.

In the EA Transport NSW committed to carrying out further investigations and an options assessment process on this element of the project. These activities have been completed as detailed in Sections 3.2.3 and 3.4.3. As a result of the further investigations and options assessment process no change to the location of the GreenWay between Davis Street and Old Canterbury Road, as presented in the EA, is proposed based on submissions received.

Crossing of Marion Street for pedestrians and cyclists

Issues relating to the pedestrian and cyclist crossing of Marion Street were raised in 20 community submissions and six non-government stakeholder submissions. Five of these community submissions and all of the non-government stakeholder submissions expressed support for the alternative scheme presented in the EA, which would include a bridge crossing for pedestrians and cyclists over Marion Street as opposed to the base case which included a signalised crossing of the street. The other two community submissions expressed support for the base case.

In the EA, Transport NSW committed to carrying out further investigations and an options assessment process on this element of the project. These activities have been completed as detailed in Sections 3.2.2 and 3.4.2. As a result of the further investigations and options assessment process no change to the crossing of Marion Street, as presented in the EA, is proposed based on submissions received.

Dulwich Hill Interchange stop location

Issues relating to the location of the Dulwich Hill Interchange stop were raised in six community submissions and one non-government stakeholder submission. Four of these community submissions and the non-government stakeholder submission expressed support for the stop location as proposed in the EA. The other two community submissions expressed support for one of the alternative schemes.

In the EA Transport NSW committed to carrying out further investigations and an options assessment process on this element of the project. These activities have been completed as detailed in Sections 3.2.1 and 3.4.1. As a result of the further investigations and options assessment process the location of the Dulwich Hill Interchange stop has been modified from that proposed in the EA. A description of the project design change is included in Chapter 6 of this report.

5.1.2 Visual impact, landscaping and urban design

Public safety

A total of 36 community submissions received raised issues relating to public safety. The most frequent concerns relating to public safety were for Weston Street, with some concerns also raised regarding safety for pedestrians on Hathern Street and cyclists within Richard Murden Reserve.

A number of safety issues were raised by Weston Street residents regarding the potential for conflict to occur between GreenWay shared path users and residents of Weston Street. The main issue raised was in relation to cars backing out of driveways and colliding with pedestrians (on the footpath) and cyclists (on the road) using the GreenWay shared path.

As identified in Section 14.6.2 of the EA, signage and appropriate line markings would be provided as appropriate along the GreenWay shared path to advise of the shared path conditions and raise road user awareness. Additionally, within Weston Street, the GreenWay would be split to include cyclists on the public street and pedestrians on the public footpath. As such, appropriate safety precautions for residents and GreenWay users would apply in a similar manner to any other public street.

Concerns were also raised regarding the proposed pedestrian access ramp from Hathern Street to Taverners Hill stop. The issue relates to the location of the pedestrian path on a blind corner. It is considered by many of the submissions that this may present a safety issue for pedestrians crossing the street to access the light rail stop. Transport NSW would undertake a review of pedestrian safety with respect to Hathern Street and access to Taverners Hill stop during detailed design. Appropriate design measures would be determined to minimise safety risks. In addition to this an additional Statement of Commitment (SoC number 31A) has been added to investigate the feasibility of including an additional access path to the Taverners Hill stop from Beeson Street.

The third main issue raised by the community with respect to public safety was the proposed GreenWay shared path within Richard Murden Reserve. It is considered that this pathway should be made into a cycle-only path where it is proposed to be constructed parallel to the existing pathway within the reserve to allow for increased safety for both pedestrians and cyclists. Transport NSW's response to this concern is that the proposed route is considered the most effective and efficient route which meets the needs of all proposed users of the pathway. Signs and line markings would be provided as appropriate along the GreenWay shared path to advise of the shared path conditions and make people aware of operating conditions.

Privacy and amenity impacts

A total of 23 community submissions received raised issues relating to privacy and amenity impacts. The most frequent issues raised related to privacy and amenity impacts from residents within Weston Street, with some issues also raised regarding privacy and amenity impacts from residents within Bedford Crescent, Davis Street, Hawthorne Parade, Marion Street and surrounding Taverners Hill stop.

Overall, a majority of the privacy and amenity issues raised related to concerns from residents on Weston Street. These concerns were raised as a result of the potential impacts resulting from the GreenWay shared path and light rail bordering both the front and rear of the properties on the eastern side of the street. As noted in Section 14.6 of the EA, to mitigate the potential privacy impacts at the rear of Weston Street properties, vegetation screening would be used to minimise visual intrusion. If this could not be done or would not provide adequate privacy, additional urban design elements, such as retaining walls, barriers, fence or other screening designs, would be considered to improve the privacy of existing sensitive receivers. These measures would be considered, as required, during the detailed design of the project. With respect to privacy impacts from the GreenWay on street section these impacts are not predicted to be significant as users of the GreenWay would be travelling along an existing public street on the footpath and roadway.

The concerns relating to privacy and amenity along the remainder of the project length would be dealt in the same manner as identified for Weston Street with respect to consideration of vegetation screening or other urban design elements. These measures would be considered, as required, during the detailed design of the project.

5.1.3 Project design

GreenWay shared path – Routes

Issues relating to the GreenWay shared path route were raised in 19 community submissions and seven non-government stakeholder submissions. Of these, both the community and non-government submissions expressed support for extending the GreenWay shared path as a cycling route to the CBD (eight and five submissions respectively). Additionally, 11 community submissions and four non-government submissions expressed support for extending the GreenWay shared path route over the Cooks River.

Transport NSW notes that both of these extensions to the proposed GreenWay shared path are valid pedestrian and cycling links for the future. However, these components are not included in the scope of works proposed by Transport NSW as part of the project.

GreenWay shared path – General

Issues relating to the GreenWay shared path were raised in seven non-government stakeholder submissions and seven community submissions. Of these submissions, the key issues identified were related to the proposed bridge over Hawthorne Canal as well as how signage and wayfinding will be integrated with the established visual identity and branding of the GreenWay.

The main issue with respect to the proposed bridge over Hawthorne Canal was the potential for light rail passengers to access Hawthorne stop through the off-leash dog park adjacent to Hawthorne Canal. It was considered that this would create potential issues between dogs and light rail passengers accessing the Hawthorne stop. With regard to this issue, the location of the new bridge over Hawthorne Canal has been sited to provide the most effective and efficient access to the new Hawthorne stop for passengers accessing the stop from the western side of Hawthorne Canal. The final design and functionality of the proposed bridge across the Hawthorne Canal will be determined during detailed design of the project. This will take into account safety issues and seek to minimise conflicts between users of the off-leash dog park area, the children's play area on the western side of Hawthorne Canal and the light rail.

The other shared path issue raised by the community and non-government stakeholder respondents was how signage and wayfinding for the GreenWay shared path will be designed and integrated with the existing visual identity and branding which has already been established by the GreenWay Sustainability Project.

As identified in Statement of Commitment 5, additional consultation during detailed design (through the community and stakeholder involvement plan) with relevant stakeholders would be undertaken to ensure that there is a co-ordinated approach between the GreenWay shared path and the light rail with regards to signage. Additionally, as discussed in Section 12.5.2 of the EA, an Interpretation Strategy would be finalised during detailed design, in consultation with the GreenWay Steering Committee.

Implementation of the strategy would include the development and installation of interpretation signage, information boards and other physical displays along the GreenWay. This signage would aim to be consistent with the established visual identity for the GreenWay shared path.

Stop construction and design

Issues relating to stop construction and design were raised in 13 community submissions and in two non-government stakeholder submissions. Of these submissions, the main issues related to the potential construction of the pedestrian ramp at Taverners Hill on Hathern Street (addressed previously in Section 5.1.2) and the potential conflicts which may occur between passengers of the light rail and GreenWay shared path users.

It was identified in the EA that access to each stop was considered in the development of the stop design (Section 6.2.4 of the EA) to provide passengers with convenient access to the light rail network whilst integrating efficiently with other transport modes and the GreenWay shared path. The exact location and detail of the access components at each stop (such as the final placement of lifts and stairs) would be subject to further detailed analysis during detailed design.

General concerns at stops

General issues relating to the construction and design of the proposed light rail stops were raised by the community in five community submissions and four non-government stakeholder submissions. Of these submissions, the key concerns related to the potential construction of the pedestrian ramp at Taverners Hill on Hathern Street (addressed previously in Section 5.1.2), general accessibility to the stops for mobility impaired users and the stop names for Taverners Hill and Marion stops.

With respect to the accessibility of the stops, Section 6.2.4 of the EA identified that access to all of the stops would comply with the *Disability Discrimination Act 1992* (DDA) Public Transport Standards 2002, the DDA Access Code 2010, as well as the Building Code of Australia with respect to access for persons with a disability.

Additionally, paving for the platforms and paths would be a non-slip surface with contrasting edging material and incorporation of tactile surfaces. This design is consistent with the existing stop design for the current light rail network which aims to minimise the potential risk for all passengers.

In relation to the proposed stop names for Taverners Hill stop (suggested to be changed to Battle Bridge) and Marion stop (suggested to be changed to Lambert Park) the names for each of the stops aim to be geographically accurate, recognise any historic or iconic value of place, maximise community ownership, and be consistent with CityRail's policy (as noted in Section 6.2.3 of the EA). All stop names would be subject to the Geographical Names Boards' approval, however Transport NSW's preference is to retain current name for historic context.

Stop locations

Issues relating to stop locations were raised in community and non-government stakeholder submissions. The key concerns related to the locations of Waratah Mills stop, Arlington stop, Marion stop and Lewisham West stop. The issues regarding Waratah Mills and Arlington stops have been addressed separately in Section 5.1.1.

The main issue raised with the Marion stop location was that it should be relocated to the south side of Marion Street closer to Lambert Park. With respect to Lewisham West, the main issue raised was that the stop should be moved further north to more closely integrate with Lewisham Railway Station. In response, the preferred location of each stop was determined by Transport NSW following an options assessment prepared by GHD in July 2010. This options assessment (summarised in Section 5.1 of the EA) identified a number of key criteria to determine the best location of stops based on factors including:

- potential catchments
- existing transport routes (bus and rail)
- retail areas and key local connectors
- accessibility
- personal security and surveillance
- constructability
- operational constraints (e.g. desirability of locating platforms on straight track)
- visual impact.

With respect to Marion stop, it is considered that the proposed location is appropriate and provides the following advantages:

- the northern side location provides direct access to the Marion retirement home
- opportunities also exist for urban renewal to occur to the north
- Lambert Park generates relatively infrequent use and will continue to be easily accessible
- Leichhardt Marketplace is within walking distance to the east
- minimises impact on existing vegetation within the rail corridor.

With respect to Lewisham West stop, it is considered that the proposed location is appropriate and provides the following advantages:

- the proposed stop will more appropriately integrate with the future urban renewal sites of adjoining parcels of land
- Lewisham train station is within walking distance of the proposed stop location and the connection will utilise existing street footpaths
- provides good connections to the existing bus stop locations on Old Canterbury Road (near Hudson Street intersection) for route 413 bus services.

It is considered that the proposed locations of these stops are appropriate and are not proposed to be moved as part of the project.

5.1.4 Traffic and transport

Parking for the light rail

On-street parking impacts associated with the operation of the light rail was the most commonly raised traffic and transport sub-issue in community submissions. The issues raised related primarily to concerns that light rail users would park on residential streets thereby adversely impacting residents by removing on-street parking in the streets around light rail stops.

The traffic assessment undertaken for the EA (Technical Paper 1) determined that based on patronage numbers, the project would not have an impact on the availability of parking in streets surrounding the proposed stops as the majority of light rail users would walk to the stop. The number of people who will park and ride has been based on patronage numbers of the existing light rail plus a modest annual patronage growth, an increase in patronage associated with trips diverted from existing modes and the trips generated from proposed developments next to the project corridor.

As a result of the feedback from the community at the community information sessions and through other project consultation media relating to parking impacts from the project Transport NSW commissioned further parking surveys of the immediate areas surrounding the proposed light rail stops to further assess the current (pre-operation) availability of parking in these areas. The survey involved counting the number of parked vehicles (demand) and all available (supply) 'unrestricted' on-street parking spaces on a weekday (before 8:00 am and after 10:00 am) and on weekends (between 10:00 am and 3:00 pm on a Saturday and a Sunday) within 300 metres of the light rail stops. A summary of the results of the parking survey is presented in Table 5.1.These additional surveys determined that within 300 metres of the stops the supply of car spaces potentially available for light rail users is greater than the anticipated demand. The parking survey report is provided in full as Appendix E of this report.

Table 5.1 Supply and demand of unrestricted[1] on-street parking spaces around light rail stops

Proposed light rail stop	Demand (occupied)				Supply
	5 am to 8 am Tuesday	10 am to 3 pm Tuesday	10 am to 3 pm Saturday	10 am to 3 pm Sunday	(all unrestricted[1] spaces)
Leichhardt North	275	236	234	234	354
Hawthorne	356	274	301	301	738
Marion	282	197	230	256	392
Taverners Hill	370	327	331	31	445
Lewisham West	227	211	207	173	418
Waratah Mills	466	291	419	408	857
Arlington	313	221	266	300	455
Dulwich Grove	181	183	215	189	361
Dulwich Hill Interchange	295	303	285	272	542
Total	**2,765**	**2,243**	**2,488**	**2,164**	**4,562**

Notes 1: Where 'unrestricted' on-street parking excludes streets subject to Resident Parking Schemes.

Additionally, as stated in Statement of Commitment 7, Transport NSW will undertake on-site monitoring of the commuter parking in consultation with local councils and the Roads and Traffic Authority (RTA) following the first year of operation. The monitoring would provide a mechanism of testing the assumptions from the traffic and transport assessment with respect to parking requirements. Dependant on the outcomes of this monitoring mitigation measures such as resident parking schemes would be considered and implemented by the relevant Councils as required.

Operational traffic congestion

Concerns about traffic congestion impacts from the operation of the light rail, particularly around Marion Street, Hawthorn Parade and Hathern Street, were the second most commonly raised traffic and transport sub-issue in community submissions. The traffic and transport impact assessment (Technical Paper 1 of the EA) determined that the project would generate a low number of trips and is unlikely to have a significant impact on traffic performance of the existing road network.

5.1.5 Noise and vibration

GreenWay operation noise impacts

A total of 18 community submissions received raised concerns about noise impacts from the operation of the GreenWay. In these submissions the most frequently raised issues related to impacts on Weston Street residents from the GreenWay operating at the front of properties on Weston Street.

For most of the time, noise from cyclists, pedestrians and joggers using the GreenWay is unlikely to be audible within residential properties. Furthermore, the GreenWay would be utilised primarily during daylight hours and, if audible, the noise from cyclists, pedestrians and joggers passing by would be intermittent in nature and not considered to be intrusive. Guidance on community noise and offensiveness is contained in the DECCW's *Noise Guide for Local Government* (2010), which distinguishes between 'noise' and 'offensive noise' as defined in the *Protection of the Environment Operations Act 1997* (the POEO Act). It is considered that according to the guidance and case studies described in the *Noise Guide for Local Government,* noise from cyclists, pedestrians and joggers using the GreenWay does not meet the definition of 'offensive noise'.

Concerns were also raised with respect to the cumulative impacts on Weston Street residents from noise from the GreenWay at the front of the properties, the operation of the light rail at the rear of the properties and the operation of the Waratah Mills stop at the end of Weston Street. Noise impacts from the GreenWay have been discussed above.

Operational noise from the light rail has been assessed along the length of the extension and is presented in Chapter 11 of the Environmental Assessment. Noise levels are predicted to comply with the project criteria at this location. The cumulative impacts of the project in this location are not predicted to be significant.

Light rail operation noise and vibration impacts

Nineteen community submissions received raised issues relating to concern about noise impacts from the operation of the light rail. The most frequent concerns related to impacts from the light rail operations on residents on Hathern Street, Weston Street, Hawthorne Parade and Marion Street.

Operational noise from the light rail has been assessed along the length of the extension and is presented in Chapter 11 of the EA. No exceedances for the daytime noise goals are predicted for any residences along the alignment. Exceedances of the residential noise goals during the evening and night time periods have been predicted at seven residential locations between the Lewisham West and Arlington stops, as detailed in Table 11.17 of the EA. No exceedances of the residential noise goals during the evening and night time periods were identified on Hathern Street, Weston Street, Hawthorne Parade or Marion Street.

No exceedances of the noise goals from the operations of the project have been identified for sensitive non-residential receivers.

As identified in Statement of Commitment 14 and in Section 11.4.3 of the EA, Transport NSW has committed to carrying out attended measurements of operational noise after operations begin at the locations where exceedances of noise goals are predicted. Monitoring would confirm whether there were exceedances of the noise goals at these locations and determine if mitigation measures are required. Attended measurements would also be taken at other representative locations across the project area to validate the noise predictions and to determine if any additional mitigation of noise impacts is required.

5.1.6 Ecology and biodiversity

Vegetation clearing

Concerns about vegetation clearing along the corridor were the most commonly raised ecology and biodiversity sub-issue in community submissions.

Some of the submissions had concerns about vegetation clearing at specific sites. In total 1.78 hectares (see Table 7.2 of this report) of vegetation would be impacted on as part of the project. The EA has considered the loss of all vegetation as a result of the project and it is not considered to be a significant impact. Appropriate mitigation and offset measures have been proposed and incorporated into Statement of Commitments 18 and 20.

Some submissions requested that Arlington and Waratah Mills stops are merged to reduce the impact of bushcare site. The issues regarding Waratah Mills and Arlington stops have been addressed previously in Section 5.1.1. The EA and the Ecological Assessment (Technical Paper 4) have assessed the impact of vegetation loss at this location and whilst some local provenance plant species are starting to self-seed, a significant portion of this area is dominated by weeds.

Bushcare management

Concerns about bushcare management were the second most commonly raised ecology and biodiversity sub-issue in community submissions. The concerns were primarily related to the long term management of bushcare sites and the project's impact on flora and fauna.

The loss of bushcare sites has been assessed in the EA and is presented in Chapter 13 of the EA and in Technical Paper 4. Approximately 0.7 hectares of the existing bushcare sites would be impacted by the project. To offset this impact a total of 1.7 hectares of future bushcare sites is proposed. These sites have been identified in Figures 6.1a–6.1e in the EA however as identified in Statement of Commitment 20, the final locations would be determined in consultation with the Inner West Environment Group (IWEG).

As identified in Statement of Commitments 18 and 22 a flora and fauna management plan and a weed management plan would be prepared for this project to manage bushcare sites in the long term. The weed management plan would be developed in consultation with the IWEG and local Councils and would take into consideration, where relevant and appropriate, the *Draft GreenWay Revegetation and Bushcare Plan* (Ecological, October 2010). Weed removal would be staged and take place in accordance with the *Noxious Weeds Act 1993* whilst not adversely impacting on potential habitat for the Long-nosed Bandicoot.

Threatened species/communities management

Concern about the management of threatened species and communities during the construction and operation of the project was the third most commonly raised ecology and biodiversity sub-issue in community submissions.

No remnant vegetation communities were located within the study area. Any reference to remnant vegetation within Technical Paper 4 of the EA refers to isolated mid-storey species. The management of native vegetation is described above in the bushcare management section.

There is historical evidence of the Long-nosed Bandicoot occurring along the corridor. Concerns were raised that the surveys and assessment for the Long-nosed Bandicoot were inadequate. Night-time access to the rail corridor was not possible due to safety restrictions during the EA. Therefore the assessment relied on previous surveys and reports and the diurnal surveys undertaken. In addition to this, an additional Statement of Commitment has been included in Table 9.1 (SoC number 21B) states that pre-clearing surveys of all vegetation to be cleared for Long-nosed Bandicoots would be undertaken prior to disturbance.

5.1.7 Consultation

Consultation issues were raised in 40% of non-government stakeholder submission. The primary concern raised in the submissions was the need for future consultation with stakeholders during the future processes of the project. As discussed in Chapter 2 of this report, and committed to in Statement of Commitment 5 (refer to Table 9.1), ongoing consultation with identified stakeholders would continue throughout the detailed design and future development of the project. Non-government stakeholders which would be involved in future consultation processes would include (but not be limited to) EcoTransit Sydney, Friends of the GreenWay, GreenWay Steering Committee and the Inner West Environment Group.

5.2 Responses to government submissions

This section provides a summary of the issues raised frequently in government submissions and Transport NSW's response to these issues. Responses to specific issues raised by each government department, agency or stakeholder are provided in Appendix D.

5.2.1 Consultation

The State Transit Authority, RailCorp, and Marrickville, Leichhardt and Ashfield councils all requested in their submissions that certain consultation activities are undertaken should the project be approved and progress through to detailed design, construction and operation phases. Statement of Commitment 5 identifies that a community and stakeholder involvement plan would be prepared. Each of these government agencies/stakeholders would be identified as a project stakeholder and would therefore be consulted on aspects of the project going forward.

The specific issues which the agencies and stakeholders requested consultation on are included in Appendix D along with Transport NSW's response with regard to future consultation on each of these issues as appropriate.

The DECCW raised one issue with respect to ongoing consultation with the community. The DECCW requested that Statement of Commitment 5 should include a requirement for the proponent to notify the public of the existence and purpose of the 24 hour complaints line. Transport NSW has accepted this request and has updated Statement of Commitment 5 to reflect these elements.

5.2.2 Ecology and biodiversity

Ashfield, Marrickville and Leichhardt Councils and the DECCW raised issues relating to the management of bushcare sites.

Leichhardt Council has requested Transport NSW undertake revegetation in accordance with the *Draft GreenWay Revegetation & Bushcare Plan* (ecological, October 2010) whilst the DECCW requested that any removal of noxious weeds be undertaken in a staged manner which did not adversely impact on vegetative cover which the Long-nosed Bandicoot may rely upon. As identified in Statement of Commitment 22 a weed management plan would be prepared and staged, in accordance with the *Noxious Weeds Act 1993,* whilst not adversely impacting on potential habitat for the Long-nosed Bandicoot. This plan would also take into consideration, where relevant and appropriate, the *Draft GreenWay Revegetation and Bushcare Plan* (ecological, October 2010).

The DECCW has concerns regarding the extent of assessment of the Long-nosed Bandicoot. It is believed that the reliance on previous studies is not considered to be an appropriate level of survey to detect the presence of the Long-nosed Bandicoot.

Whilst targeted diurnal surveys were undertaken for this project, nocturnal surveys were not possible due to access restrictions at night due to safety concerns associated with the current track upgrading works occurring along the rail corridor.

To compensate for this a new Statement of Commitment (SoC number 21B) has been added which requires pre-clearing surveys to be undertaken. These surveys include inspecting all vegetation to be cleared for Long-nosed Bandicoots prior to any disturbance. Any Long-nosed Bandicoots located during these surveys would be relocated (if caught) to an appropriate location within the rail corridor that would not be cleared.

The DECCW have raised an issue that due to insufficient information provided on how any relocations may occur, a s.91 licence under the *Threatened Species Conservation Act 1995* may be required.

As identified in Statement of Commitment 18, a flora and fauna management plan would be prepared before construction and in consultation with the DECCW. This plan would be prepared in accordance with the objectives and strategies described in Section 9.2.1 of this report and further describe the pre-clearing surveys and ongoing management of the Long-nosed Bandicoot. This additional information is considered sufficient to accompany an application for a licence under s.91 of the *Threatened Species Conservation Act 1995*.

Ashfield Council also raised an issue that further consideration of important habitat for Long-nosed Bandicoot in the Inner West is required. The flora and fauna management plan described above will provide a framework to provide additional information on the habitat of the Long-nosed Bandicoot.

The DECCW raised concerns regarding the consideration of impacts from the project on microchiropteran bat species, as no nocturnal surveys were undertaken.

Daytime searches of appropriate roosting habitat were undertaken and identified several suitable habitats as shown in Table 4.2 of the Ecological Assessment (Technical Paper 4 of the EA). No evidence of active microchiropteran was noted during this survey. Nocturnal surveys were not possible due to the rail corridor being an active rail line as a result of the current track upgrading works and also due to the time of year of surveys (winter).

A new Statement of Commitment (SoC number 21C) has been added to ensure that pre-clearing surveys will be undertaken prior to construction. During these pre-clearing surveys, an ecologist will inspect any bridge and tunnel that work will be carried out on for the presence of microchiropteran bat species. Any bats found roosting in a bridge or tunnel will be relocated and excluded from roosting in the structures until works have finished. This process will be outlined in the flora and fauna management plan (refer to SoC number 18).

The DECCW has also requested that as a minimum the loss of vegetation should be offset by an equivalent area of regeneration or replanting. In total, 0.7 hectares of vegetation will be removed from bushcare sites, the remaining vegetation comprises of weeds or planted trees. The project offsets the loss of vegetation through the provision of 1.7 hectares of future bushcare sites which require rehabilitation works.

5.2.3 Noise and vibration impacts

The DECCW and Ashfield Council raised issues relating to noise and vibration impacts from the project.

The DECCW submission included recommendations for six operational noise conditions and 10 construction noise conditions to be applied to the project. Transport NSW has reviewed the recommended conditions and agrees that the majority are acceptable and generally in accordance with measures already proposed as part in the EA. The specific conditions and Transport NSW's responses are included in full in Appendix D. One condition, relating to operation vibration conditions, is not agreed with by Transport NSW. Transport NSW consider that a vibration design goal of 103 dB as requested by the DECCW is overly stringent for a surface rail project and is inconsistent with recent operational vibration criteria applied in NSW and overseas.

Whilst it is considered likely that the vibration design goals would be achieved on this project, any further assessment of mitigation measures (if required), or future extensions of the light rail system should be based on current guidance relating to acceptable vibration levels from surface railway lines.

Ashfield Council requested in their submission that acoustic fencing/sound barriers should be considered to minimise the noise levels at certain locations during construction and operation phases of the project. As identified in Section 11.3.3 of the EA during construction noise mitigation measures, such as temporary noise barriers, would be employed where reasonable and feasible to mitigate construction noise. Statement of Commitment 11, 12 and 13 all relate to minimising impacts of construction noise on sensitive receivers. Operational noise from the light rail has been assessed along the length of the extension.

Noise levels are predicted to comply with the project criteria in all areas except where identified in the EA (see Section 11.4.2). As identified in Statement of Commitment 14 and in Section 11.4.3 of the EA, Transport NSW has committed to carrying out attended measurements of operational noise after operations begin at the locations where exceedances of noise goals are predicted to confirm if mitigation measures are required. Attended measurements would also be taken at other representative locations across the project area to validate the noise predictions and to determine if any additional feasible and reasonable mitigation measures are required. Noise barriers are one mitigation option that would be considered.

5.2.4 Project design

GreenWay shared path – General

The Ashfield, Marrickville and Leichhardt Council submissions raised issues relating to the GreenWay shared path in general. Of these submissions, the key issues identified related to issues concerning the proposed bridge across the Hawthorne Canal within Richard Murden Reserve, integration of signage and retention of the established visual identity for the GreenWay and the removal of vegetation screening for residents along the length of the project.

Each of these issues was identified separately by the community and by non-government stakeholders and has previously been addressed in Section 5.1.3 and Section 5.1.6.

Public transport integration – stop locations/timetables

The Ashfield, Marrickville and Leichhardt Council submissions raised issues relating to public transport integration (such as stop locations/timetables etc). Of these submissions, the key issue identified related to integration of the light rail with the complete Sydney Transport Network, in terms of ticketing, timetabling, information and promotion.

In response to this issue, Transport NSW notes that, as stated in Section 6.6.1 of the EA, integration with Sydney's future electronic ticketing system would be pursued as part of the ongoing processes for the project's operation. The integration of the light rail with the wider transport ticketing network is still being pursued by Transport NSW.

With respect to timetabling, this would be at the discretion of the operator to provide. However, with a frequency of every approximately 10-15 minutes, a timetable for light rail vehicle operations is not deemed necessary.

5.2.5 Traffic and transport

The RTA and Leichhardt Council have provided comment on the design and operation of the GreenWay shared path across Marion Street with the RTA's preferred option being a grade-separated facility. The issues regarding the crossing of Marion Street for pedestrians and cyclists have been addressed previously in Section 5.1.1. No change to the crossing of Marion Street, as presented in Chapter 6 of the EA, is proposed as part of the project. As part of detailed design, Transport NSW would consult with the RTA to decide on the most appropriate design and location of the at-grade signalised crossing.

Ashfield Council raised issues relating to parking impacts associated with the light rail. As described in Section 5.1.4, a parking survey was undertaken in October 2010 (Appendix E) which indicated that there were ample unrestricted on-street parking spaces available within 300 metres of the proposed light rail stops, which would accommodate the estimated patronage demand. As indentified in Statement of Commitment 7, following the first year of operation, the assumptions of the commuter parking study will be tested, including on-site monitoring.

The RTA has suggested several recommendations for conditions of approval relating to operational and construction impacts, including temporary road closures. These recommendations have been noted and where appropriate would be considered in a construction traffic management plan for the RTA and Council's approval.

6. Proposed design change

6.1 Introduction

As identified in Chapter 3 of this report, since exhibition of the EA during October and November 2010, the project design has been refined for one element, the Dulwich Hill Interchange stop, to improve constructability and operational effectiveness and to minimise environmental impact. Section 6.2 outlines this proposed design change.

One other design change is proposed for the project as defined in Chapter 6 of the EA. The design change relates to the provision of another access point to the Waratah Mills stop, via a lift from Waratah Mills stop to the Davis Street bridge. Section 6.3 outlines this proposed design change.

6.2 Dulwich Hill Interchange stop location

6.2.1 Background

As described in Chapter 3 of this report an alternative design scheme to that presented in the EA is to be included as part of the project for the Dulwich Hill Interchange stop. Following an assessment of the alternate schemes for the Dulwich Hill Interchange stop location the preferred option for the Dulwich Hill Interchange stop was alternative scheme 1. However as identified in Section 3.4.1 it was identified through the MCA process that alternative scheme 1 would benefit if the interchange with the heavy rail and bus services and the light rail services could be further improved.

As a result, design refinement of alternative scheme 1 with respect to stop location has been undertaken by Transport NSW. The refinement has led to the development of alternative scheme 1a which locates the stop further south, closer to the Dulwich Hill Railway Station and Wardell Road, thereby improving interchange efficiencies.

Alternative scheme 1a is now proposed as part of the project, replacing the base case scheme presented in Chapter 6 of the EA.

6.2.2 Alternative scheme 1a

Alternative scheme 1a would locate the Dulwich Hill Interchange stop at the western end of Bedford Crescent between the existing residential properties to the east and Jack Shanahan Park to the west. An indicative arrangement of the Dulwich Hill Interchange stop alternative scheme 1a is shown on Figure 6.1.

This scheme would include a walking distance of approximately 135 metres or walking time of approximately 1 minute and 35 seconds between the Dulwich Hill Railway Station and the light rail stop (see Figure 6.2). This is slightly more in distance and time than the base case however is an improvement on the other alternative schemes proposed (i.e. alternative scheme 1 and alternative scheme 2).

The Dulwich Hill Interchange stop would include a single, four metre wide, platform which would allow for LRVs to load and unload passengers on its western side.

A stair and lift from Bedford Crescent down to a new path would provide access to the stop platform and to Jack Shanahan Park. Alternative scheme 1a would provide improved neighbourhood connections across Jack Shanahan Park (see Figure 6.2).

A new footpath would be provided on the southern side of Bedford Crescent. A new pedestrian crossing and extended footpath blisters would be provided on Bedford Crescent at its intersection with Wardell Street.

A new small pocket park with tree plantings would be installed at the far western end of Bedford Crescent. This would require the removal of a small section of the road and some car parking spaces.

A disabled parking space would be provided close to the stop and 60 degree commuter parking would be provided on the southern side of Bedford Crescent. Line markings would be provided to formalise this parking area. A few parking spaces on the eastern end of the street and the western end of the street would be removed to accommodate kiss-and-ride drop off areas. An area for car turning would be provided at the western end of the street.

This scheme would include a security fence between the proposed light rail corridor and the existing heavy rail corridor. This fence would also extend to the north along the light rail corridor around the eastern edge of Jack Shanahan Park. There would also be a fence at the edge of the escarpment on Bedford Crescent.

Totem signage would be installed at the junction of Bedford Crescent and the Wardell Street bridge, at the stop entrance and in Jack Shanahan Park.

A full assessment of the environmental impacts of the new stop location and layout associated with alternative scheme 1a is provided in Chapter 7 of this report.

Figure 6.1 Dulwich Hill Interchange stop alternative 1a

Note: Indicative only, subject to detail design.

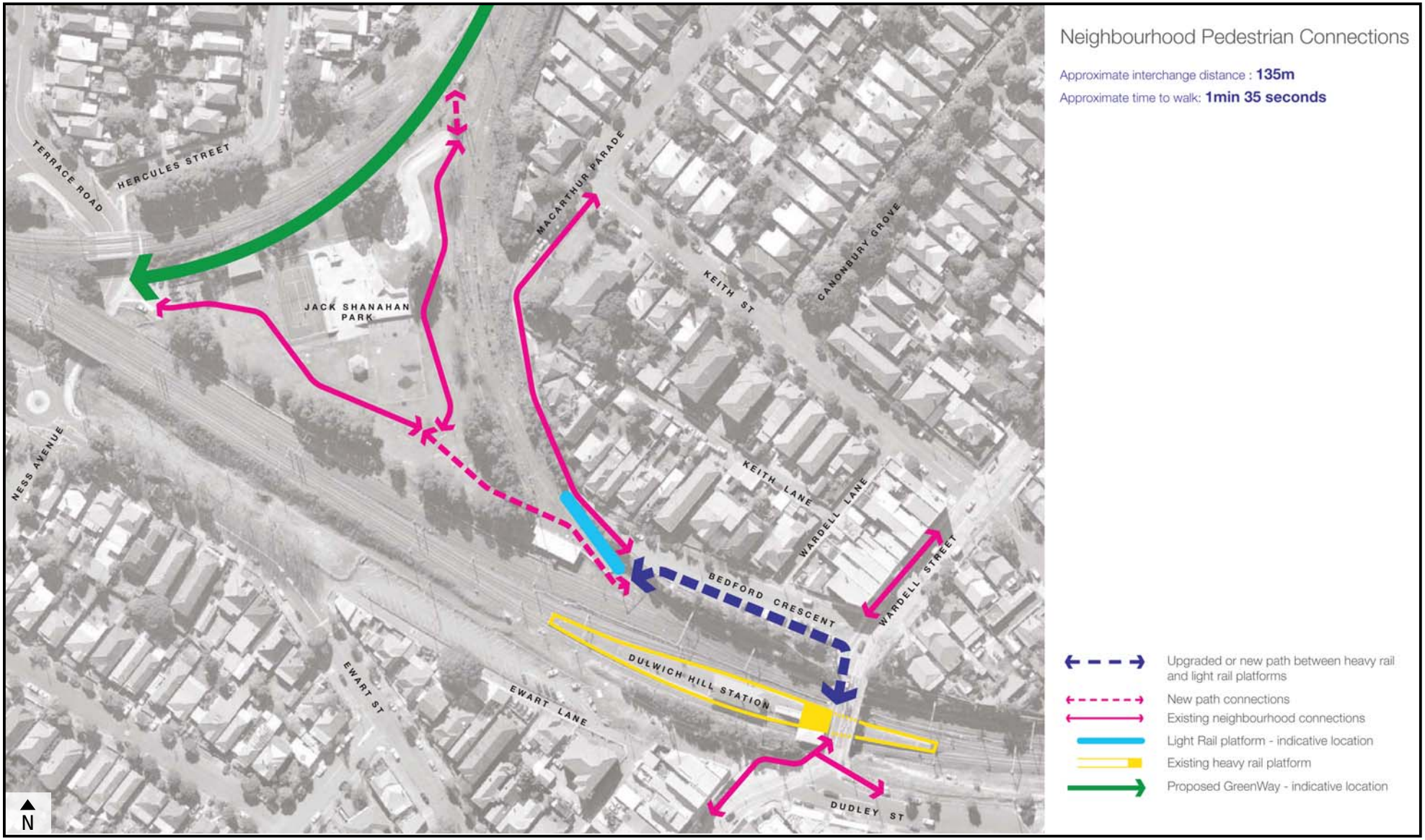


Figure 6.2 Schematic of neighbourhood connections and interchanges for alternative scheme 1a

Note: Indicative only, subject to detail design.

6.3 Lift at Waratah Mills stop

To improve accessibility to the Waratah Mills stop and to provide an additional access point to the stop away from Weston Street a lift access to Davis Street bridge from the Waratah Mills stop would be included in the project. The final location, design and configuration of the additional access point would be determined during detailed design.

An assessment of the environmental impacts of the proposed amendment has been provided in Chapter 7. The potential impacts of the amended design to the Waratah Mills stop are anticipated to be limited to visual impacts and greenhouse gas and energy usage.

7. Impact assessment of the proposed design change

7.1 Introduction

This chapter provides an environmental impact assessment of any new or modified impacts as a result of the Dulwich Hill Interchange stop alternative scheme 1a design change and of the new lift access at Waratah Mills stop. The key environmental issues that were assessed include:

- land use integration
- traffic and transport
- noise and vibration
- historic heritage
- ecology
- visual impacts, landscaping and urban design
- greenhouse gases and energy
- climate change adaptation.

Any new mitigation requirements identified as a result of the further assessment have been summarised in Section 7.11 and taken into consideration in revising the Statement of Commitments in Chapter 9 of this report.

Reference to the base case in this chapter refers to the base case location of the Dulwich Hill Interchange stop as described in Section 6.2.5 and shown in Figures 6.21 and 6.22 of the EA.

7.2 Land use integration

Construction impacts

Some temporary land take outside of the permanent project footprint may be required to construct the stop and other project elements associated with alternative scheme 1a such as the pocket park, new footpath on Bedford Crescent and access paths within Jack Shanahan Park. Public access restrictions and any damage to public infrastructure (i.e. footpaths, kerbs, etc) would be short term in nature. These areas would be reinstated upon completion of construction in the area. These impacts would be similar to those anticipated for the base case.

As a result of the reduction in construction excavation works and the retention of vegetation on Bedford Crescent land use amenity impacts relating to dust, noise and visual elements would be improved compared to the base case.

Operation impacts

As with the base case no private property acquisition would be required for alternative scheme 1a.

The change in location and design of the Dulwich Hill Interchange stop associated with alternative scheme 1a would result in less impact to some existing land uses than the base case design. Alternative scheme 1a would not require the excavation of the cliff face on Bedford Crescent and therefore there would be less vegetation removal and approximately less resumption of parking spaces on Bedford Crescent.

The land use of a small section of the western end of Bedford Crescent would be changed from road use to open space as it would be turned into a pocket park.

The operation of alternative scheme 1a would be expected to positively influence current land use through providing improved access between land uses on the eastern and western side of the rail corridor.

Land use amenity impacts relating to noise and visual elements for adjoining land uses during operation would be similar for alternative scheme 1a compared to the base case. Impacts to residential properties would still occur to some degree, however the impacted properties would be different to those impacted by the base case. Each of these elements is discussed further in the relevant noise and visual sections below.

7.3 Traffic and transport

Additional traffic and transport assessment was undertaken by Parson Brinckerhoff to assess the traffic and transport impacts. The results of the assessment are outlined below.

Construction phase

Construction heavy vehicle trips

The number of construction traffic movements would be reduced compared to the base case as a result of the reduced excavation and spoil movement activities.

Temporary lane closures and road closures

There is potential that a partial closure of a lane on the southern side of Bedford Crescent would be required to allow for the construction of the new footpath and accesses to the stop. As a result some of the on-street parking on the southern side of the road would potentially be temporarily removed. These impacts are anticipated to be reduced compared to those expected for the base case.

Operational phase

Transport integration

Alternative scheme 1a would provide an increased pedestrian interchange distance between Dulwich Hill Railway Station and the light rail stop compared to the base case. The interchange would increase to approximately 135 metres and would equate to an approximate time to walk of 1 minute 35 seconds compared to the base case which was 55 metres away with an approximate walking time of 1 minute.

Parking

The following operational parking impacts would be expected from alternative scheme 1a:

- Approximately 27 spaces are currently present on Bedford Crescent. 24 on-street parking spaces would be provided as part of alternative scheme 1a, resulting in a loss of three parking spaces. This is compared to an expected loss of 10 parking spaces on Bedford Crescent for the base case.
- Alternative scheme 1a would include a provision of one parking space for people with disabilities on Bedford Crescent. This is the same as provided for in the base case so no change in impact is predicted.
- Two kiss-and-ride facilities were provided as part of the base case. These two facilities have been provided as part of the alternative scheme 1a so no change in impact would result.

Operational traffic

A turning facility at the western end of Bedford Crescent is included in alternative scheme 1a which would provide for improved vehicle turning on the street.

7.4 Noise and vibration

Additional noise and vibration impact assessment was undertaken by Heggies Pty Ltd to assess the changes in impacts. The results of the assessment are outlined below.

Construction noise

As identified in the EA for construction of the base case the excavation of the rock face along Bedford Crescent would result in relatively high noise and vibration impacts for the duration of the works. There would also be construction traffic noise impacts due to the need to remove the spoil from the site.

Alternative scheme 1a construction noise and vibration levels are expected to be slightly lower and of a reduced duration, as there would be no requirement to excavate rock or to remove the large volumes of spoil from along Bedford Crescent.

One scenario has been modelled to represent the stop construction activities in order to determine the level of noise impacts expected. The worst case stop construction noise predictions are shown in Table 7.1. The noise management levels (defined as the noise goals for construction works for affected receiver groups) (NMLs) at this site are based on the ambient noise survey conducted at location B09 – 9 Bedford Crescent, as part of the EA.

Also shown in Table 7.1 are the predicted noise levels and exceedances of the NMLs with and without mitigation. Mitigation would include measures such as three metre hoardings around constructions work areas.

Table 7.1 Alternative scheme 1a construction noise levels

Receiver area and type	Distance (m)	Period	NML (dBA)	Predicted LAeq Noise Level (dBA)	NML Exceedance with Level of Noise Mitigation (dBA)	
					None	3 metre hoarding
Bedford Crescent – Residential	7	Daytime	54	78–86	32	24
Ewart Lane – Residential	63	Daytime	54	64–66	12	4
Jack Shanahan Park – Recreational	40	Daytime	65	67–70	5	–
Wardell Road – Commercial North	65	Daytime	70	63–66	0	–
Wardell Road – Commercial South	75	Daytime	70	63–68	0	–

During construction of alternative scheme 1a the NMLs are predicted to be exceeded by 12 dBA to 32 dBA at residential receivers, with no mitigation. No exceedances of the NMLs are predicted for commercial receivers. With noise mitigation in the form of a three metre hoarding, the worst exceedance of the NMLs is predicted to be 24 dBA for residents at the western end of Bedford Crescent.

These exceedances of the NMLs are slightly less than the worst case exceedances for the base case assessed in the EA, although the affected receivers on Bedford Crescent are in some cases much closer to the construction area. It is however expected that the highest noise levels would occur over a shorter time period with the revised stop location, as excavation of rock would not be required.

The construction noise mitigation strategy described in the EA would be applicable to alternative scheme 1a. No changes to these mitigation measures would be required.

Construction vibration

No change in impacts for construction vibration is anticipated for alternative scheme 1a compared to the base case.

Operational noise

The operational running noise from the light rail is largely proportional to the speed. The location of the stop determines when the LRVs would need to begin to slow down. The relocation of the stop closer to the previous stop as part of alternative scheme 1a would

mean that the LRVs would begin to slow earlier, and noise levels along the alignment between stops would be marginally lower.

The relocation of the stop from being located in a cutting (base case) to before the cutting (alternative scheme 1a) may result in reduced shielding of nearby residences from any noise from the stop itself or from patrons of the light rail. However this is not expected to be a significant noise issue, on the basis that warning bells during the evening and night-time would only be sounded at the drivers' discretion.

As with the base case alternative scheme 1a would not require mitigation of operational noise for surrounding receivers.

Operational vibration

No change in impacts for operation vibration is anticipated for alternative scheme 1a compared to the base case.

7.5 Historic heritage

An additional review historic impact assessment was undertaken by Australian Museum Business Services (AMBS) to assess the changes in impacts.

As with the base case proposed location for the Dulwich Hill Interchange stop the alternative scheme 1a would locate the stop within the curtilage of the Dulwich Hill Railway Station Group. Similarly to with the base case, the proposed construction and operation works are not predicted to adversely affect the Dulwich Hill Railway Station Group. No change in impact is therefore predicted.

7.6 Ecology

Additional ecological assessment was undertaken by Parson Brinckerhoff to assess the change in impacts. The results of the assessment are outlined below.

The main impact of the base case as presented in the EA was the clearing of street plantings along Bedford Crescent. Table 7.2 identifies that a total of 1.82 hectares of vegetation would require clearing to accommodate the project including the base case design for the Dulwich Hill Interchange stop. This would remove some foraging opportunities for fauna in this area, such as the threat–listed Grey–headed Flying–fox, and would contribute towards the overall local loss of vegetation and habitats as a result of the project. Operational impacts on ecology were not identified as likely in this area as part of the base case.

With the new design, current street plantings along Bedford Crescent would be retained and a small (approximately 0.01 hectare) pocket park would be created at the western end of the street. This would serve to retain/create urbanised vegetation within a disturbed environment.

Table 7.2 identifies that a total of 1.78 hectares of vegetation would require clearing to accommodate the project with the new design (alternative scheme 1a), which equates to an overall 0.04 hectares less than the project including the proposed base case. Overall, however, this new design would have little change in the level of ecological impact of the project.

Table 7.2 Vegetation clearing – project with base case versus project with new design

Vegetation type	Extent within study area (ha)	Project including base case design total clearing (ha)	Project including new design total clearing (ha)
Bushcare sites	1.4	0.07	0.07
Planted Trees	12.4	0.05	0.01
Weed growth	8.0	1.70	1.70
Totals	**21.8**	**1.82***	**1.78***

Note: * totals do not include any plantings or revegetation that will be undertaken as part of the project.

7.7 Visual impacts, landscaping and urban design

7.7.1 Dulwich Hill Interchange stop location

Additional visual impact assessment was undertaken by Hassell to assess the change in impacts. The results of the assessment are outlined below.

Visual impacts

The visual effect and sensitivity of the project at the Dulwich Hill Interchange stop viewpoint (identified as viewpoint 15 in the EA) assessed is outlined in Table 7.3.

Visual amenity impacts would occur for residents located adjacent to the new location of the stop. These residents are different to those who would have impacted by the base case.

The overall level of impact of visual impact compared to the base case is predicted to be slightly less.

Table 7.3 Visual impact assessment for the Dulwich Hill Interchange stop viewpoint

Visual effect	Visual sensitivity	Visual impact	Mitigation strategy
Moderate visual effect. Construction of new stop located below the end of Bedford Crescent. The lift and stair infrastructure would be constructed within the existing cutting, with the stop located below the street level. Changes to parking layout along Bedford Crescent. Changes to vegetation along Bedford Crescent. New pocket park at the end of Bedford Crescent. Kiss-and-ride facilities on the street.	**Low** visual sensitivity. Residents of Bedford Crescent would be largely unaffected as the new stop would be located below street level. Motorists along Wardell Road and Ewart Lane would see new lift and stair structure however this would be a small portion of their view. Commuters on Dulwich Hill Railway Station platform would be able to see the works being carried out. These impacts would be temporary in nature however.	**Moderate** visual impact. Visual impacts would be reduced compared to the base case as a result of reduced vegetation removal and reduced constriction works in the area. Changes to the Bedford Crescent would be limited to parking rearrangement. All major works would be within an existing cutting and separated visually from residents and pedestrians on Bedford Crescent. Some visual amenity impacts would be introduced from having the kiss-and-ride facilities located on the street.	Reinstatement of any vegetation removed during construction to reduce visual impact. Detail design of Bedford Crescent to address, pedestrian connections to the west as well as to Dulwich Hill Railway Station. Lighting and CPTED principles to be addressed at detailed design stage to maximise passive surveillance and safety. Detailed design of pedestrian connection to Jack Shanahan Park needs to minimise extensive fencing to encourage use.

Safety and security

Replacement of the existing refuge island with a pedestrian zebra crossing across Bedford Crescent near Wardell Road would improve pedestrian safety. The kerb extension near this crossing would shorten pedestrian crossing distance and improve visibility to traffic at the extended kerbs.

Alternative scheme 1a would locate the light rail stop away from Dulwich Hill Railway Station and Wardell Road area and closer to the residential area at the western end of Bedford Crescent. The location is relatively isolated and there would be limited passive surveillance of the stop and access paths. Lighting and safety would need to be considered at detailed design through crime prevention through environmental design (CPTED) assessment to maximise commuter security.

Privacy and amenity

No changes to privacy and amenity impacts are predicted for alternative scheme 1a compared to the base case.

7.7.2 Lift at Waratah Mills stop

Visual impacts

Visual amenity impacts for residents adjoining the Waratah Mills stop were assessed previously in Chapter 14 of the EA. The assessment identified the visual sensitivity of the stop as moderate and the visual impact as being low.

The overall visual impact from the addition of the lift access to Davis Street bridge from the Waratah Mills stop is predicted to be slightly higher given the additional building element of the lift which is proposed to be constructed but not significant.

7.8 Greenhouse gasses and energy

Construction

Greenhouse gas emissions for the construction of alternative scheme 1a would be less than that for the base case, as there will be no need for mass excavation and haulage, minimal clearing of vegetation, and less hardstand area (so less embodied emissions associated with materials). Emissions would be slightly offset by the provision of the new pocket park.

Operation

Greenhouse gas emissions would be mostly associated with energy consumed in operating the lift and lighting for the interchange. Compared to the base case, the stop is further from Dulwich Hill Railway Station, so more light fixtures would be required for community safety, and more greenhouse gas emissions would be associated with energy consumed in lighting.

With respect to the addition of the lift access to Davis Street bridge from the Waratah Mills stop, greenhouse gas emissions would be mostly associated with energy consumed in operating the lift, however this is anticipated to be relatively small.

7.9 Climate change adaptation

Alternative scheme 1a would have the same predicted impacts for construction and operation as identified for the base case in the EA.

7.10 Non–key environmental issues

The following non–key environmental issues were addressed in the EA:

- Aboriginal heritage
- socioeconomic
- hydrology and groundwater
- topography and soils
- contaminated land
- air quality
- resource and waste management
- utilities and services
- hazards and risks
- cumulative impacts.

The proposed design change of alternative scheme 1a has not altered the potential environmental impacts associated with these issues or the corresponding conclusions presented in the EA, with the exception of two of these non–key issue. These alterations are outlined below.

Socioeconomic

Connectivity between communities would be improved with alternative scheme 1a as a result of direct access between communities on the east and west of the rail corridor being provided.

This alternative would also provide improved access to community infrastructure. Access between the eastern side of rail corridor and Jack Shanahan Park and the GreenWay shared path would be created.

No other changes to social and economic issues are predicted as a result of the alternative scheme 1a compared to the base case.

Resource and waste management

Alternative scheme 1a would require less excavation of the cliff face on Bedford Crescent. This would result in the potential for less spoil and waste generation from the project and less resource consumption during construction.

7.11 Additional mitigation measures

As a result of the assessment of the proposed design changes as contained within Chapter 6 of this report the following mitigation measures are proposed, covering traffic and transport and visual impacts, landscaping and urban design.

Traffic and transport

During construction any lane closures on Bedford Crescent required to construct alternative scheme 1a should still enable two–way traffic operation, with a parking lane on the north side.

For operation appropriate traffic regulatory signage would be provided at the pedestrian zebra crossing.

Visual impacts, landscaping and urban design

The following mitigation measures are proposed to address impacts of alternative scheme 1a:

- reinstatement of any vegetation removed during construction to reduce visual impact
- detailed design of Bedford Crescent to address, pedestrian connections to the west as well as to Dulwich Hill Railway Station
- lighting and CPTED principles to be addressed at detailed design stage to maximise passive surveillance and safety for pedestrians
- detailed design of pedestrian connection between the light rail stop and Jack Shanahan Park to minimise extensive fencing to encourage use.

7.12 Overall assessment of impacts from the design change

This chapter has outlined that the design change for alternative scheme 1a would have relatively minor impacts and or provides additional benefits to the project design as described in the EA.

8. Clarifications to the EA

8.1 Introduction

The purpose of this chapter is to provide clarifications to elements of the EA.

8.2 Clarifications to the EA

8.2.1 Technical Paper 2 – Noise and vibration

There is an error on page 66 of Technical Paper 2 – Noise and Vibration (Volume 2 of the EA) in the Section 6.7.1 heading. The heading relating to receivers with predicted potential operational noise goal exceedance states '155 Canterbury Road, 29 Eltham Street'. The heading should read 115 Old Canterbury, 29 Eltham Street' as this would be consistent with the receiver identified as having a potential operational noise goal exceedance in Table 47.

The same error is present within Volume 1 of the EA on page 251.

8.2.2 Table 7.2 – Asphaltic concrete volume

The asphaltic concrete volume for overhead wiring structure in Table 7.2 of the EA should have stated 0 m^3 requirement not 549 m^3. The table should have read as follows:

Table 8.1 Approximate concrete requirements for key project components

Project component	Material quantities (m^3)	
	Concrete	Asphaltic concrete
Stop construction	1,429	184
Bridges and underpasses	102	0
GreenWay shared path	372	365
OHW	269	0
Totals	2,172	549

8.2.3 Environmental planning instruments section number

The section number of the environmental planning instruments section in the EA was identified as Section 2.2.2. This identified that the environmental planning instruments were Commonwealth legislation. The section number should have been identified as Section 2.3.

8.2.4 Figure reference – Section 10.4.3

There is an error on page 202 in Section 10.4.3. The first paragraph of this section refers to a set of Figures 10.2a to 10.2g with the figures presented on the following pages. The reference within the section should refer to Figures 10.2a to 10.2f.

8.2.5 Road classification: Technical Paper 1 – Traffic and transport

Table 3.12 of Technical Paper 1 indicated that Brown Street, Hathern Street and Cook Street are Local Roads.

Brown Street and Hathern Street have been identified as State Roads, as has the section of Cook Street between Brown Street and Old Canterbury Road. References to these streets within Table 3.12 of Technical Paper 1 should be amended to read as State Roads and not Local roads.

8.2.6 Bicycle routes: Technical Paper 1 – Traffic and transport

Figures 3.3 and 3.4 within Technical Paper 1 identify an on-path cycle network path which extends within the proposed light rail corridor generally between Blackmore Oval/Iron Cove and extending past Lilyfield stop. This route has been considered by some submissions as being part of the proposed project. This bicycle route is not part of the project and represents the proposed on-street and on-path cycle way identified within the *Leichhardt Council Bicycle Strategy 2007* as a proposed route which should be investigated for future construction.

The labelling of this route should be amended to make the distinction between the proposed development and the indicative route proposed by the *Leichhardt Council Bicycle Strategy 2007*.

9. Final Statement of Commitments

9.1 Final Statement of Commitments

The EA (as exhibited in October/November 2010) identified a range of environmental impacts. Mitigation measures to minimise these impacts have informed the Statement of Commitments contained in the EA which set out the measures that Transport NSW (the proponent) proposes to implement as part of the construction and operation of the project.

Based on the consideration of the submissions received on the project (refer Chapters 4 and 5 of this report), the draft Statement of Commitments provided in Chapter 19 of the EA have been amended and finalised (refer Table 9.1). Changes made to the draft Statement of Commitments are identified in blue italicised text in Table 9.1.The final Statement of Commitments presented in Table 9.1 describes the measures that Transport NSW will commit to during the pre–construction, construction and operational phases of the project to manage the impacts identified in the EA and the subsequent issues identified during the preparation of this Submissions Report.

The final Statement of Commitments will be considered by the Department of Planning in its assessment of the project. Should approval be granted by the Minister for Planning, approval conditions would take into consideration the final Statement of Commitments proposed for the project.

Following project approval, the finalised commitments would guide the next phases of the proposed development. The construction contractor and operating provider selected to undertake further planning, design, construction and/or operation phases of the proposed upgrade would be required to undertake all works in accordance with the final Statement of Commitments and Conditions of Approval.

Table 9.1 Final Statement of Commitments

Outcome	SoC number	Commitment/mitigation measures	Timing
Environmental management			
Clear definition of environmental management activities during construction	1	A construction environmental management plan(s) (CEMP) would be prepared in accordance with the *Environmental Management Plan Guideline* (DIPNR, 2003). The CEMP(s) would be endorsed by an independent environmental management representative (ERM) before construction begins.	Design and Construction
Ongoing best practice environmental management	2	The ongoing management of environmental issues associated with the project's operation and maintenance would use an environmental management system and standard operation procedures.	Operation
Independent review and reporting of environmental compliance	3	The proponent would appoint a suitably qualified and experienced Environmental and Sustainability Representative — independent of the project design and construction personnel — to advise on environmental compliance matters, implement the sustainability management plan (SMP) and associated initiatives, make regular inspections of construction sites and other activities as specified in the SoC and the CEMP(s).	Construction
Design development			
Optimisation of final design	4	Detailed design of the GreenWay shared path, including additional connection points with the public domain, would take place in consultation with a community and stakeholder forum comprising representatives of the GreenWay group, including local councils, members of the community and Bicycle NSW.	Design
Communication processes and stakeholder management			
A clear framework for the effective delivery of community and stakeholder involvement	5	A community and stakeholder involvement plan (CSIP) would be established before construction begins. The plan would then be implemented throughout the project's delivery. The plan would include, but not be limited to: a) identification of community and other stakeholders to be informed/consulted as part of the project b) details of procedures and mechanisms that would be used to regularly inform the community and other stakeholders of the project's progress and issues of interest to the community c) details of how property owners directly affected by the project would be consulted throughout the project d) processes to receive and manage feedback and complaints *e)* project phone, email and mail contact details (including a 24-hour contact number for urgent enquiries/complaints). *The proponent will also notify the public of the existence and purpose of the 24 hour complaints line.* *f) notification of specific activities via advertising, letter, telephone, SMS, email, and meetings.* Details would be provided for community–based forums that would be held to address key community and environment issues of interest/concern. The community would be encouraged to participate in community–based forums to help identify further opportunities to improve project outcomes and/or reduce the impacts associated with the project.	Construction

Outcome	SoC number	Commitment/mitigation measures	Timing
Sustainability			
Achieving sustainable outcomes	6	A sustainability management plan (SMP) would be developed and implemented for the project to guide design development, construction activities and operations. It would include: a. Overview of the sustainability policy framework in NSW and Australia. b. Objectives and strategies for, as a minimum: ▪ adaptation to climate change ▪ greenhouse gas emissions and energy use ▪ minimisation of resource use and recycling ▪ water management ▪ biodiversity ▪ community benefit. c. A methodology for embedding sustainability initiatives into the design development and construction process, including: ▪ sustainability initiatives database that tracks the identification and implementation of sustainability initiatives ▪ specific sustainability review as part of each design package ▪ guidelines to enable innovation in design and construction. d. A monitoring and reporting framework. e. Engagement of a Sustainability Manager with appropriate qualifications, experience and technical resources during design and construction. After the project was completed, the role of sustainability management would be allocated to an appropriately trained member of the operational staff. f. List of roles, responsibilities and resourcing. g. List of sustainability matters in the project issue registers and risk register. h. Sustainable Procurement Strategy that would identify opportunities to reduce the volume and carbon footprint of the amount of resources required to construct and operate the project. Specific initiatives identified in the SMP would be incorporated into the CEMP and operator's EMS to ensure their implementation during each stage of the project.	Design, construction and operation

Outcome	SoC number	Commitment/mitigation measures	Timing
Traffic and transport			
Minimise impact of commuter traffic and parking	7	Following the first year of operation, the assumptions in the final commuter parking study would be tested, including on–site monitoring. This would occur in consultation with local councils and Roads and Traffic Authority (RTA), where relevant, and would review: ▪ kiss-and-ride provision at each stop ▪ any unexpected impacts on on-street parking provision for local residents. Mitigation measures such as parking schemes would be developed as required.	Operation
Minimise impact of construction traffic on the road network	8	Any change to construction traffic access routes as identified in this EA would be subject to further assessment, in consultation with the RTA and councils.	Construction
Minimise impact of road closures during construction	9	Temporary road closures required to construct the project would be managed and coordinated so that impacts to local roads are minimised, in consultation with the relevant council and the RTA.	Construction
Minimise impacts on Parramatta Road	10	A detailed construction methodology for crossing the Parramatta Road (including works required to raise the bridge), would be developed in consultation with the RTA with the aim of minimising traffic and pedestrian disruptions.	Construction
Noise and vibration			
Minimisation of construction potential noise impacts at sensitive receiver locations	11	Noise mitigation would be adopted for construction activities where reasonable and feasible; to meet noise management levels (as outlined in Chapter 11) or where noise goals are likely to be exceeded. Where all feasible and reasonable practices have been applied and noise would still be more than 5 dBA above the noise–affected level, work would be scheduled to provide respite periods from the noisiest activities. The duration and noise level of the works would be clearly explained to all residents who would be affected.	Construction

Outcome	SoC number	Commitment/mitigation measures	Timing
Minimise amenity impacts of construction	12	Construction activities would be restricted to the following hours: ▪ 7 am to 6 pm Monday to Friday ▪ 8 am to 1 pm Saturdays ▪ no work on Sundays or public holidays. Except for the following: ▪ Any works that do not cause noise emissions to be more than 5 dBA higher than the RBL (background) noise level at any nearby residential property or other noise sensitive receiver. ▪ Any other works required outside these hours to achieve a better environmental outcome and considered essential to the project, as agreed by Transport NSW, and with suitable notification to the community. ▪ The delivery of plant, equipment and materials that is required outside these hours, as requested by Police or other authorities for safety reasons, and with suitable notification to the community. ▪ Works required during low traffic peak periods (i.e. night–time) when road closures are necessary to complete the works. ▪ Works required by utility service providers, or where impacts to services cannot be otherwise reasonably managed. ▪ Emergency work to avoid the loss of lives, property and/or prevent environmental harm.	Construction
Minimisation of construction potential noise impacts at sensitive receiver locations	13	At sites where construction noise exceeds 75 dBA, site–specific construction noise and vibration management plans (CNVMPs) would be developed during detailed design.	Construction
Assessment of compliance with the operational noise goals	14	At locations identified as experiencing potential exceedances of project noise goals, the need for mitigation would be determined on the basis of attended measurements after operations started.	Operation
Minimise operational noise impact	15	Between the hours of 10 pm and 7 am, warning bells should only be used where in the opinion of the driver, it is considered to be a danger to public safety.	Operation
Heritage			
Protection of heritage assets	16	A heritage management plan (HMP) would be prepared before construction and incorporated into the CEMP. The HMP would assess the heritage impact mitigation and management requirements in relation to *all affected heritage items and will be informed by the detailed heritage assessments undertaken prior to the construction of works including*: ▪ underbridge, and the potential for resulting impacts on Hawthorne Canal and Battle Bridge ▪ works near the Lewisham Railway Viaducts, the Lewisham Sewage Aqueduct and Hawthorne Canal.	Design and construction.

Outcome	SoC number	Commitment/mitigation measures	Timing
Protection of heritage assets	17	An interpretation strategy that recognises the historical and technical significance of the disused Rozelle goods line corridor and its role in the development of industries and urban growth would be developed as part of the HMP. The strategy should identify relevant stories and images that would encourage an understanding of the goods line for users of the Sydney light rail.	Design
Ecology			
Biodiversity enhancement	18	A flora and fauna management plan would be prepared before construction and incorporated into the CEMP *this will be prepared in accordance with the objectives and strategies described in Section 9.2 of this report.*	Design and Construction
	19	Where revegetation is proposed, the species selected should integrate with existing bushcare sites. Species selection should reference local government species lists.	Design and Construction
	20	The final locations of bushcare sites would be determined in consultation with the Inner West Environmental Group (IWEG) *and relevant local councils*.	Design
Minimisation of disturbance to local flora and fauna	21	Before construction begins, significant trees (based on species or age and size) that may be affected during construction would be identified and appropriate management measures incorporated into the CEMP. Measures to be considered include, but are not limited to, fencing, ongoing maintenance and pruning. Any tree removal within or next to construction sites would be subject to further assessment and approval by the proponent. The local council would be consulted where relevant.	Construction
	21A	*The significant tree identified at Leichhardt North will be retained in accordance with Statement of Commitment 21.*	*Construction*
	21B	*Pre-clearing surveys will inspect all vegetation to be cleared for Long-nosed Bandicoots prior to disturbance. Any Long-nosed Bandicoots located during these surveys will be relocated (if caught) to an appropriate location within the rail corridor that will not be cleared.*	*Prior to construction*
	21C	*An ecologist will conduct pre-clearing surveys of any bridge and tunnel that work will be carried out on for the presence of microchiropteran bat species. Any bats found roosting in a bridge or tunnel will be relocated and excluded from roosting in the structures until works have finished.*	*Prior to construction*
Reduced spread of weeds	22	Weed management would be staged and take place in accordance with the *Noxious Weeds Act* 1993 *whilst minimising impacts to vegetation cover which may provide habitat for the Long-nosed Bandicoot*.	Construction and operation
Visual impact, landscaping and urban design			
Minimising construction impacts	23	Where construction compounds and access roads would be visible from surrounding areas, visual screening would be implemented, as appropriate.	Construction

Outcome	SoC number	Commitment/mitigation measures	Timing
Enhancing urban design outcomes	24	A landscape and urban design strategy would be developed during detailed design. Issues to be addressed in the strategy include: ▪ consistency with sustainable design principles ▪ design of retaining walls for maximum potential to integrate with the surrounding land use, and to minimise visual impact ▪ minimising the use of shotcrete, and developing strategies to reduce its visual impact ▪ design of stop locations to address urban design objectives to integrate with surrounding urban context ▪ design of a lighting strategy to consider light spill to adjoining properties, especially where these are residential properties ▪ where the GreenWay shared path is located close to residential dwellings, provisions for the creation or retention of privacy for those residents. *The landscape and urban design strategy would be prepared in consultation with Councils and GreenWay Steering Committee.*	Design
Energy demand and greenhouse gas			
Contributions to climate change are minimised by reducing the energy consumption and greenhouse gas emissions of the project	25	Opportunities would be investigated to reduce energy demand and associated greenhouse gas emissions during construction and operations. Measures to be investigated during detailed design would include, for construction: ▪ using energy efficient plant and equipment ▪ using materials with low embodied energy including use of low energy cement–substitute produces in concrete manufacture ▪ using energy–efficient site lighting. ▪ providing incentives for construction workers to use public transport, green travel plan targets and incentives. ▪ using modular construction, where practicable ▪ sourcing material from the Sydney region, where possible, to avoid transport–related energy consumption. During operation: ▪ using energy efficient lighting at light rail stops ▪ generating renewable energy using photovoltaic cells on stop roofs where possible.	Design, construction and operation

Outcome	SoC number	Commitment/mitigation measures	Timing
Climate change adaptation			
A design and finish that can adapt to the effects of climate change	26	Hydrology and drainage design would address current predictions of future sea level rise, increased rainfall intensity and storm surge, due to climate change.	Design
	27	Resilient finishes and materials to withstand likely future solar radiation would be used where practicable.	Design
Hydrology			
Surface water and flooding	28	Any flood mitigation required for the project would be finalised during detailed design, taking into consideration the assumptions on future rainfall contained within *Climate Change in Australia: impacts, adaptation and vulnerability* (CSIRO, 2007) or any successive Australian Government–endorsed climate change data.	Design
Contaminated land			
Safe remediation of the site	29	Potential contamination would be further assessed in the form of a Phase 2 assessment, to identify the extent or presence of contamination or hazardous materials within the project construction footprint.	Construction
	30	Contaminated material identified during the Phase 2 assessment would be managed, classified and disposed of appropriately in accordance with all relevant legislation and guidelines, including the *Protection of the Environment Operations Act 1997, the Waste Avoidance* and *Resource Recovery Act 2001* and *Waste Classification Guidelines* (DECC 2008).	Construction
Public safety and security			
Public safety maximised	31	All construction compounds and work areas would be fenced off to prevent public access during construction.	Construction
	31A	*An investigation would be undertaken to provide an additional access point for the Taverners Hill stop. The investigation would consider a potential additional access to the stop from Beeson Street.*	*Design*
Crime Prevention Through Environmental Design (CPTED) guidelines are adopted in future design development to address potential impacts on public safety and security	32	NSW Police CPTED and other relevant guidelines would be applied to all elements of the project to guide the design of appropriate lighting, fencing of the rail corridor, security measures (including surveillance cameras), graffiti management, help points at stops and other issues.	Design

9.2 Construction environmental management framework

As identified in Section 19.2 a construction environmental management framework would be prepared for the project comprising the following:

- construction environmental management plan
- construction compounds and ancillary facilities management plan
- construction noise and vibration management plan
- construction traffic management plan
- earthworks management plan
- waste management plan
- heritage management plan.

As a result of issued raised in submissions an additional plan to address flora and fauna management issues would also be prepared as part of the construction environmental management framework.

9.2.1 Flora and fauna management plan

The flora and fauna management plan (FFMP) would set out details to manage potential biodiversity issues resulting from the project's construction. This plan would be prepared prior to construction in consultation with IWEG, local Councils and DECCW.

It is expected that this plan would be used by the contractor(s), the environmental management representative (EMR) and Transport NSW employees. The contractor(s) will have primary responsibility for implementing the FFMP.

The FFMP's objectives and strategies would be to:

- *Objective:* limit the clearing of native vegetation to the 1.78 hectares assessed to be the construction footprint.

  Strategy to address: undertake staff and contractor inductions describing the roles and responsibilities relating to the protection of biodiversity.

  Strategy to address: areas not to be cleared will be clearly marked and fencing installed prior to the commencement of construction activities to avoid unnecessary vegetation and habitat removal.

- *Objective:* minimise human interferences to flora and fauna.

  Strategy to address: undertake appropriate management of construction vehicles and equipment to ensure they are clean and completely free of soil, seeds and plant material before entering and leaving the site.

  Strategy to address: undertake rehabilitation of habitat affected by construction works

- *Objective:* minimise impact to threatened species and populations

  Strategy to address: during staff and contractor inductions, describe the location of potential bandicoot and microchiropteran bat habitat. Identify (by survey) areas of potential habitat for the Long–nosed Bandicoot.

  Strategy to address: undertake vegetation clearing protocols, including staging clearing within the corridor over time and staging clearing within specific construction sites. For example at specific construction sites any vegetation clearing required would be initially cut to ground level. The cleared area would then be left overnight so that wildlife, if present, could move elsewhere to shelter.

  In addition, pre–clearing surveys and fauna relocation would be undertaken, specifically for the Long–nosed Bandicoots and species of microchiropteran bats. Details of any fauna relocation would be reported to Department of Planning and Department of Environment Climate Change and Water (DECCW). Recipient sites would be within the rail corridor in areas that are not proposed to be cleared. The suitability of the sites will be chosen such that impacts on the Long–nosed Bandicoots are minimal.

  Strategy to address: locate Long–nosed Bandicoot and microchiropteran relocation sites, if required, in consultation with the DECCW.

  Strategy to address: prepare a specific monitoring program for any relocated bandicoots. The monitoring methodology would be determined in consultation with DECCW and include details to ascertain if the bandicoots are using the rail corridor and adjoining public lands.

  Strategy to address: revegetated areas would consider enhancements to small fauna habitat, such as the selective use of materials (old railway sleepers).

- *Objective:* to manage the bushcare sites in a coordinated manner with relevant stakeholders.

  Strategy to address: consult with relevant stakeholders such as IWEG, GreenWay Steering Committee and local councils, to develop strategies for establishment and management of bushcare sites.

  Strategy to address: the flora and fauna management plan would take into consideration, where relevant and appropriate, the Draft *GreenWay Revegetation and Bushcare Plan* (ecological, October 2010).

- *Objective:* manage bushcare sites surrounding the construction footprint including control of weeds and pest species

  Strategy to address: prepare a weed management plan complying with the *Noxious Weeds Act 1993* and minimising impacts to vegetative cover which may provide habitat for the Long–nosed Bandicoot. The weed management plan would take into consideration, where relevant and appropriate, the Draft *GreenWay Revegetation and Bushcare Plan* (ecological, October 2010).

  Strategy to address: prepare a suitable strategy addressing pest management, especially domestic cats which would be implemented during operation, including public education.

  Strategy to address: undertake flora and fauna monitoring of bushcare sites during and post construction at regular intervals. The length of post construction monitoring will be determined in consultation with local councils and DECCW.

10. Conclusions and next steps

10.1 Conclusions

This submissions report has documented and considered the submissions received on the EA and outlined Transport NSW's responses to the submissions, as required under Section 75H (6) of the EP&A Act.

This submissions report provides details of additional investigations and proposed design changes that have been made since the EA exhibition. This submissions report has addressed the outcomes of the consultation process conducted during the public exhibition of the EA.

The report demonstrates compliance with legislative requirements and the requirements of the consultation process in that:

- Transport NSW has considered all issues arising from the submissions and provided a written response to the issues (refer Chapter 5 and Appendix B, C and D of this report)
- design changes made to the project following the exhibition have been justified by demonstrating how the modification is either relatively minor and/or provides additional benefits to the project design described in the EA (refer Chapter 7 of this report)
- the final SoC, amended as a result of the submissions received and additional investigations undertaken, demonstrates Transport NSW's commitment to minimising environmental impacts (refer Table 9.1).

In consideration of the above, it is proposed that the project, as described in Chapter 6 of the EA, and amended by this report (refer Chapter 6), should be submitted for determination by the Minister for Planning.

The final Statement of Commitments provided in Table 9.1 will establish the appropriate environmental framework for the project to be undertaken in a sustainable manner.

10.2 Next steps

As a result of the responses Transport NSW has provided to the public submissions and the additional investigations and proposed design changes, it is anticipated that the Department of Planning will be in a position to prepare the Director–General's Assessment Report for the project. The Director–General's Assessment Report will provide advice and recommendations to the Minister for Planning with regard to the determination of the application made for approval of the project under Part 3A of the EP&A Act.

The Minister for Planning will then determine decide whether to grant or refuse the project approval sought under Section 75J of the EP&A Act.

Should the project be approved by the Minister for Planning, Transport NSW will continue its consultation with community members, government agencies and other stakeholders during the pre–construction and construction phases of the project. Transport NSW's commitment to ongoing stakeholder consultation is reflected in the final Statement of Commitments provided in Chapter 9 of this report. An overview of the consultation activities that would be undertaken by Transport NSW during the construction and operation phases of the project has been provided in Chapter 2 of this report.

11. References

GHD July 2010a, *Sydney Light Rail Inner West Extension Study — Final Report*

GHD July 2010b, *Sydney Light Rail Inner West Extension Stakeholder Comments Report on the Draft Inner West Extension Study*

Ecological October 2010. *Draft GreenWay Revegetation and Bushcare Plan*

Transport NSW July 2010a, *Sydney Light Rail Extension — Stage 1 Inner West Extension: Product Definition Report*

Transport NSW July 2010b, *Sydney Light Rail Extension — Stage 1 Inner West Extension: Preliminary Environmental Assessment*