Section 75 W Modification
Environmental Assessment Report

Len Waters Industrial Estate
(Former Hoxton Park Aerodrome)

Modifications to Concept Plan and Stage 1 Infrastructure Project Applications to Include the Construction of the Link Road and Rezone the Residual Lot

Submitted to
Department of Planning
On Behalf of Mirvac Projects Pty Limited

September 2010 ■ 10293

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JBA Urban Planning Consultants Pty Ltd operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared by: Jennie Buchanan

Signature  Date 28/09/10

This report has been reviewed by: Gordon Kirkby

Signature  Date 28/09/10

Contents

Figures

Contents

Tables

Contents

Appendices

Statement of Validity

Prepared under Part 3A of the Environmental Planning and Assessment Act, 1979 (as amended)

Environmental Assessment prepared by	
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Address	Level 7, 77 Berry Street, North Sydney NSW 2060
In respect of	Project Application
Section 75W Modification	
Applicant name	Mirvac Projects Pty Limited
Applicant address	Level 26, 60 Margaret Street, Sydney NSW 2000
Land to be developed	Len Waters Distribution Estate (Former Hoxton Park Aerodrome)
Proposed development	Modifications to Concept Plan and Stage 1 Infrastructure Project Applications to Include the Construction of the Link Road and Rezone the Residual Lot.
Environmental Assessment	An Environmental Assessment (EA) is attached
Certificate	I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge: ▪ It is in accordance with the Environmental Planning and Assessment Act and Regulation. ▪ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.
Signature	
Name	Jennie Buchanan
Date	28 September 2010

Executive Summary

Purpose of Report

This Environmental Assessment Report (EAR) is submitted to the Minister for Planning pursuant to Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Specifically this application seeks to satisfy Conditions 2 and 8 of Concept Plan approval MP10_0007 (See **Appendix A**) which require the submission of a modification application that makes provision for a second access to the Len Waters Industrial / Distribution Estate.

The application also seeks to rezone the south-western corner of the site from SP2 Infrastructure to the IN2 Light Industrial Zone following the placement of drainage infrastructure underground.

Proposed Modifications

The following amendments are sought to the Len Waters Industrial Estate Concept Plan Approval (MP10_0007):

- Amended site layout, including the inclusion of the Hinchinbrook Creek Link Road; and
- Rezoning of part of the residual lot from SP2 Infrastructure to IN2 Light Industrial.

The following amendments are sought to the Stage 1 Infrastructure Project Approval (MP10_0008):

- Construction of the Hinchinbrook Creek Link Road / bridge;
- Construction of the northern intersection with Cowpasture Road;
- Implementation of flood mitigation works; and
- Revegetation of disturbed areas within the Hinchinbrook Creek Corridor.

Environmental Assessment

The environmental assessment of the proposed modifications has found the:

- development is permissible with consent under the Liverpool Local Environmental Plan 2001;
- the proposal is consistent with and will satisfy a requirement within the approved Voluntary Planning Agreement applying to the site;
- proposed link road / bridge and intersection with Cowpasture Road will not generate any adverse impacts on the operation of the surrounding road network;
- proposed design of the development will cater for B-double Truck and bus movements;
- that the short-term impacts on the Hinchinbrook Creek Corridor can be appropriately mitigated by way of:
  - the m-lock design of the bridge;
  - appropriate construction management measures; and
  - the provision of a bio-diversity off-set.
- development will not generate any unacceptable flood impacts, subject to the implementation of flood mitigation measures adjacent to the bus depot site;

- operation of the link road / bridge will not generate any adverse noise impacts and does not require noise mitigation measures, however noise mitigation measures will be required during construction works;
- link road / bridge will not have an adverse visual impact, subject to the planting of landscaping adjacent to the link road;
- Aboriginal Heritage Management Plan approved under the Concept Plan is sufficient to manage the proposed scope of works that form part of the modification application; and
- A Construction and Environmental Management Plan will be implemented during construction works so as to avoid impacts during that phase of the development.

In light of the public benefits that will result from the proposed modifications, the requirements of the VPA applying to the site and in the absence of any adverse environmental impacts, the proposed development is recommended for approval.

1.0 Introduction

This Environmental Assessment Report (EAR) is submitted to the Minister for Planning pursuant to Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Specifically this application seeks to satisfy Conditions 2 and 8 of Concept Plan approval MP10_0007 (See **Appendix A**) which require the submission of a modification application that makes provision for a second access to the Len Waters Industrial / Distribution Estate.

The application also seeks to rezone the south-western corner of the site from SP2 Infrastructure to the IN2 Light Industrial Zone following the placement of drainage infrastructure underground.

1.1 The Site

The site is located approximately 6.5km west of the Liverpool CBD on Cowpasture Road within the new industrial suburb of Len Waters Industrial Estate (Formerly known as the Hoxton Park Aerodrome). The Concept Plan site is bounded by the M7 Motorway to the west, Cowpasture Road to the south, Hinchinbrook Creek to the east and the proposed residential suburb of Elizabeth Hills to the north (**Figure 1**). The site is located within the Liverpool LGA.

Figure 1 – The site

1.2 Concept Plan Approval MP10_0007

On 3 June 2010, the Planning Assessment Commission (PAC) granted Concept Plan approval for the following:

(a) subdivision of the site as it relates to Lots 4050, 4051, 4053,4054 and 4055;
(b) bulk earthworks across the site;
(c) development and operation of a distribution park of warehouses, distribution centres and light industries, consisting of:
- approximately 10.62 hectare land for a Dick Smith Warehouse and Distribution Centre;
- approximately 19.97 hectare land for a Big W Warehouse and Distribution Centre;
- approximately 4.92 hectare land for a residual building land parcel for warehouse / light industries purposes;
- 9,837m^2 for stormwater infrastructure;
- 4.14 hectares for internal roads; and

(d) provision of a range of associated infrastructure to provide essential services to the site.

The approved Concept Plan is shown in **Figure 2**. A copy of the Notice of Determination is also included at **Appendix A**.

Of particular relevance to this application are Conditions 2 and 8 which are reproduced below.

Modifications to the Concept Plan

2. The Concept plan is modified as follows:
(a) the design of the proposed road reservation to Cowpasture Road is not included in this Concept Plan;
(b) the layout of the residual lots is not included in this Concept Plan;
(c) the proposed landscaping and site entrance statement is not included in this Concept Plan;
(d) the stormwater device located in the south-west corner of the site required to accommodate off-site flows, is not included in this Concept Plan; and
(e) the Proponent is required to make provision for a second access to the site. (Our emphasis)

8. The Proponent shall provide detailed plans for a second access to the site off Cowpasture Road, to the satisfaction of the Director General. The plans must be submitted within 4 months of the date of the concept plan approval and include:
(a) details of consultation with RTA, Council, DECCW, NOW and other relevant government agencies, and RTA's and Council's in principle support of the design of the access;
(b) detailed description and design of the access, demonstrating that:
- *the design is compliant with relevant RTA and Council standards and specifications including the RTA Road Design Guide, AUSTROADS Pavement Design Guide, and the latest version of Australian Standard AS5100; and*
- *the existing and the new intersection with Cowpasture Road will operate at an appropriate of service once the Len Waters Industrial Estate and Elizabeth Hills residential area are fully developed;*

(c) a risk assessment of the potential environmental impacts of the project, identifying any key issues that may require further assessment;

(d) an assessment of the potential impact of the access on threatened species protected species, populations or ecological communities and their habitats;

(e) a flood impact assessment;

(f) a noise assessment, demonstrating that:

- *the noise generated from the construction of the second access would comply with the relevant criteria in DECCW's Interim Construction Noise Guideline;*
- *the traffic noise generated by the project would comply with the relevant criteria in DECCW's Environmental Criteria for Road Noise;*

(g) a visual assessment, including:

- details of how the access will interface and connect with the proposed redevelopment of the area north of the site including the neighbourhood centre and residential area; and
- details of measures to minimise visual impacts including landscape screening and lighting. This is to be supported by visual aids such as photomontages;

(h) an aboriginal heritage assessment;

(i) a construction management plan, including a:

- *a traffic management plan;*
- *flora and fauna management plan;*
- *noise and dust management plan;*
- *soil and water management plan prepared in accordance with Landcom's Managing Urban Stormwater: Soils and Construction guidelines;*
- *waste management plan;*
- *a complaints management plan detailing the procedures that would be implemented to receive, handle, respond to and record any complaints received;*
- *emergency response plan; and*
- *any other plans that may be required as a result of the environmental assessment of potential impacts.*

Note: In modifying the concept plan approval to include the second access, the Proponent will need to modify project approval 10_0008 to allow the carrying out of the development.

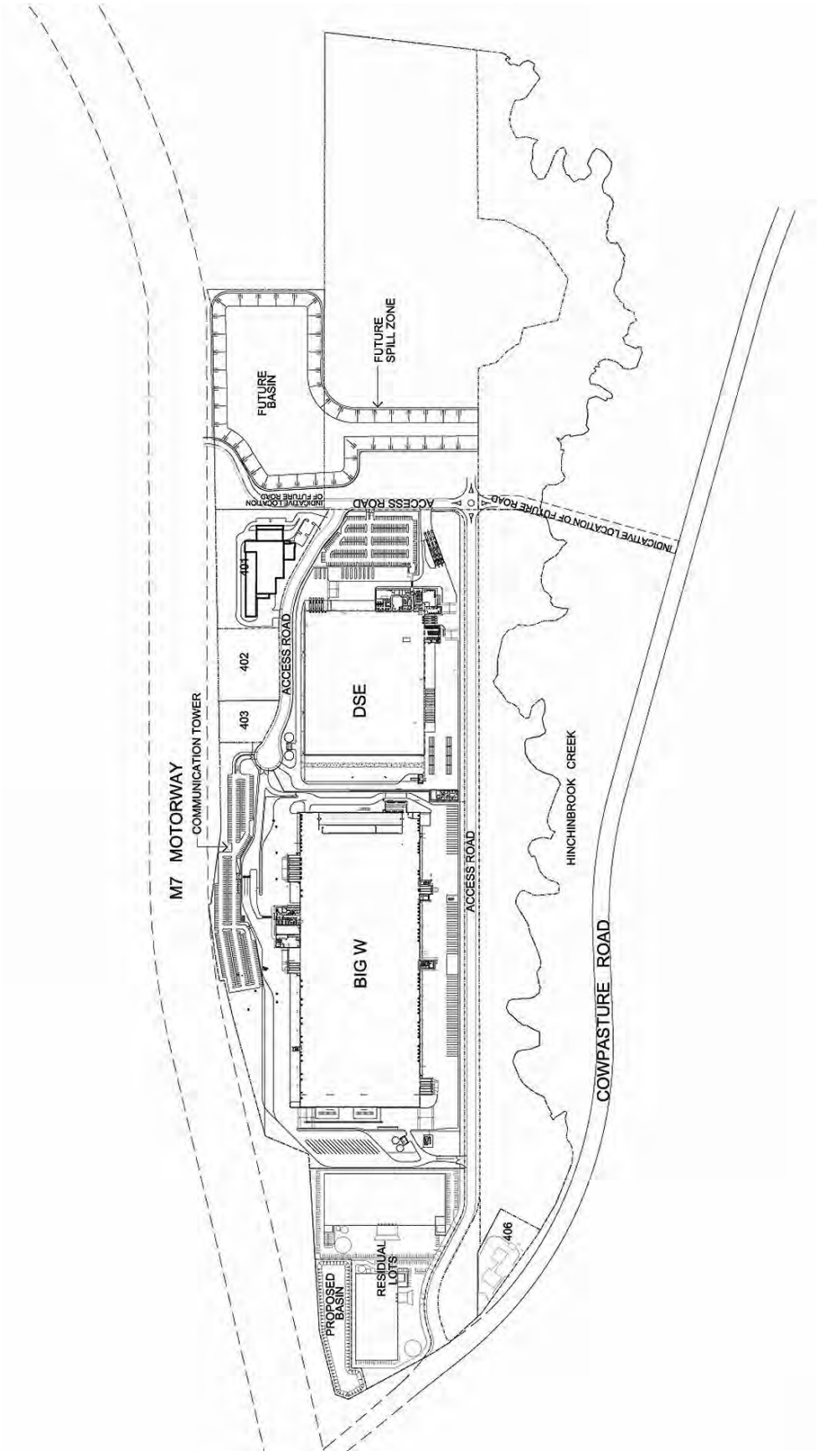

Figure 2 – Approved Concept Plan

Source: Mirvac Design

1.3 Stage 1 Infrastructure Approval MP10_0008

Concurrent with the Concept Plan Approval, the PAC approved a Project Application for the construction of the Stage 1 Infrastructure works package. The following works were approved:

- Bulk excavation/ earthworks;
- Tree removal;
- New access roadways;
- Provision of infrastructure and site services;
- Detention basin in the south-western corner of the site;
- Drainage works;
- Subdivision;
- Staging of the construction of the infrastructure; and
- Landscaping.

A copy of the Notice of Determination for the Stage 1 Infrastructure PA is included at **Appendix B**.

1.4 Voluntary Planning Agreement

As part of the rezoning of the former Hoxton Park Aerodrome, a Voluntary Planning Agreement (VPA) was entered to between HPAL (the owner of the site at the time of the rezoning) and Liverpool Council. The VPA requires the delivery of certain public benefits including:

- Development contributions (monetary), to the value of over $2.2million. The contributions are for a variety of public purposes, including (but not limited to) library, museum, district community and recreation land and recreational facilities.
- Dedication of land for public recreation, stormwater detention and drainage.
- Development contributions (works) required at various stages of development, for:
  - the remediation and management of land zoned RE1 Public Recreation and the subsequent dedication of land to Council (at no cost);
  - the construction of a bike and pedestrian pathway;
  - drainage and stormwater works;
  - construction of a bridge over Hinchinbrook Creek to provide access from Cowpasture Road to the M7 underpass;
  - signalised intersections; and
  - bus shelters.

This application which proposes the construction of the link road / bridge over Hinchinbrook Creek with a signalised access from Cowpasture Road is in accordance with the VPA.

2.0 Proposed Modifications

This section of the report describes the proposed modifications to approved Concept Plan and Stage Infrastructure Project Applications.

2.1 Concept Plan Modification

2.1.1 Revised Concept Plan Layout

In accordance with condition 8 of the Concept Plan Approval (MP10_0007), this modification seeks approval for the inclusion of the northern Cowpasture Road intersection and a bridge link across Hinchinbrook Creek in the Concept Plan for the Len Waters Industrial Estate. The proposed link road is shown in **Figure 4** below and concept design plans are included in the Civil Infrastructure Report at **Appendix C**. The proposed design and construction of the bridge is described in more detail in the Stage 1 Infrastructure modification at **Section 2.2** of this report. In light of the revised scope of works included in the Concept Plan, the site plan has also been updated, see **Figure 3**.

Figure 3 – Revised site boundary

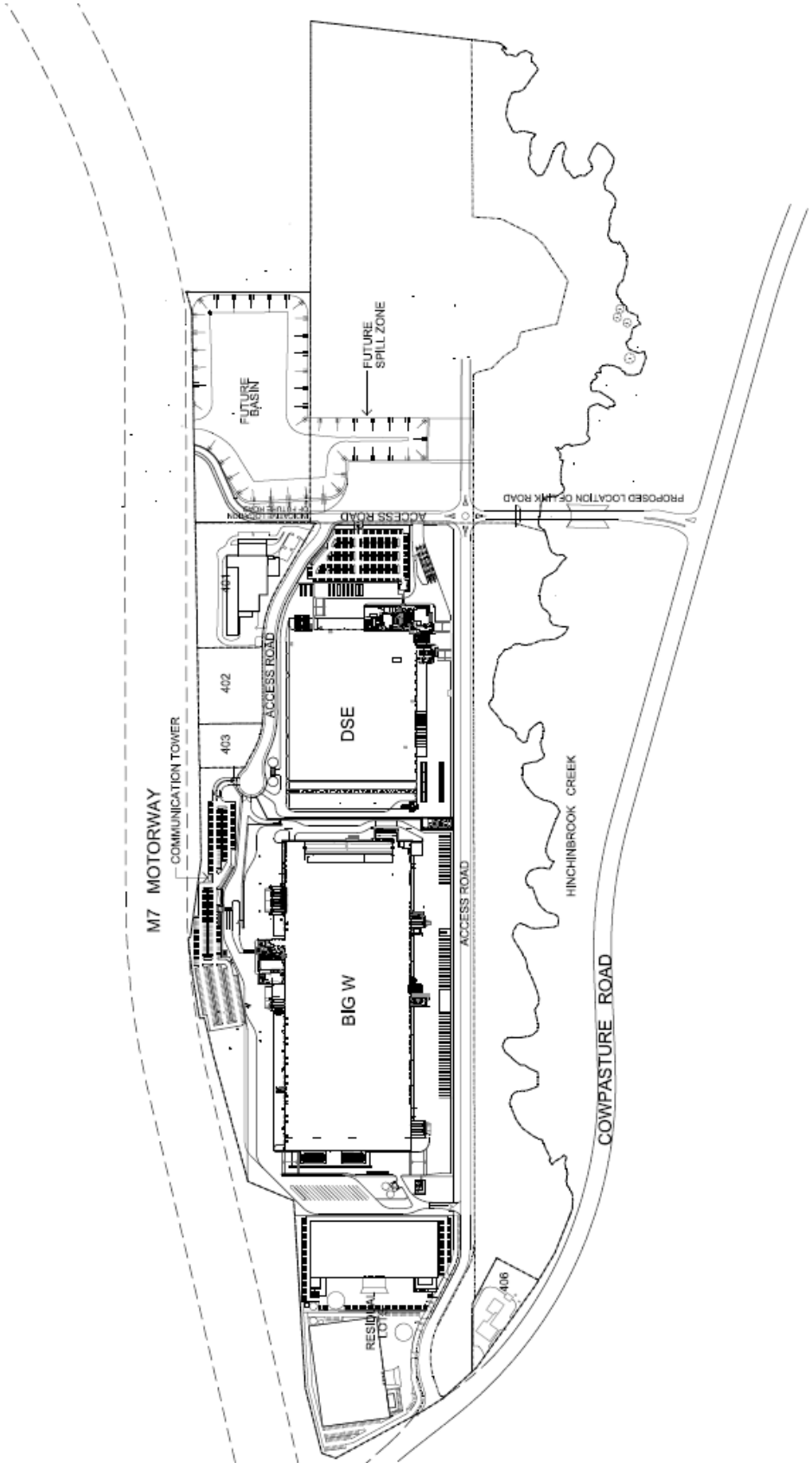

Figure 4 – Revised Concept Plan layout

Source: Mirvac Design

2.1.2 Rezoning of land in the south-west corner of the site

In June 2010 Mirvac Projects Pty Limited lodged a revised design for the stormwater infrastructure in the south-west corner of the site (see **Appendix D**). The revised design proposed the construction of an underground network of pipes and box culverts in lieu of a stormwater detention basin or an open channel. The trunk drainage was design to accommodate the 1 in 100 year ARI design storm flows with a 50% redundancy applied.

The Department reviewed the proposed design and confirmed by way of a letter dated 22 July 2010 (also included at **Appendix D**) that the proposed design satisfied condition 6 of the Concept Plan Approval and condition 21 of the Stage 1 Infrastructure Approval.

As the proposed infrastructure is underground and does not require the land reserved for drainage purposes, it is proposed to rezone that part of the site which is no longer required for infrastructure purposes from the SP2 Infrastructure zone to the IN2 Light Industrial Zone. The land proposed to be rezoned has an approximate area of 9,296m^2. The existing and proposed zoning plans are included at **Appendix E**. The rezoning request is consistent with discussions held with the Department during the original assessment of the Concept Plan and in particular following negotiations with the RTA. By way of this application, Mirvac Projects Pty Limited seek to formalise the process that was agreed with the Department.

It is proposed that an easement will be created in favour of Liverpool Council in relation to drainage infrastructure located on site. A commitment to this effect is made at **Section 4** of this report.

The Concept Plan layout in **Figure 3** also shows a revised building footprint for future developments on the residual lot. The developments on that lot will be the subject of a future project application however an indicative layout which generates the following has been provided:

- 31,115m^2 gross floor area; and
- 237 parking spaces.

Amended plans are also included at **Appendix E**.

2.1.3 Modifications to conditions of consent – MP10_0007

In order to effect the above amendments, the follow modifications are proposed to the Concept Plan conditions of consent. Deletions are shown in ~~strikethrough~~ and insertions are shown in ***bold italics***.

Schedule 2

1. Concept plan approval is granted for:
   (a) subdivision of the site as it relates to Lots 4050, 4051, 4053,4054 and 4055;
   (b) bulk earthworks across the site;
   (c) development and operation of a distribution park of warehouses, distribution centres and light industries, consisting of:
      - approximately 10.62 hectare land for a Dick Smith Warehouse and Distribution Centre;
      - approximately 19.97 hectare land for a Big W Warehouse and Distribution Centre;
      - approximately 4.92 hectare land for a residual building land parcel for warehouse / light industries purposes;

- 9,837m^2 for stormwater infrastructure;
- 4.14 hectares for internal roads; ~~and~~

(d) provision of a range of associated infrastructure to provide essential services to the site;

(e) ***provision of a second access road and intersection with Cowpasture Road providing access to the site; and***

(f) ***development of the residual lot for light industrial purposes.***

2. The Concept plan is modified as follows:

(a) the design of the proposed road reservation to Cowpasture Road is not included in this Concept Plan;

~~(b) the layout of the residual lots is not included in this Concept Plan;~~

(c) the proposed landscaping and site entrance statement is not included in this Concept Plan; ***and***

~~(d)~~ the stormwater device located in the south-west corner of the site required to accommodate off-site flows, is not included in this Concept Plan~~; and~~

(e) ~~the Proponent is required to make provision for a second access to the site~~.

~~8. The Proponent shall provide detailed plans for a second access to the site off Cowpasture Road, to the satisfaction of the Director General. The plans must be submitted within 4 months of the date of the concept plan approval and include:~~

~~(a) details of consultation with RTA, Council, DECCW, NOW and other relevant government agencies, and RTA's and Council's in principle support of the design of the access;~~

~~(b) detailed description and design of the access, demonstrating that:~~

- ~~the design is compliant with relevant RTA and Council standards and specifications including the RTA Road Design Guide, AUSTROADS Pavement Design Guide, and the latest version of Australian Standard AS5100; and~~
- ~~the existing and the new intersection with Cowpasture Road will operate at an appropriate of service once the Len Waters Industrial Estate and Elizabeth Hills residential area are fully developed;~~

~~(c) a risk assessment of the potential environmental impacts of the project, identifying any key issues that may require further assessment;~~

~~(d) an assessment of the potential impact of the access on threatened species protected species, populations or ecological communities and their habitats;~~

~~(e) a flood impact assessment;~~

~~(f) a noise assessment, demonstrating that:~~

- ~~the noise generated from the construction of the second access would comply with the relevant criteria in DECCW's Interim Construction Noise Guideline;~~
- ~~the traffic noise generated by the project would comply with the relevant criteria in DECCW's Environmental Criteria for Road Noise;~~

~~(g) a visual assessment, including:~~

- ~~details of how the access will interface and connect with the proposed redevelopment of the area north of the site including the neighbourhood centre and residential area; and~~
- ~~details of measures to minimise visual impacts including landscape screening and lighting. This is to be supported by visual aids such as photomontages;~~

~~(h) an aboriginal heritage assessment;~~
~~(i) a construction management plan, including a:~~
- ~~a traffic management plan;~~
- ~~flora and fauna management plan;~~
- ~~noise and dust management plan;~~
- ~~soil and water management plan prepared in accordance with Landcom's Managing Urban Stormwater: Soils and Construction guidelines;~~
- ~~waste management plan;~~
- ~~a complaints management plan detailing the procedures that would be implemented to receive, handle, respond to and record any complaints received;~~
- ~~emergency response plan; and~~
- ~~any other plans that may be required as a result of the environmental assessment of potential impacts.~~

~~Note: In modifying the concept plan approval to include the second access, the Proponent will need to modify project approval 10_0008 to allow the carrying out of the development.~~

2.2 Stage 1 Project Application Modification

2.2.1 Construction of Link Road / Bridge

The Civil Infrastructure Report at **Appendix C** provides concept drawings for the construction of the link road / bridge across the Hinchinbrook Creek corridor. The link road / bridge will comprise a bridge and culvert bank.

The bridge component is proposed to be a proprietary "M-Lock" system and will span 72m across Hinchinbrook Creek. The key design parameters of the bridge are:

- Six equal spans of 12 metres in length;
- 9.6m clear width between traffic barriers (3.5m lane in both directions, 2 x 1.3m shoulders and a 2.5m wide cycleway on the northern side;
- Pavement crossfalls - two way at 3%;
- Traffic barriers F type regular performance to RTA Specifications;
- Deck drainage by scuppers into the floodplain below; and
- Bridge deck to be supported on 585mm diameter spun precast concrete piles with depth and set to be determined at the detailed design stage.

It is proposed to construct a culvert bank to the east of the bridge structure. The bank will comprise box culverts consisting of 10 cells of 4.2m span which will accommodate the flows of larger storm events thereby minimising afflux both upstream and in the proximity of the bus depot site (located to the south-east of the site on Cowpasture Road).

Indicative images of the proposed bridge and culvert bank is provided in **Figure 5**.

View from the south looking towards the north-west

View from the west looking towards the east

View from the south looking towards the north-east

View from the south looking towards the north

Figure 5 – Indicative images of the proposed bridge and culvert bank

Source: ADW Johnson

2.2.2 Construction of Northern Cowpasture Road intersection

ADW Johnson has also prepared a general arrangement design for the northern Cowpasture Road intersection (See **Appendix C**) which shows the general configuration, lane lengths and traffic facilities. The intersection will be signalised and has been designed with the following:

- Left turn storage lane from Cowpasture Road into the link road minimum 30m long (excluding taper);
- Right turn storage from Cowpasture Road into the link road minimum 150m long (excluding taper);
- Two right turn lanes out of the link road onto Cowpasture Road minimum 50m long (excluding taper);
- Signalised slip lane for left out movements from the link road onto Cowpasture Road minimum 50m long (excluding taper).

The intersection has been designed to accommodate the turning circles of a B-Double truck (26m in length). The proposed intersection with Cowpasture Road is shown in **Figure 6**. The proposed design has been conceptually agreed to by the Roads and Traffic Authority.

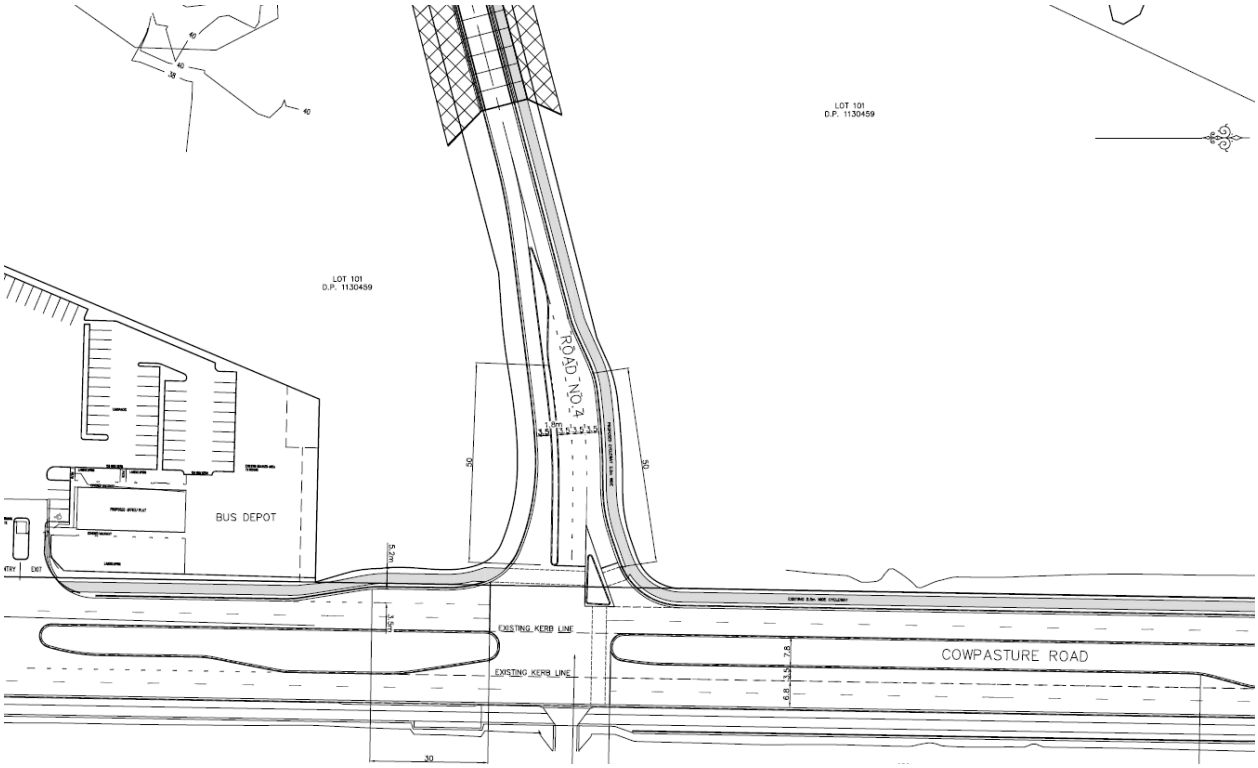

Figure 6 – Layout of proposed intersection

Source: ADW Johnson

2.2.3 Modifications to conditions of consent – MP10_0008

In order to effect the above amendments to the Stage 1 Infrastructure PA, the follow modifications are proposed to the conditions of consent. Deletions are shown in ~~strikethrough~~ and insertions are shown in ***bold italics***.

2. The Proponent shall carry out the project generally in accordance with the:
   (a) EA;
   (b) project plans SK-031, SK-024, SK-025, X09244.001.DA, SK-014, SK-015, SK-016, SK-017, SK-032 and Stormwater Management Plan;
   (c) subdivision plan 150126-DP-010-A
   (d) preferred project report;
   (e) statement of commitments; ~~and~~
   (f) conditions of this approval***;***
   (g) ***Civil Infrastructure Report – Hinchinbrook Creek, Link Road & Signalised Intersection; and***
   (h) ***Section 75W modification EA.***

6. With the exception of Road Two, ***drainage works and the Hinchinbrook Creek link road***, no works are permitted to be undertaken in the lot identified as Lot 4050 in the subdivision plan.

22. The Proponent shall ensure that the project's access road to Cowpasture Road ***at the southern end of the site*** is signalised prior to the occupation of the Big W Warehouse (MP10_0009) and/or Dick Smith Warehouse (MP10_0010) Projects.

23. The Proponent shall ensure that:
   (a) all internal roads and intersections:

   - Comply with AS2890.2"2002, or its latest version and Austroads Road Design;
   - Accommodate B-double access; and
   - Are completed prior to the occupation of the Big W Warehouse (MP10_0009) and/or Dick Smith Warehouse (MP10_0010) Projects***, with the exception of the northern intersection and access road across Hinchinbrook Creek which shall be completed within 12 months from the date of construction commencement or as soon as practicable in the event of unforseen circumstances.***

   (a) speed signs are installed at regular intervals on all access roads to limit speeds of vehicles to 50km/hr;
   (b) access to Lots 401, 402 and 403 is maintained at all times; and
   (c) road lighting is designed and installed to the satisfaction of Council.

3.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts associated with the proposed modifications. It addresses the matters for consideration set out in Condition 8 of MP10_0007.

The draft Statement of Commitments at **Chapter 4** complements the findings of this section.

3.1 Relevant Planning Instruments

Liverpool Local Environmental Plan 2001

The proposed development is consistent with the following relevant clauses of the Liverpool Local Environmental Plan 2001 (LLEP):

- Land Use Table:
  - The construction of a road within the RE1 Public Recreation zone is permissible with development consent.
- Cause 5.9 – Preservation of Trees or Vegetation
  - Consent is sought for tree removal. An Ecological Impact Assessment is included at **Appendix F** which concludes that the impacts of the proposed development can be suitably mitigated.
- Clause 7.8 – Flood Planning
  - A Flood Impact Assessment is included at **Appendix G** which demonstrates that the proposed development will not generate any adverse flooding impacts, subject to the implementation of flood protection works adjacent to the bus depot site.

Liverpool Development Control Plan

The introduction of the link road across Hinchinbrook Creek is consistent with street network in Part 2.9 of the Liverpool Development Control Plan (LDCP) (see **Figure 7**). The proposed road will contain a shared pedestrian cycle lane and will accommodate bus and b-double truck movements and is thus consistent with the objectives of the LDCP.

3.2 Consultation

Roads and Traffic Authority (RTA)

Correspondence with the RTA is provided at **Appendix H** which confirms the RTA's in principle agreement to the proposed bridge concept layout and intersection design.

Liverpool Council

As indicated in the letter at **Appendix H**, in principle agreement has been reached with Liverpool Council. The agreement is subject to the northern access being designed such that vehicular access is capable of being provided to the Council's land to the north of the proposed road. The proposed link road allows future access to the Council's land and therefore is in accordance with the Council's in principle approval.

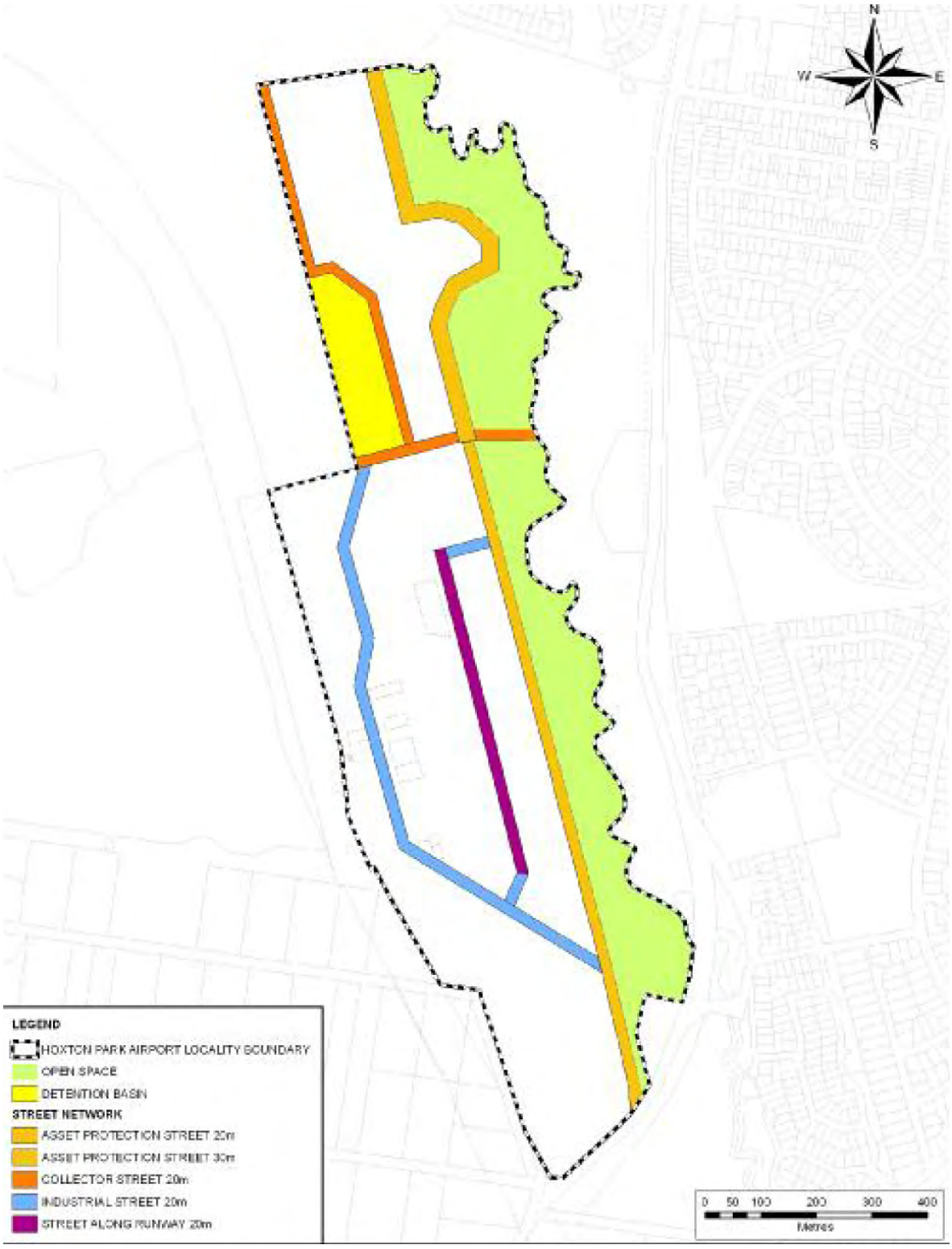

Figure 7 – Street Network contained in Part 2.9 of LDCP

Source: Liverpool Council

Department for Climate Change, the Environment and Water (DECCW)

Mirvac Projects Pty Limited contacted an officer of DECCW to discuss the proposed application. Ms Lou Ewins advised that DECCW would provide formal comment during the formal assessment of the application and preferred to review details of the proposal following formal lodgement of the application with the Department.

New South Wales Office for Water (NOW)

Mirvac Projects Pty Limited wrote to NOW on 9 September 2010.At the date of lodgement of this modification application, no formal response has been received nor issues raised.

3.3 Traffic Assessment

Operation of Proposed Access Intersection

Colston Budd Hunt and Kafes (CBHK) has provided an addendum report to their original assessment for the Concept Plan and concurrent Project Applications (see **Appendix I**). It is noted that the analysis is based on EMME forecast morning and afternoon traffic flows along Cowpasture Road which were provided by the RTA. These flows include traffic generated by the Hoxton Park development and other development including the full development of the Len Waters Industrial Estate and Elizabeth Hills residential area.

CBHK has undertaken a SIDRA analysis of the proposed intersections, with a conservative assumptions of the approved Concept Plan development generating traffic in addition to that estimated by the RTA in relation to flows along Cowpasture Road.

The above analysis found that the northern access intersection will operate in the year 2026 with average delays of less than 20 seconds per vehicle during both the morning and afternoon peak periods, representing a B level of service which is a good level of service with minimal delays and spare capacity.

In terms of the southern access intersection to the Hoxton Park industrial development, the SIDRA analysis found that it too would operate at a B level of service during the morning and peak periods with average delays of less than 20 seconds per vehicle.

CBHK also assessed the queues that would be generated by the proposed intersections and noted that the analysed intersections would not generate queues which would extend back into adjacent signalised intersections.

Design of Intersection

The design of the proposed intersection is contained within the Civil Infrastructure Report at **Appendix C**. ADW Johnson, in their report, has confirmed that the proposed road and intersection will be designed to comply with the relevant standards contained within Austroads and the relevant Australian Standard.

3.4 Flora and Fauna Assessment

GHD has prepared an Ecological Impact Assessment for the proposed link road link (**Appendix F**). GHD undertook a one-day site inspection (in addition to those undertaken in December 2009 and January 2010) on 23 July 2010 to assess the alignment of the proposed link road through the Hinchinbrook Creek Corridor. The site inspection involved targeted searches for habitat trees and threatened flora, assessment of riparian and terrestrial habitats and opportunistic fauna sightings within the new alignment. The outcome of the field surveys / site inspection are discussed below.

Flora

Vegetation within the Hinchinbrook Creek comprises two main communities:

- Alluvial Woodland – borders Hinchinbrook Creek
- Shale Plains Woodland – occurs on high ground either side of the Alluvial Woodland Strip

The above vegetation communities are consistent with the Endangered Ecological Communities (EEC) `River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions' (RFEF) which is listed under the Threatened Species Conservation Act (TSC ACT), or the Critically Endangered Ecological Community (CEEC) `Cumberland Plan Woodland – Endangered Community of the Cumberland Plane' (CPW).

Fauna

No threatened species were identified within the proposed bridge/road alignment, however during previous site investigations such species were identified within the broader redevelopment site and surrounding area.

One hollow bearing tree was identified within and one immediately adjacent to, the proposed link road alignment. The alignment and surrounding area also contains foraging, roosting and breeding resources that would be utilised by local populations of threatened micro-bats.

The location of the flora and fauna identified on the site is provided in **Figure 7**.

Impact Assessment

The proposed development will result in the loss of vegetation as outlined in **Table 1**. As can be seen, the proposed development will result in the loss of less than 0.05% of the overall extent of equivalent woodland and forest vegetation communities in the locality. The alignment of the access road has been designed so as to avoid the removal of large and mature trees. Part of the vegetation to be removed falls within an offset site established under the rezoning of the former Hoxton Park Aerodrome and as such an equivalent area will need to be agreed between Council and DECCW. A letter from Council outlining vegetation offsetting opportunities adjacent to Hinchinbrook Creek is included at **Appendix J**.

The proposal will result in the loss of one hollow-bearing tree within the construction footprint, however none of the visible hollows in the tree show signs of use. They may however provide occasional shelter for a number of different species.

The proposed development will not remove any known individuals or populations of threatened plants. Some habitat will be lost in the short term, however GHD consider that understorey species would readily persist in the environment beneath the bridge. They also consider that the proposed works are likely to affect limited numbers of individuals and that local populations are likely to persist in an alternative habitat outside the disturbed area.

As a result GHD consider that the proposed construction would be unlikely to threaten the survival of local populations or any fauna species.

The construction of the link road has the potential to impact on the integrity of the corridor by creating a direct obstacle to movement of less mobile fauna species. However the design of the M-Lock bridge is such that it will not interrupt fauna passages within the immediate riparian zone. The width of the bridge is less than 20m and as such does not pose a `hostile gap' to birds and microbats as these animals would readily traverse across the road (DECCW nominate a gap greater than 100m as being a `hostile gap').

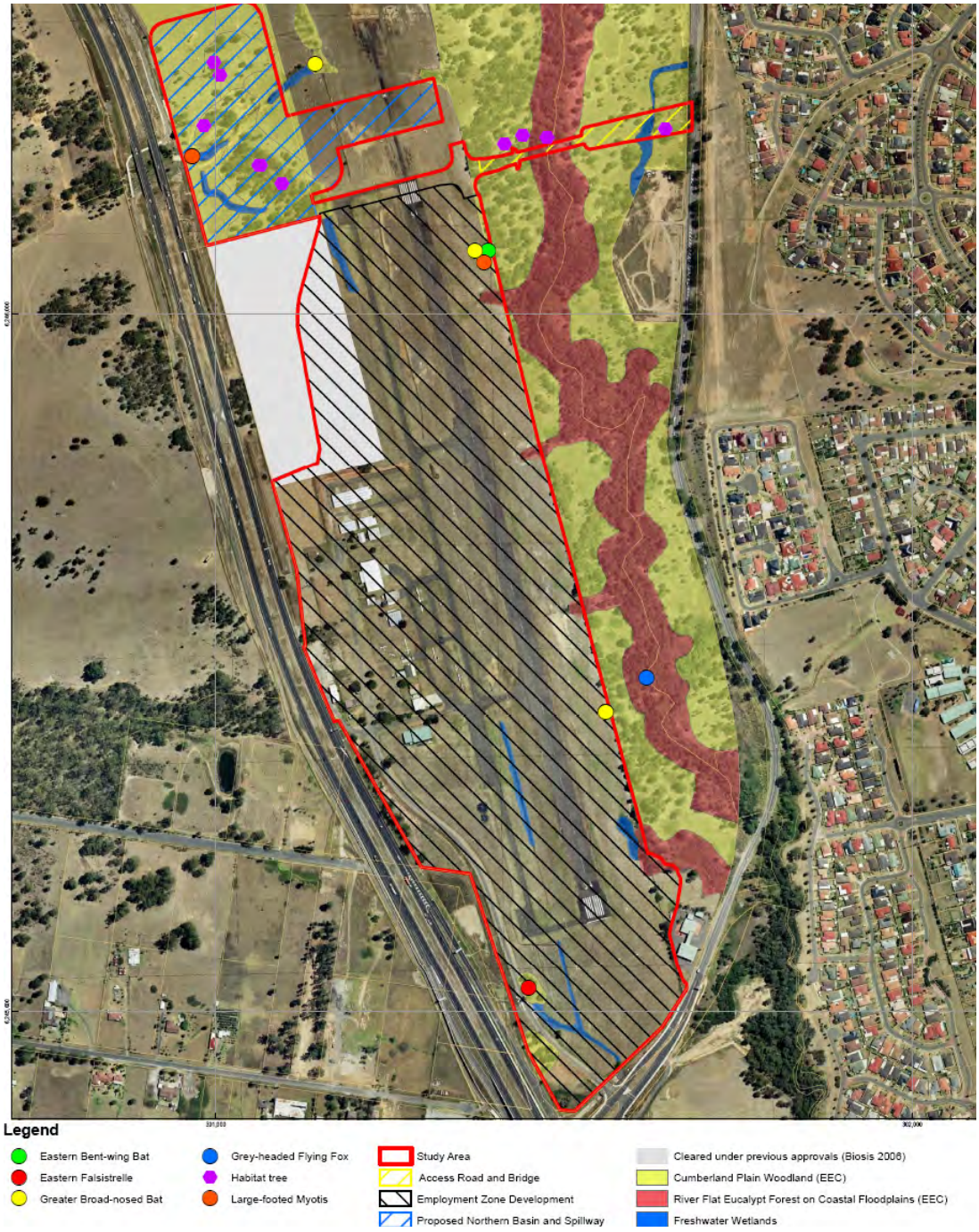

Figure 8 – Location of Flora and Fauna identified during field surveys

Source: GHD Pty Limited

Table 1 – Area of vegetation proposed to be removed

Vegetation Type	TSC Act Status	EPBC Act Status	Area of Vegetation Removal (ha)	Extent in the Locality (NPWS 2002)	Percentage of Extent in the Locality (NPWS 2002)
Shale Plains Woodland	CEEC	CEEC	0.79	1059.7	0.074
Alluvial Woodland	EEC		0.08	974.5	0.008
Total Woodland			**0.87**	**2034.2**	**0.082**
Exotic Grassland			0.33	-	-
Disturbed / Cleared Land			0.18	-	-
Total			**1.38**	-	-

Source: GHD

Mitigation Measures

In order to reduce the short and longer term impacts of the proposed works, GHD has recommended the following mitigation measures:

- Implementation of a Construction and Environmental Management Plan (CEMP) which includes:
  - Construction staging;
  - Soil and surface water management;
  - Site management;
  - Fauna management;
  - Ground cover clearance protocol;
  - Weed and pest management; and
  - Revegetation and habitat enhancement (See **Section 3.5**).
- Implementation of a fauna management protocol to minimise risk of harm to individuals within the construction footprint,
- Use of an M-lock bridge, or equivalent, for the proposed crossing of Hinchinbrook Creek in order to maintain the integrity of the existing channel and minimise impacts on ecological values of the watercourse and its riparian corridor;
- Preparation of a bio-diversity offset strategy
  - To be located in the eastern portion of the Hinchinbrook Creek Corridor;
  - Actual size and location of offset area is yet to be determined and agreed and will be the subject of negotiations with the relevant authorities including Liverpool Council and DECCW; and
  - Preferably aligned with the existing off-set strategy prepared during the rezoning of the site.

Commitments have been made at **Section 4** of this report which require the implementation and agreement of the above mitigation measures prior to the commencement of works relating to the bridge crossing. A CEMP has been prepared for the project which includes the recommendations of GHD (see **Appendix L**)

3.5 Vegetation Management Plan

In addition to the Ecological Impact Assessment, GHD has also prepared a Vegetation Management Plan (VMP) for the project (**Appendix J**) outlines a restoration programme. The area the subject of the VMP is shown in **Figure 9** and has been divided into two zones for the purposes of replanting – Zone 1: Riparian Corridor and Zone 2: Outside Riparian Corridor.

The VMP nominates appropriate species and planting densities for both zones and also a 3 year maintenance program which includes activities such as watering, herbicide spraying and general maintenance.

A commitment to implement the VMP once construction works are complete has been made at **Section 4** of this report.

Figure 9 – Vegetation Management Plan zones

Source: GHD

3.6 Flood Assessment

Golder Associates (Golders) has prepared a Flood Impact Assessment for the proposed construction of the link road Hinchinbrook Creek corridor (**Appendix G**). In undertaking the assessment Golders has updated the previous TUFLOW model of the approved development to incorporate the proposed bridge and the current design of Basin 6 (located to the north of the industrial park).

The modelling results show that the construction of the bridge and culvert bank will result in afflux upstream of the bridge between 10cm and 40cm in general and to the east of the proposed residential area (Elizabeth Hills) between 10cm and 20cm, in general. The maximum afflux immediately upstream of the western embankment of the proposed bridge is 40cm and 80cm immediately upstream of the eastern embankment in the 100y 2h design event. The afflux downstream of the Link Road is between 10 cm and 20 cm.

The above afflux does not impact on the residential land to the north of Len Waters Industrial Estate and does not impact on the flood free status of Cowpasture Road. The extent of afflux downstream of the Link Road does not extend to Hinchinbrook Creek Bridge on Cowpasture Road.

The modelling does indicate that the bus depot site will be flood affected in the 100y 2h event and that mitigation works, as such a bund along the western perimeter of the bus depot site will be required. A commitment to provide flood mitigation measures to Council's Bus Depot site which will ensure that the depot has a flood free status in the 1 in 100 year flood event has been made at **Section 4** of this report.

Mitigation measures will also be required to mitigate the increased velocities in the vicinity of the bridge and culvert entries of the Link Road which are of between 0.1m/s to 0.5m/s, in general, with a maximum increase of between 0.5m/s and 1.1m/s immediately upstream of the eastern set of culverts. Again a commitment has been made in relation to this impact at **Section 4** of this report.

3.7 Noise Assessment

Renzo Tonin & Associates (Renzo) has reviewed the proposed construction and operation of the northern access and associated link road for potential noise impacts (see **Appendix K**). The conclusions of the assessment are summarised below.

Operational Noise

Utilising the traffic volume forecasts provided by Colston Budd Hunt & Kafes Pty Ltd, Renzo Tonin were able to predict the noise levels from the proposed link road.

The noise level predictions presented in Renzo Tonin's report indicate predicted noise levels of 51-52dB(A) at the nearest most potentially affected receiver locations in Croker Place, Green Valley. On the basis of the future predicted noise levels of 63dB(A), as presented in the Heggies Report for the upgrade of Cowpasture Road, noise levels form the proposed access road will be compliant with the requirements of the Environmental Criteria Road Traffic Noise (ECRTN). No noise mitigation measures are therefore required as a result of the proposed link road / bridge.

Construction Noise

The noise monitoring results from the Concept Plan application have been used to assess to potential construction noise impacts. The most representative locations were considered to be Nicol Place, Hinchinbrook and Wardang Road, Hinchinbrook. The construction noise criteria set for the nearest residential receivers is summarised in **Table 2**.

Renzo Tonin has considered the plant and equipment likely to be used during construction works and the noise levels that are likely to occur. **Table 2** shows the predicted noise levels will exceed the `Noise Affected' but will not exceed the `Highly Affected' DECCW construction noise criteria. The major source during the bridgeworks is during piling which is to occur for approximately 3-4 weeks. With regard to the Concrete Works and Paving, cumulative noise levels are dominated by the concrete saw. When the concrete saw is not in operation, noise levels are predicted to comply.

Notwithstanding the above, Renzo Tonin recommend that Mirvac Projects Pty Limited apply all feasible and reasonable work practices to meet the noise affected level. The CEMP at **Appendix L** includes mitigative measures to reduce acoustic impacts associated with the proposed development. It is also noted that a commitment has been made previously regarding the management of acoustic impacts during construction works.

Table 2 – Construction Noise Predictions, dB(A)

Location	Scenario	Predicted L_{AEQ} Noise Level	DECCW Noise Criteria During Recommended Construction Hours	
			Noise Affected	Highly Noise Affected
A1 – Croker Place, Green Valley – rear yard of western most properties	Bridgeworks	64	59*	75
	Concrete works	62	59*	75
	Paving	62	59*	75

* Noise affected criteria equalling free field road traffic noise levels

Source: Renzo Tonin

3.8 Visual Assessment

AECOM has prepared a Visual Impact Assessment (VIA) for the proposed development (**Appendix M**). AECOM considers that there are two observer locations which warrant a visual impact assessment which are shown in **Figure 10** discussed below.

Figure 10 – Observer locations

Source: AECOM

Cowpasture Road (Observer Location 1)

The first observer location relates to those dwellings located opposite the northern intersection and the proposed link road and road users travelling on Cowpasture Road.

It is noted that the Council is proposing to construct playing fields to the north of the site that will have a significant impact on the views obtained from this location. In particular the development of the playing fields would remove a large number of trees which would otherwise have limited the visual prominence of the Link Road / bridge. The assessment has thus been undertaken for both the existing scenario (Scenario 1) and the proposed playing field scenario (Scenario 2).

Dwellings

The current views from the dwellings at this location have a distance of the site from 60 – 70m away from their second storey windows. In the foreground of the view is a grassed area, an earth berm and a noise wall. An electrical transmission tower also comprises a significant foreground element within the view.

In the middle ground of the view is Cowpasture Road, a stand of remnant trees and Council's bus depot. Whilst in the background the view is dominated by a solid green band of vegetation (Hinchinbrook Creek Corridor).

In Scenario 1 the bridge road will appear as a break in the riparian canopy, however views to and along the proposed bridge road will vary due to the differing angles of the houses. Only those dwellings directly opposite the road will have a view down the length of the road, however this will be obscured by a stand of remnant trees on the eastern side of Cowpasture Road and will not result in substantial views to the approved industrial development.

The impact of the development (Scenario 1) on the views obtained from the dwellings is provided in the photomontages at **Figures 11** and **12**. AECOM consider that the view impact will be minimal as views to the road will be primarily against a backdrop of dense riparian forest and impacts can be mitigated by strategic planting of trees either side of the entry, and revegetation of the forest / open wood land along the length of the proposed road.

Under Scenario 2 the proposed road will be seen in the context of an extended break in the Hinchinbrook Creek canopy along side Cowpasture Road. The playfields and car park will comprise a dominant part of this view. AECOM recommend that the batters to the link road be reinstated with locally endemic shrubs and grasses / ground covers to reduce the visual prominence of the road.

Vehicles

When driving along Cowpasture Road, the site is perceived as part of the Hinchinbrook Creek corridor.

Under Scenario 1, travellers may obtain glimpse views down the proposed road to the industrial development, however these will be fleeting as the speed limit is likely to be in the order of 80km/hr and as such the impact is considered to be minimal.

In the context of Scenario 2, the proposed road will be seen as the beginning or end of a break in the canopy associated with the playing fields. AECOM recommend the targeted planting of trees along side the proposed link road to obscure the views obtained.

Figure 11 – Existing View

Figure 12 – Proposed View

Development North of the Len Waters Industrial Estate (Observer Location 2)

This receiver location relates to the proposed residential and neighbourhood centre immediately north of the approved Len Waters Industrial Estate.

It is noted that this view is currently changing with the construction of the approved warehouse and distribution centres which will become the dominant element in the view. An avenue of Brush Box trees are proposed to line the northern boundary of the industrial complex, in conjunction with a tall dense hedge along the side boundary. These elements will also form a predominant part of the view.

Due to the oblique viewing angle to the Link Road corridor, the long line of the riparian corridor will remain visually unbroken and the Link Road will appear with a vegetated back drop.

Whilst the link road will be visually apparent, AECOM consider that the visual impact of the proposed bridge is acceptable as it is an anticipated feature in the developed landscape and is in context with the soon to be predominantly urban setting.

3.9 Aboriginal Heritage Assessment

The original Aboriginal Heritage Assessment prepared (MDCA 2010 report) was prepared by Mary Dallas Consulting Archaeologists (MDCA) and included an assessment of the construction of a bridge over Hinchinbrook Creek as well as the construction of the warehouse buildings on the former airstrip (**Appendix N**). The report concluded that the Hinchinbrook Creek corridor has the potential to contain Aboriginal Archaeological Deposits and in light of this an Aboriginal Archaeological Management Plan was included in the MDCA 2010 report. The Management Plan contained the following recommendation:

`Mirvac group undertake subsurface archaeological investigation in the form of test excavation of any portions of HPA PAD 1 [shown in green in **Figure 13**] *proposed for impact, including the proposed M7-Cowpasture Road link road/bridge corridor and any possible future drainage works within the area of the HPA PAD 1. These test excavations should precede any physical development works to the east of the current airstrip boundary fence. Dependent on the results of these test excavations, documented Aboriginal archaeological remains may be determined to require partial or total preservation or future partial or total salvage excavation.'*

Since the MDCA 2010 report was written, the design of the bridge crossing has progressed and its location has moved slightly north of the area that was originally assessed. MDCA consulted the following Aboriginal stakeholder organisations on the new alignment and offered them the opportunity to revisit the site and inspect the area of the site subject to the revised road alignment:

- Gandangara Local Aboriginal Land Council (GLALC);
- Darug Tribal Aboriginal Corporation (DTAC);
- Darug Custodians Aboriginal Corporation (DCAC); and
- Darug Aboriginal Cultural Heritage Assessments (DACHA).

All of the above organisations felt that a further field survey was not warranted as the earlier recommendation remains relevant to the part of the site affected by the realignment of the link road.

MDCA are of the opinion that the proposed changes do not require the preparation of a revised or separate archaeology assessment and that the recommendations made in the original assessment remain appropriate in terms of managing the impacts of the realigned link road.

As the original application did not include the link road and therefore did not include a commitment regarding investigation works in HPA PAD 1 the Statement of Commitments at **Section 4** of this report has been updated so as to include the undertaking of text excavation(s) prior to commencing works in HPA PAD 1.

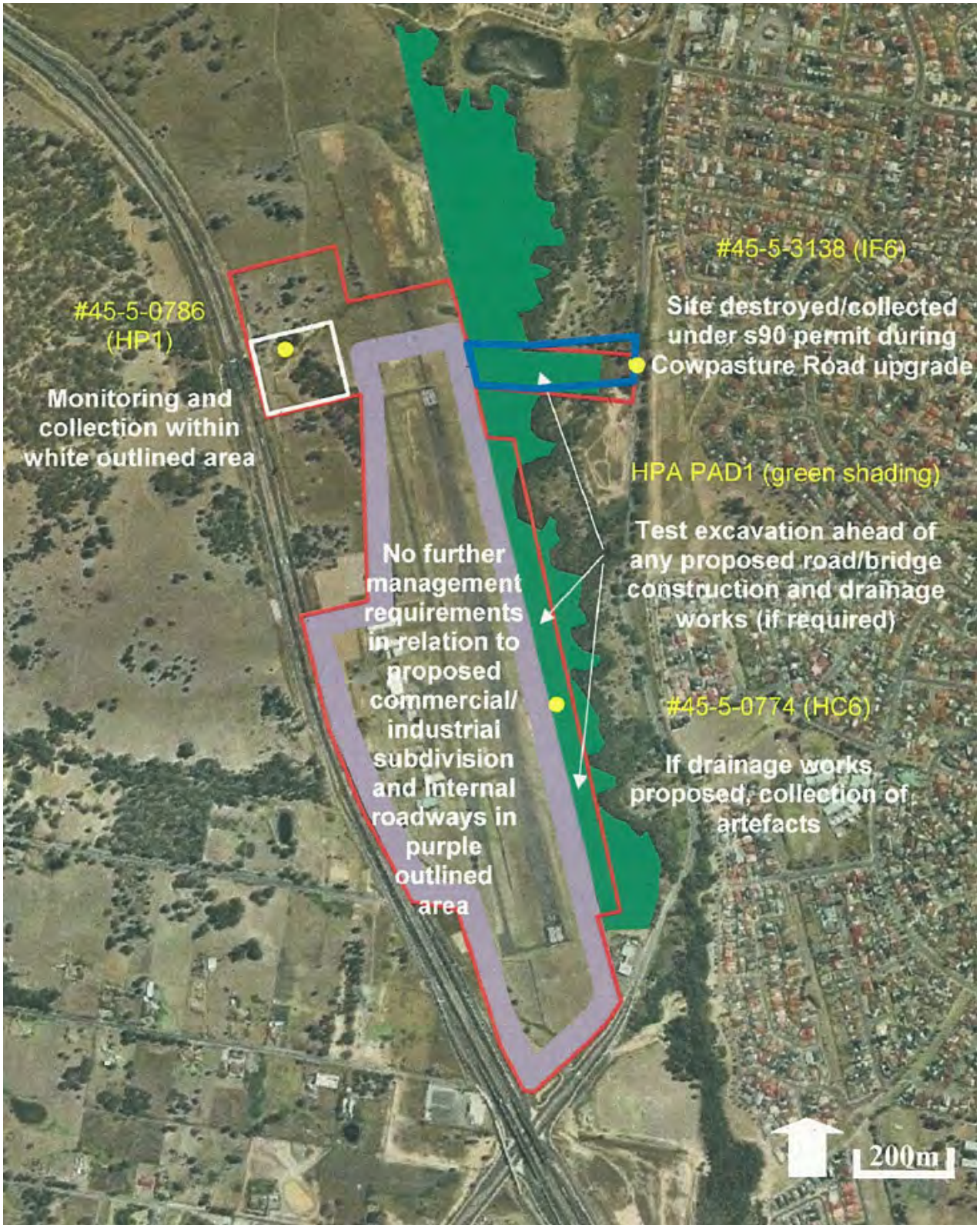

Figure 13 – Location of HPA PAD 1

Source: Mary Dallas Consulting Archaeologists

3.10 Construction Management

A revised Construction and Environmental Management Plan (CEMP) has been prepared by ADW Johnson (see **Appendix L**). The CEMP remains substantially the same as that which was approved within the original Stage 1 PA, however additional provisions relating specifically to the proposed works within the Hinchinbrook Creek corridor have been added to the plan. The additional provisions relate to the management of Aboriginal Archaeology and Biodiversity and are consistent with the recommendations made by Mary Dallas Consulting Archaeologists and GHD Pty Ltd.

3.11 Environmental Risk Assessment

Approach

The Environmental Risk Assessment at **Table 4** for the site has been adapted from Australian Standard AS4369:1999 Risk Management and environmental risk tools developed by other organisations (summarised at **Table 3**). The Environmental Risk Assessment establishes a residual risk by reviewing the 'significance of environmental impacts' and the 'ability to manage those impacts'.

The significance of environmental impacts is assigned a value between 1 and 5 based on:

- The receiving environment;
- The level of understanding of the type and extent of impacts; and
- The likely community response to the environmental consequence of the project;

The manageability of environmental impact is assigned a value between 1 and 5 based on:

- the complexity of mitigation measures;
- the known level of performance of the safeguards proposed; and
- the opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

Table 3 – Environmental rating risk matrix

Significance of Impact	Manageability of Impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 - Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 - Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 - Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 - High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 - Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

Table 4 – Environmental risk matrix for project

Item	Phase	Potential Environmental Impact	Proposed Mitigation Measures	Risk Assessment		
				Significance of Impact	Manageability of Impact	Residual Impact
Noise	C + O	▪ Increase in noise levels during construction activities ▪ Increase in noise levels from traffic using the Link Road	▪ Installation of Noise Attenuation Measures where required ▪ Conduction of noise assessments prior to undertaking construction measures ▪ Compliance with assessment criteria	2	1	3 (low)
Traffic	C + O	▪ Increased traffic on local roads	▪ Provision of footpaths and dedicated cycleway on site so as to encourage more sustainable forms of travel	2	2	4 (low / medium)
Visual	O	▪ Visual impact of link road in Hinchinbrook Creek Corridor	▪ Installation of appropriate landscaping	2	1	3 (low)
Heritage	C + O	▪ Potential for Archaeological Deposits	▪ Implementation of an archaeology management strategy	1	2	3 (low)
Biodiversity	C + O	▪ Loss of CPW on site	▪ Implementation of an agreed off-set strategy ▪ Implementation of an Environmental Construction Management Plan	4	3	7 (high / medium)
Water Quality	C + O	▪ Deterioration in water quality in Hinchinbrook Creek	▪ Implementation of a Stormwater Management Plan ▪ Implementation of a soil and water management plan	1	2	3 (low)
Flooding	O	▪ Potential flooding of site during 1 in 100 year storm events ▪ Adverse impacts on Hinchinbrook Creek riparian corridor	▪ Implementation of Stormwater Management Strategy ▪ Use of a M-lock design	4	3	7 (high / medium)
Sustainability	C + O	▪ Potential increase in emissions	▪ Implementation of a sustainable construction methods and materials	1	1	2 (low)

Key: C – Construction, O: Operation

4.0 Revised Statement of Commitments

The proposed changes to the Concept Plan and Stage 1 Infrastructure Application necessitate the following changes to the Statement of Commitments for the development (refer **Table 5**). Deletions are shown in ~~**bold strikethrough**~~ and additions are shown in ***bold italics***.

Table 5 – Revised Statement of Commitments

Subject	No.	Commitments	Timing
Contamination	1.	A Construction Environmental Management Plan (CEMP) will be prepared by an environmental consultant and implemented. The plan will provide details on the following best practices in relation to the development of "Unexpected Finds Protocols" to provide clear guidance to site works for the management of unexpected findings during the site development process.	Prior to excavation / construction works
	2.	A post-demolition validation of the site will be conducted so as to confirm that items such as asbestos, additional USTs or signs of chemical contamination are not present on the site.	Post demolition and prior to excavation / construction works
Work Place Travel Plans	3.	Work Place Travel Plans will be prepared for each business on the site and issued to staff.	During staff orientation procedures.
Bushfire Protection	4.	A Positive Covenant, created under the provisions of the *Conveyancing Act 1919*, will be placed on the title of the land which will require compliance with the management prescriptions detailed in the Bushfire Report.	Prior to issue of a final occupation certificate
	5.	The proposed buildings will be designed and constructed in accordance with the recommendations of the Bushfire Consultant. Details of protection measures will be provided on construction drawings.	Prior to issue of a Construction Certificate.
	6.	A Bushfire Emergency Evacuation Plan will be created for the buildings on the site.	Prior to issue of an Occupation Certificate
Non-Indigenous Heritage Interpretation	7.	The recommendations in the Heritage Interpretation Plan and Strategy, will be implemented and will include the following: ▪ Interpretation signage which is easily distinguishable from directional signage; ▪ Name the new roads aviation specific names (subject to approval of relevant authority); ▪ Use of signage and other media which symbolise the WWII use of the site; ▪ Alignment and landscaping of new north/south access road.	Within 3 months of final occupation.
	8.	Interpretative measures to be implemented in the areas occupied by the northern detention basin and B1 zone will be provided with the detailed project applications for those areas.	Submitted with applications for those parts of the site.
Construction Management	9.	The Construction and Environmental Management Plan will be updated to reflect the requirements of any approval or change in scope of the project.	Following approval and prior to issue of a CC.

Subject	No.	Commitments	Timing
	10.	All construction undertaken on the site will comply with the CEMP.	During construction.
Aboriginal Heritage	11.	▪ If impacts of site 45-5-0774 are proposed in relation to drainage works in this area, the Mirvac Group, through the registered Aboriginal stakeholder groups collect the stone artefacts comprising the site at this location; ▪ Aboriginal Archaeological records shall be updated if the above artefacts are removed.	Prior to and during construction works.
	12.	Recommendations made in relation to the construction of the northern detention basin ~~and bridge over Hinchinbrook Creek~~ will be addressed in future applications for those specific works. ***A subsurface archaeological investigation in the form of a test excavation will be undertaken in HPA PAD1 in any portion that is proposed for impact. These investigations will be undertaken in partnership with the Registered Aboriginal Stakeholder Groups and in accordance with the `Strategy for Proposed Archaeological Investigations' prepared for the project.***	During the preparation of a Project Application for the relevant scope of works. ***Prior to or concurrent with works commencing in the part of the site that is east of the former airstrip boundary fence.***
Salinity	13.	A Salinity Investigation will be undertaken on the site. The investigation will be reported and include a Salinity Management Plan.	Following the completion of Bulk Earthworks.
Geotechnical	14.	The proposed earthworks will be undertaken in accordance with the geotechnical recommendations of Douglas Partners.	Prior to and during bulk earthworks.
Noise	15.	Fixed mechanical plant equipment will be selected and treated so as to comply with the established noise criteria for the project.	Prior to issue of a final occupation certificate.
	16.	Staff will be trained in relation to correct methods of container handling, prior to commencing work on site so as to reduce the potential for generation of adverse noise.	During staff orientation procedures.
	17.	During construction works, noise mitigation measures will be implemented where required so as to ensure that works are carried out in accordance with the recommendations of Renzo Tonin and Associates Pty Limited. During non-standard hours, works which involved equipment activities above L_{Aeq} 110dB(A) will be minimised or acoustically treated.	Through the duration of construction works.
Ecology	18.	The recommendations made by GHD in relation to the construction of the northern detention ~~basin and bridge across Hinchinbrook Creek~~ will be addressed as part of the detailed PA~~s~~ for those works.	During the preparation of a Project Application for the relevant scope of works.

Subject	No.	Commitments	Timing
	19.	***A Biodiversity Off-set Strategy will be prepared in consultation with the DoP, Liverpool Council and DECCW.***	***Prior to or concurrent with commencement of any works within the Hinchinbrook Creek Corridor.***
	20.	***A fauna management protocol will be implemented for works within the Hinchinbrook Creek Corridor.***	***Prior to or concurrent with commencement of any works within the Hinchinbrook Creek Corridor.***
	21.	***The Vegetation Management Plan will be implemented.***	***Post completion of construction works within the Hinchinbrook Creek Corridor.***
Energy Efficiency	22.	The proposed buildings will be constructed so as to be energy and water efficient as discussed in AECOM's ESD Report. The proponent commits to achieving a 15% reduction in greenhouse has emissions	Within 3 months of final occupation of each warehouse building.
Waste Management	23.	A Waste Management Plan will be prepared for the two Mirvac Residual lots when the detailed Project Application is prepared.	Part of Project Application for Mirvac Residual lots.
Estate Entrance	24.	Detailed plans for the Cowpasture Road entrance to the site will be prepared and submitted to the Department of Planning for approval. The plans will include information regarding: ▪ Landscaping; ▪ Signage / site identification elements; ▪ Heritage interpretation elements; and ▪ Lighting.	Within ~~3~~ ***four (4)*** months of the date of approval of the Concept Plan.
Flood Mitigation	***25.***	***Flood mitigation measures will be constructed around the Bus Depot site which will render the Bus Depot site flood free during the 1 in 100 year flood event.***	***Design measures to be determined prior to issue of a Construction Certificate for the Link Road***
	26.	***Mitigation measures will be implemented to reduce flow velocities which are increased by the proposed link road.***	***Design measures to be determined prior to issue of a Construction Certificate for the Link Road***
Drainage	***27.***	***An easement will be created on the land title in favour of Council for access to the underground drainage infrastructure in the south-western corner of the site***	***Prior to occupation of the residual lot.***

5.0 Conclusion

The following amendments are sought to the Len Waters Industrial Estate Concept Plan Approval (MP10_0007):

- Amended site layout, including the inclusion of the Hinchinbrook Creek Link Road; and
- Rezoning of part of the residual lot from SP2 Infrastructure to IN2 Light Industrial.

The following amendments are sought to the Stage 1 Infrastructure Project Approval (MP10_0008):

- Construction of the Hinchinbrook Creek Link Road / bridge;
- Construction of the northern intersection with Cowpasture Road;
- Implementation of flood mitigation works; and
- Revegetation of disturbed areas within the Hinchinbrook Creek Corridor.

This EAR has demonstrated that the proposed link road is generally consistent with the relevant planning controls, in particular the Liverpool Development Control Plan and the street network identified in that plan. The construction of the link road is also consistent with Condition 8 of the approved Concept Plan and will facilitate alternate access to the Len Waters Distribution Park, the HPAL residential land and the suburb of Elizabeth Hills.

The proposed rezoning of the south-western corner of the site is in accordance with prior discussions with the Department and will facilitate more efficient use of the land whilst still achieving the same outcome in terms of stormwater management.

The report details the appropriate mitigation measures that will be in place during the construction and operational phases of the development so as to minimise environmental and amenity impacts on surrounding development and residential amenity.

In light of the above and in the absence of any adverse environmental impacts, the application is recommended for approval.