

# 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 Northern Detention Basin  
6 and Rezone the Land to the North of the Industrial Zone

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

November 2010 ■ 10293

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This report has been prepared by: Jennie Buchanan

Signature Date 10/11/2010

This report has been reviewed by: Gordon Kirkby

Signature Date 10/11/2010

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# Statement of Validity

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

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**Environmental Assessment prepared by**

Name	Jennie Buchanan
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In respect of	Project Application

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**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 Northern Detention Basin 6.

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**Environmental Assessment**

Certificate	<p>An Environmental Assessment (EA) is attached</p> <p>I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge:</p> <ul style="list-style-type: none"><li>■ It is in accordance with the Environmental Planning and Assessment Act and Regulation.</li><li>■ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.</li></ul>
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Signature

Name Jennie Buchanan

Date 10 November 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 include the construction of the northern detention basin 6 and to rezone the land no longer required for infrastructure purposes, as well as the reconfiguration of landuses adjoining the northern edge of the industrial zone as a result of the detention basin 6.

### Proposed Modifications

The following amendments are sought to the Len Waters Industrial Estate Concept Plan Approval (MP10\_0007):

- Amended site layout which includes the northern detention basin 6; and
- Rezoning of the land immediately north of the industrial zone to reduce the size of the SP2 Infrastructure Zone and as a result of the revised northern basin 6, revise the B1 Neighbourhood Centre Zone and R2 & R3 Residential Zones.

The following amendments are sought to the Stage 1 Infrastructure Project Approval (MP10\_0008):

- Construction of the northern detention basin 6 ; and
- Revegetation of disturbed areas within the footprint of the basin.

### Environmental Assessment

The environmental assessment of the proposed modifications has found the:

- The proposed basin design will provide a better design outcome which will result in public benefits, including the provision of space for active recreational purposes (by others);
- The proposal is consistent with, and will satisfy a requirement within the approved Voluntary Planning Agreement applying to the site;
- The proposed zoning amendments will provide a higher level of residential amenity for the residents within the R2 & R3 residential zones due to the adjustment of B1 Neighbourhood Zone which will now act as a buffer between the industrial and residential zones;
- The design of the basin will be able to cater for the 1:100 year ARI storm event;
- Impacts on Flora and Fauna will be relatively minor and can be mitigated through the revegetation of the basin, the provision of an offset area and the implementation of a Construction and Environmental Management Plan;
- 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.
- The proposed Northern basin 6 will provide an asset which is more easily manageable by Liverpool City Council.

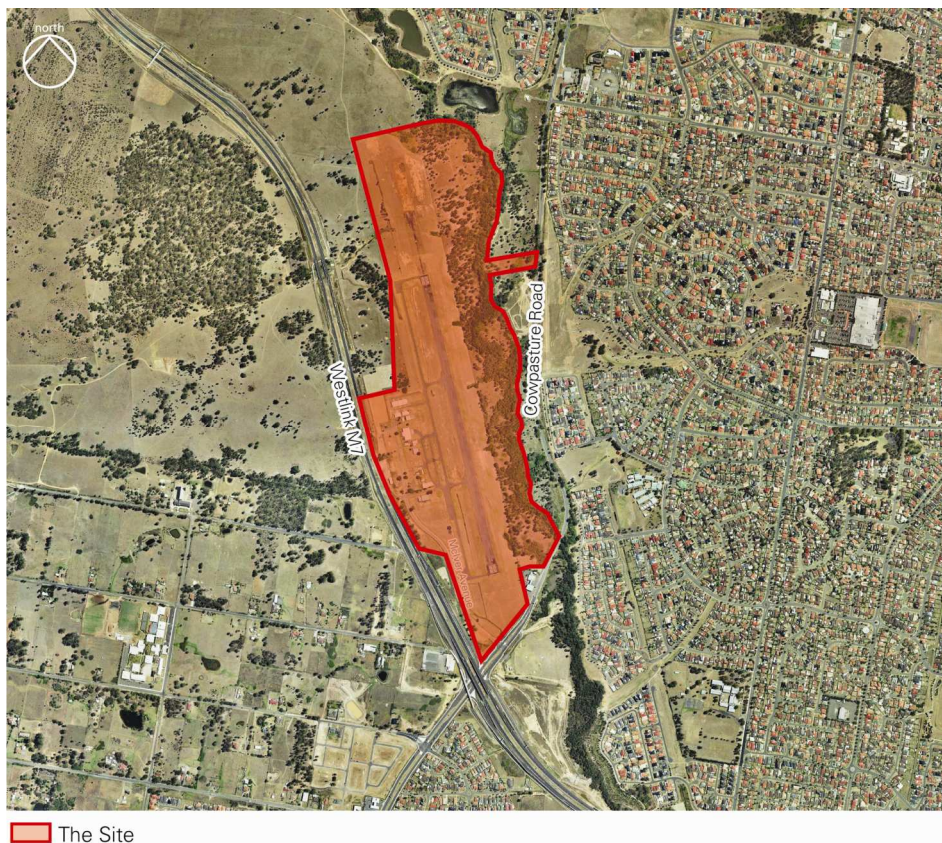
In light of the public benefits that will result from the proposed modifications, the requirements of the VPA applying to the site and in the absence of any adverse environmental impacts, the proposed development is recommended for approval.

## 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 include the construction of the northern detention basin 6 and to rezone the land no longer required for infrastructure purposes, as well as the reconfiguration of landuses adjoining the northern edge of the industrial zone.

### 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 Current Approvals / Applications

### 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<sup>2</sup> 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.

A copy of the Notice of Determination is included at **Appendix A**.

### 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**.



## Modifications to Concept Plan and Stage 1 Infrastructure Applications

Modifications to the approved Concept Plan and Stage 1 Infrastructure Applications were lodged with the Department of Planning in September 2010. The amendments sought were the following:

### 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.

### 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.

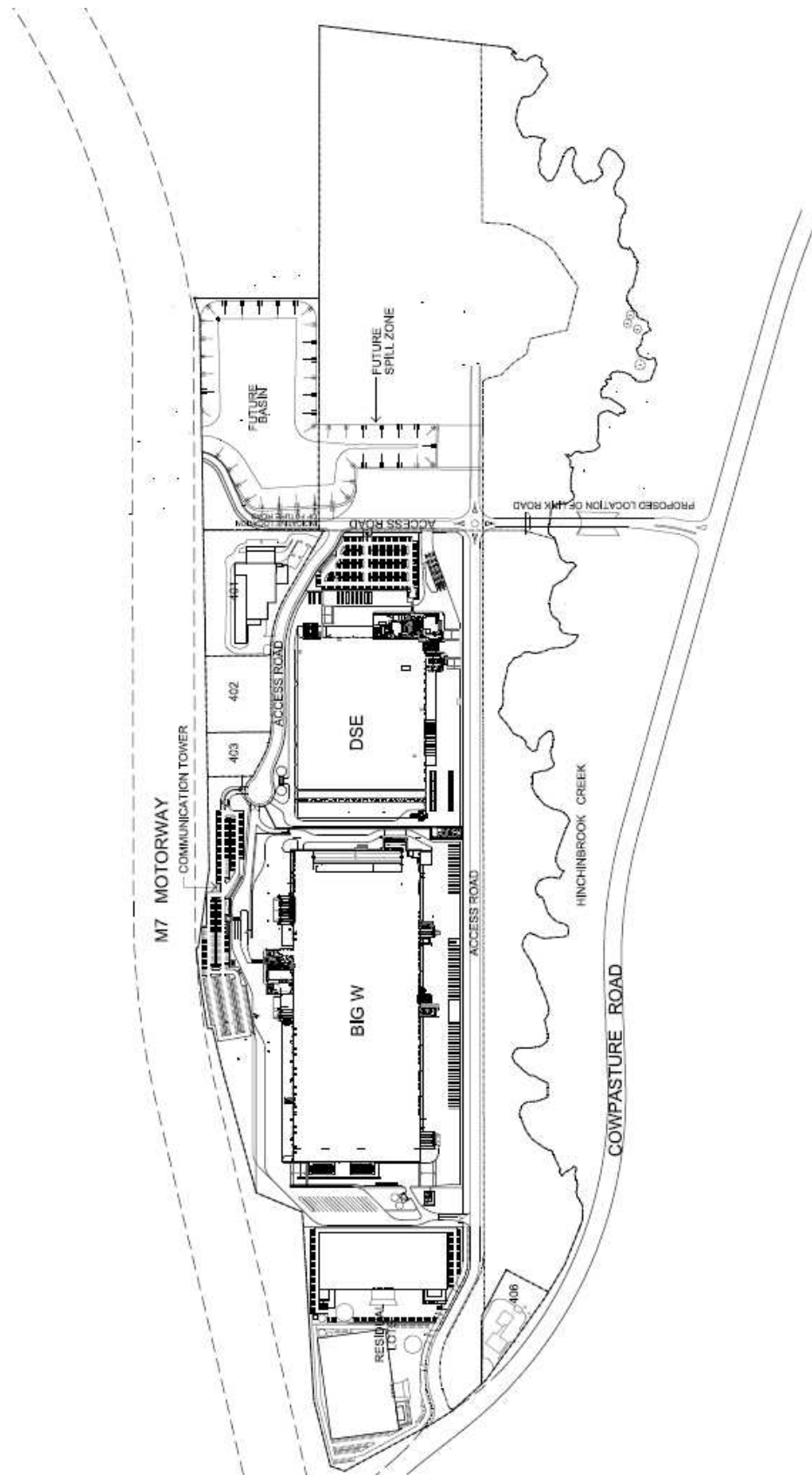
At the time of writing this report the modifications had been publicly exhibited and were under assessment by the Department of Planning. The proposed modified Concept Plan is shown in **Figure 2**.

## 1.3 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 approximately \$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 northern detention basin 6 and associated spill zone in accordance with the VPA.



**Figure 2** – Modified Concept Plan as proposed in the Bridge / Link rd modification

Source: Mirvac Design

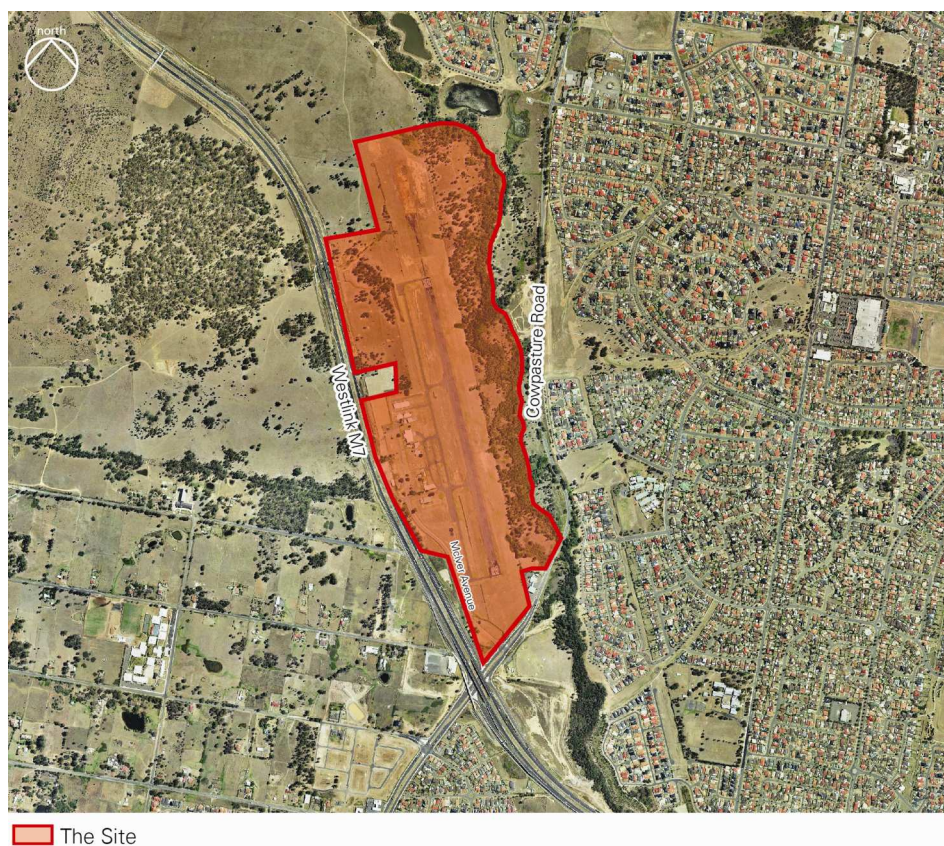
## 2.0 Proposed Modifications

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

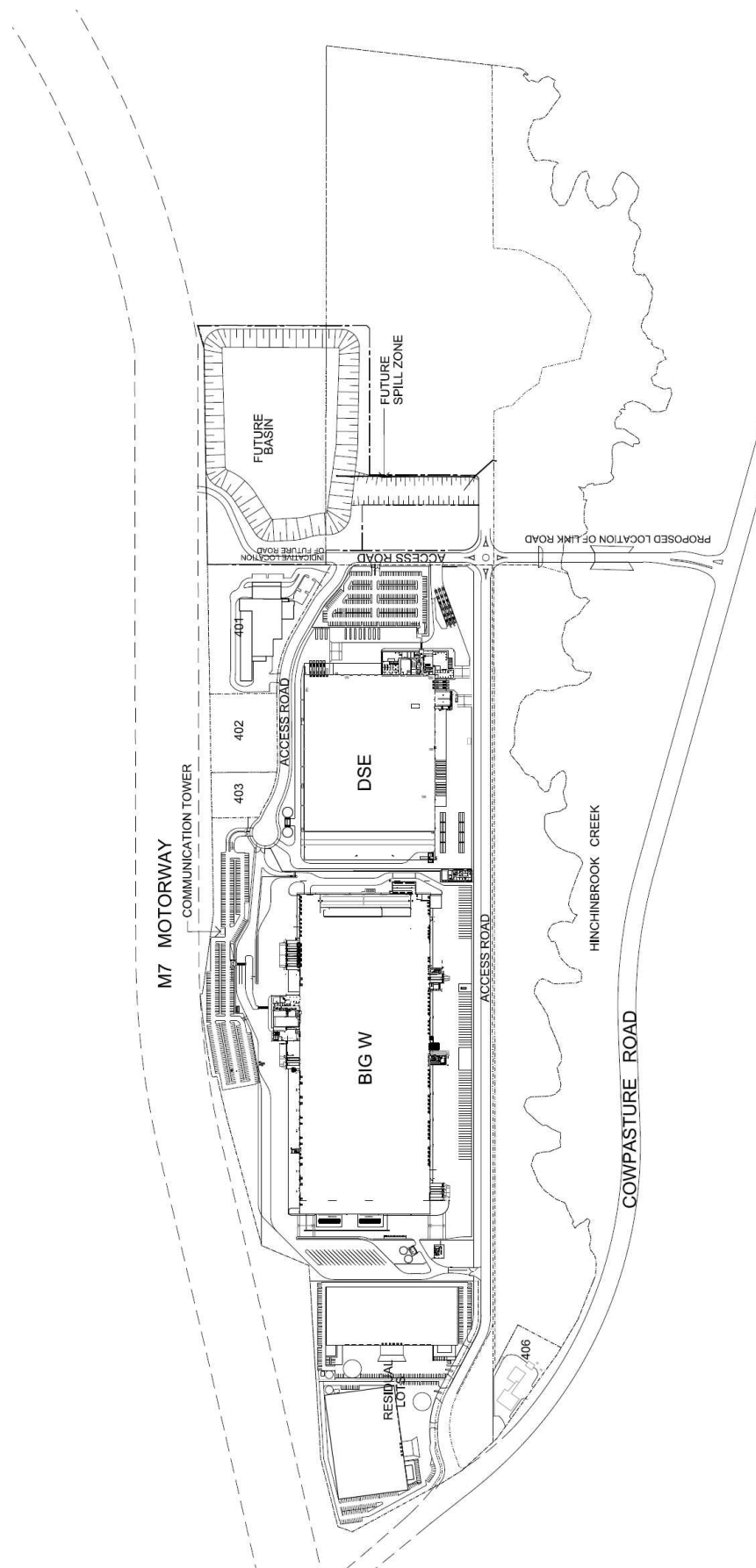
### 2.1 Concept Plan Modification

#### 2.1.1 Revised Concept Plan Layout

This modification seeks approval for the inclusion of the northern detention basin 6 & associated adjusted land use rezoning in the Concept Plan for the Len Waters Industrial Estate. The site plan has been updated to include the basin area, see **Figure 3**. The revised Concept Plan layout is shown in **Figure 4**.



**Figure 3** – Revised site boundary



**Figure 4 – Revised Concept Plan layout**

Source: Mirvac Design



## 2.1.2 Rezoning of land to the east of the northern detention basin

This application seeks to amend the zoning, height and floor space ratio (FSR) applying to the land that is immediately north of the approved Dick Smith warehouse development (industrial zone).

When the land was originally zoned under Liverpool LEP, only a conceptual design of the northern detention basin had been prepared and consequently a generous portion of the site was zoned SP2 Infrastructure so as to ensure that the future design of the basin could be easily accommodated on the site. This was further reinforced in provisions of the VPA whereby Council have an obligation to consider in good faith, any information by the developer in relation to whether that part of the land zoned SP2 infrastructure (drainage) is in excess of the land reasonably required for drainage and detention in the locality. Should Council form the view that the land is so zoned in excess of the land required, the Council will use its best endeavours to have such of the land zoned SP2 infrastructure (drainage) rezoned for an appropriate land use (refer clause 3.10 of the VPA).

Mirvac has commissioned ADW Johnson to undertake a review of the basin design, prepared by J. Wyndham Prince (included at **Appendix C**) which identified a number of inefficiencies and impractical items that were associated with the design Council had in principally agreed with HPAL (owner of the site at the time). These included:

- An irregular shaped basin with no consideration of the affect on adjoining properties.
- The requirement to construct extensive retaining walls around the perimeter and the significant maintenance and safety issues associated with the retaining walls.
- The basin floor area and configuration could not be used for recreational purposes.
- The road design required retaining walls to the adjoining property.
- The design introduced a trapped low point under the M7 with no relief during major storm events or upon blockage of the pipe system.
- Stormwater associated with the M7 runoff had not been integrated with the overall stormwater management system.
- Runoff affecting adjoining properties (Blum) had not been adequately addressed,
- The design did not adequate address the provision of services and their intended location.

Since the review by J. Wyndham Prince, ADW Johnson has progressed the detailed design of the basin which (included at **Appendix D**) resolves many of the above issues and confirms that detention basin with a peak storage of 136,827m<sup>3</sup> would be sufficient to meet Council's requirements for the 1:100 year ARI, as opposed to the original concept which require 136,330m<sup>3</sup> storage. Specifically the proposed design generates the following benefits:

- A basin with internal dimensions suitable to accommodate active sports activities, to be embellished, by others;
- The deletion of retaining walls;
- A road design that accommodates services in a more efficient manner which limits the amount of earthworks required under the M7;

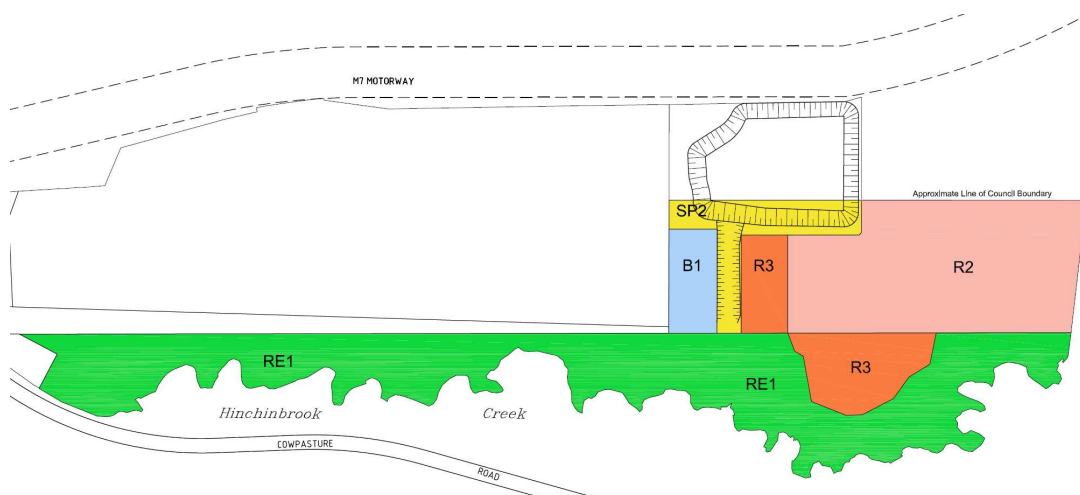
- A road design the accommodates existing infrastructure;
- A design that negates any affect on adjoining properties e.g. stormwater and retaining walls;
- Integration of the M7 spill containment basin into the proposed overall stormwater network;
- Drainage facilities to accommodate the trapped low point beneath the M7 overpass; and
- A totally integrated design with adjoining land development proposals.

In light of the revised basin design and extent, in accordance with Councils obligations under the VPA, it is proposed to adjust the zoning of the land areas adjoining the proposed new northern basin 6. These amendments include, adjusting the B1 area so as to provide a buffer between the industrial warehouse uses, swapping the location of R3 zone, and adjusting the R2 zone to reflect the revised basin area.

The existing and proposed zoning is shown in **Figures 5** and **6** respectively. The areas of the different zones are provided in **Table 1**. Please note as a result of not being able to obtain a CAD drawing from LCC these areas are approximate only and defined from a PDF version of LCC's LEP. Council should make available a CAD drawing of their LEP zoning map in order for an accurate measurement to be undertaken. A3 size copies of the existing and proposed zoning plans are included at **Appendix E**.



**Figure 5 – Existing zoning**



**Figure 6 – Proposed zoning**

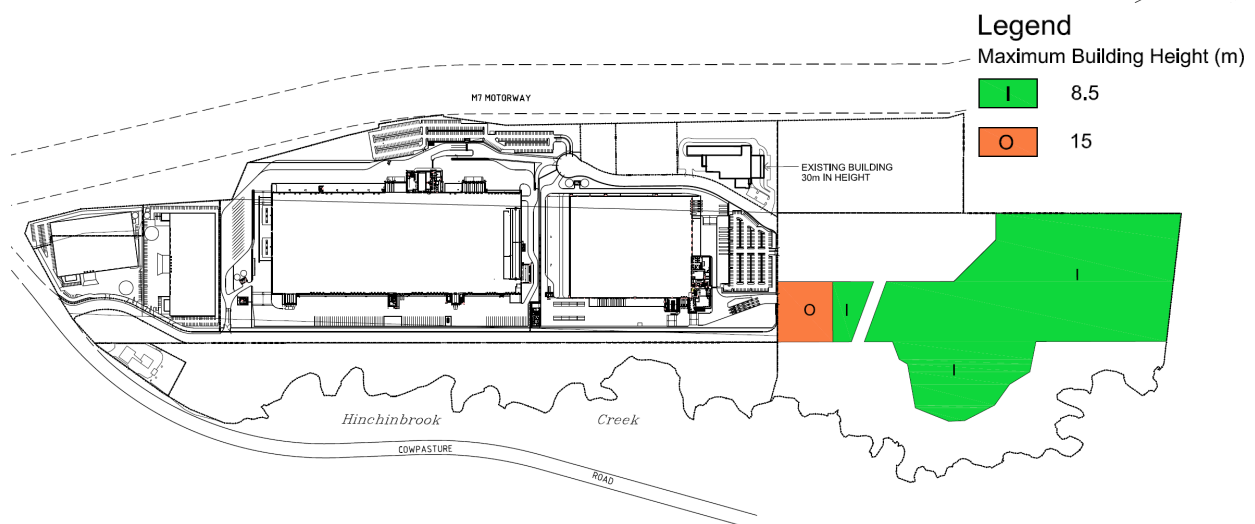
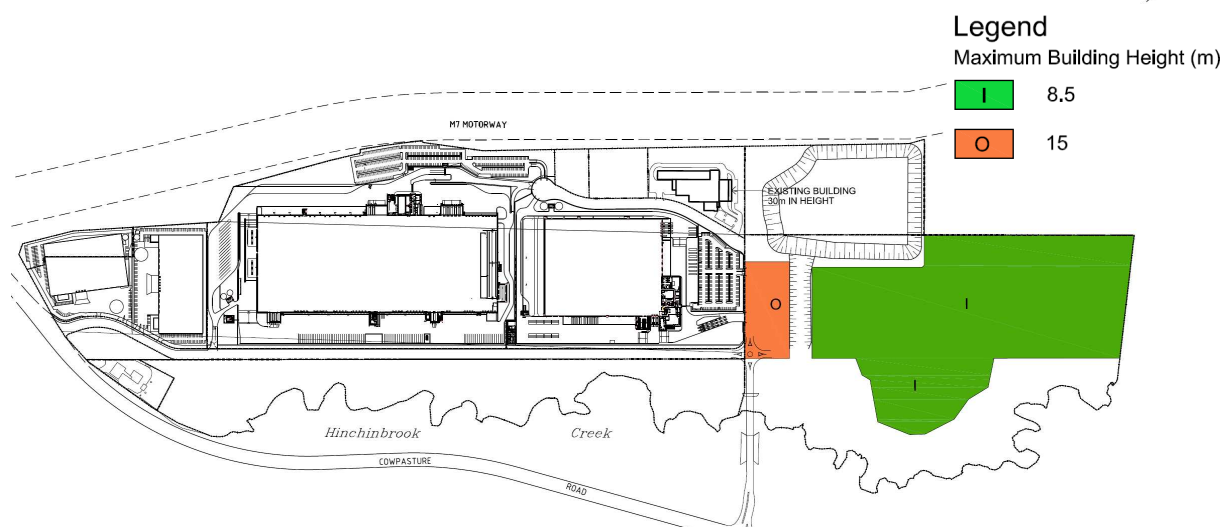
**Table 1** – Approximate areas of proposed zoning amendments

Zone	Current (m <sup>2</sup> )	Proposed (m <sup>2</sup> )	Difference (m <sup>2</sup> )
SP2	46,770	25,992	-20,778
B1	10,518	14,778	+ 4,260
R2	97,347	106,044	+ 8,679
R3	30,871	38,700	+ 7,829

Source: Mirvac Projects Pty Limited

### 2.1.3 Height and FSR controls

As a result of the revised zoning, and as a matter of procedure, it is also proposed to amend the height and Floor Space Ratio (FSR) controls such that they reflect the proposed zoning of the site. The existing and proposed height controls are provided in **Figures 7** and **8**. The existing and proposed FSR controls are provided in **Figures 9** and **10**.

**Figure 7** – Existing height controls**Figure 8** – Proposed height controls

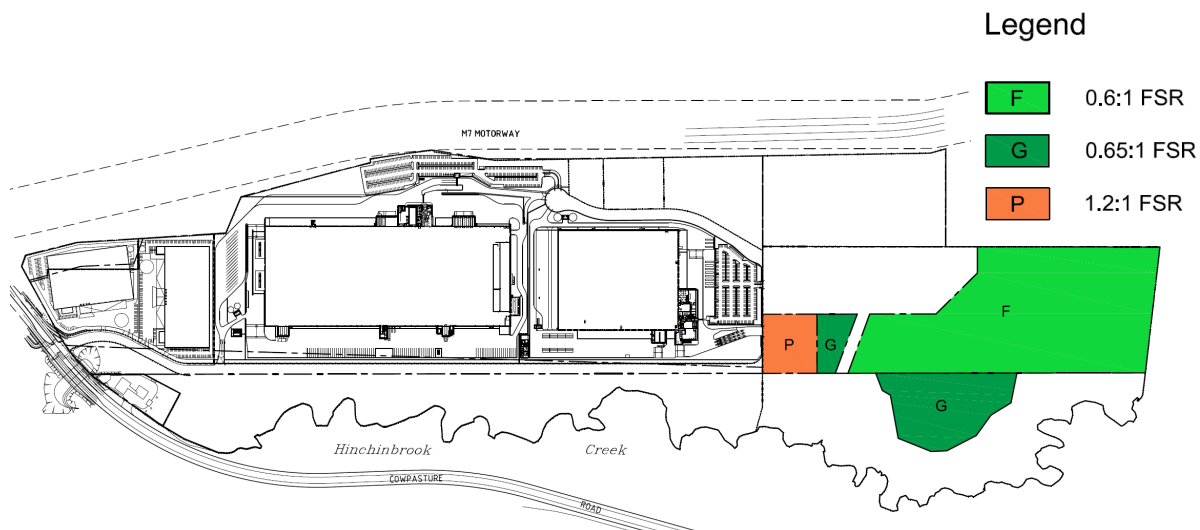


Figure 9 – Existing FSR controls

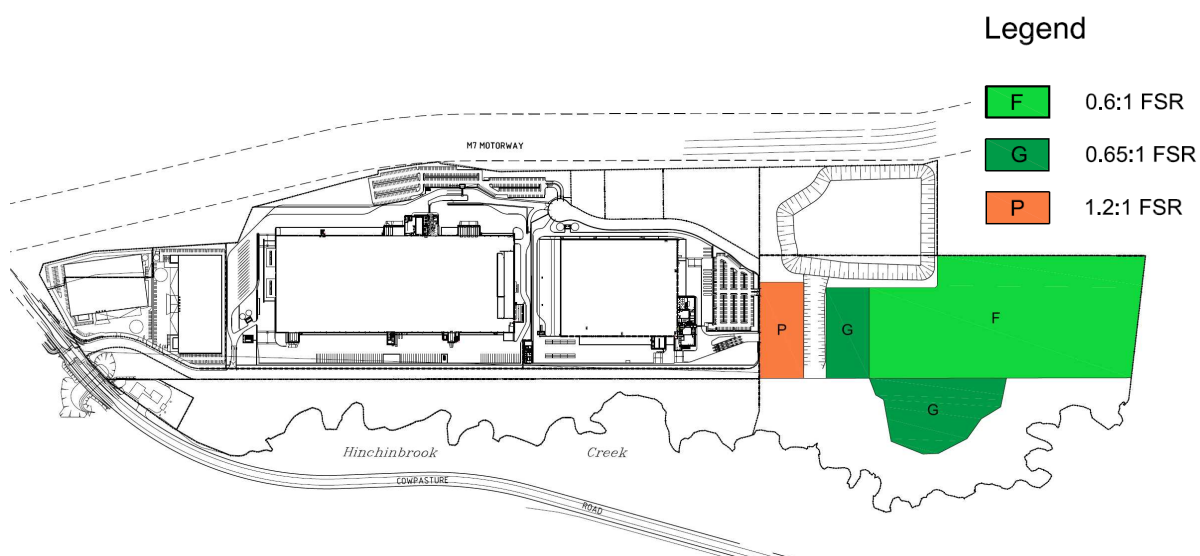


Figure 10 – Proposed FSR controls

#### 2.1.4 Modifications to conditions of consent – MP10\_0007

The proposed modifications do not necessitate any changes to the Concept Plan conditions of consent.



## 2.2 Stage 1 Project Application Modification

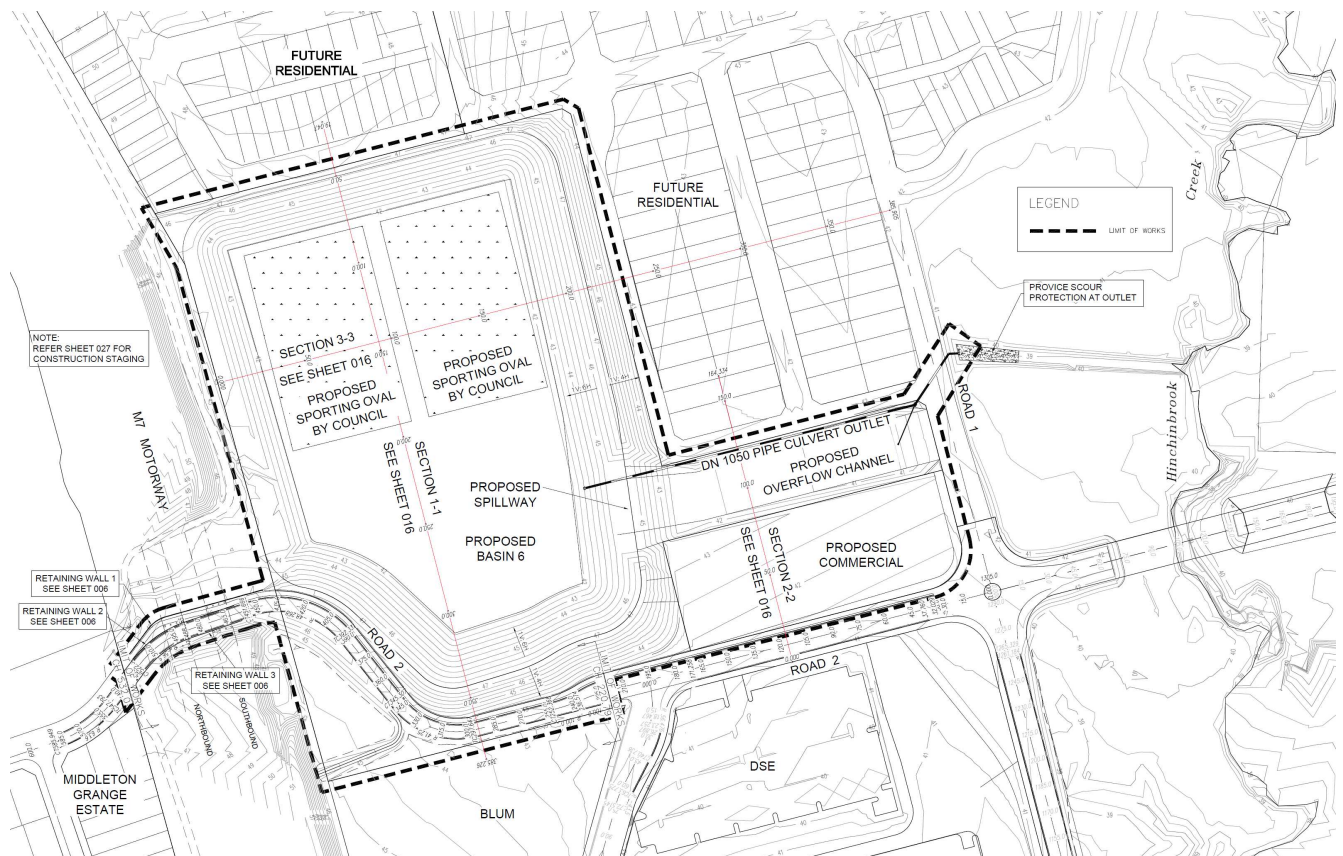
### 2.2.1 Construction of the northern detention basin

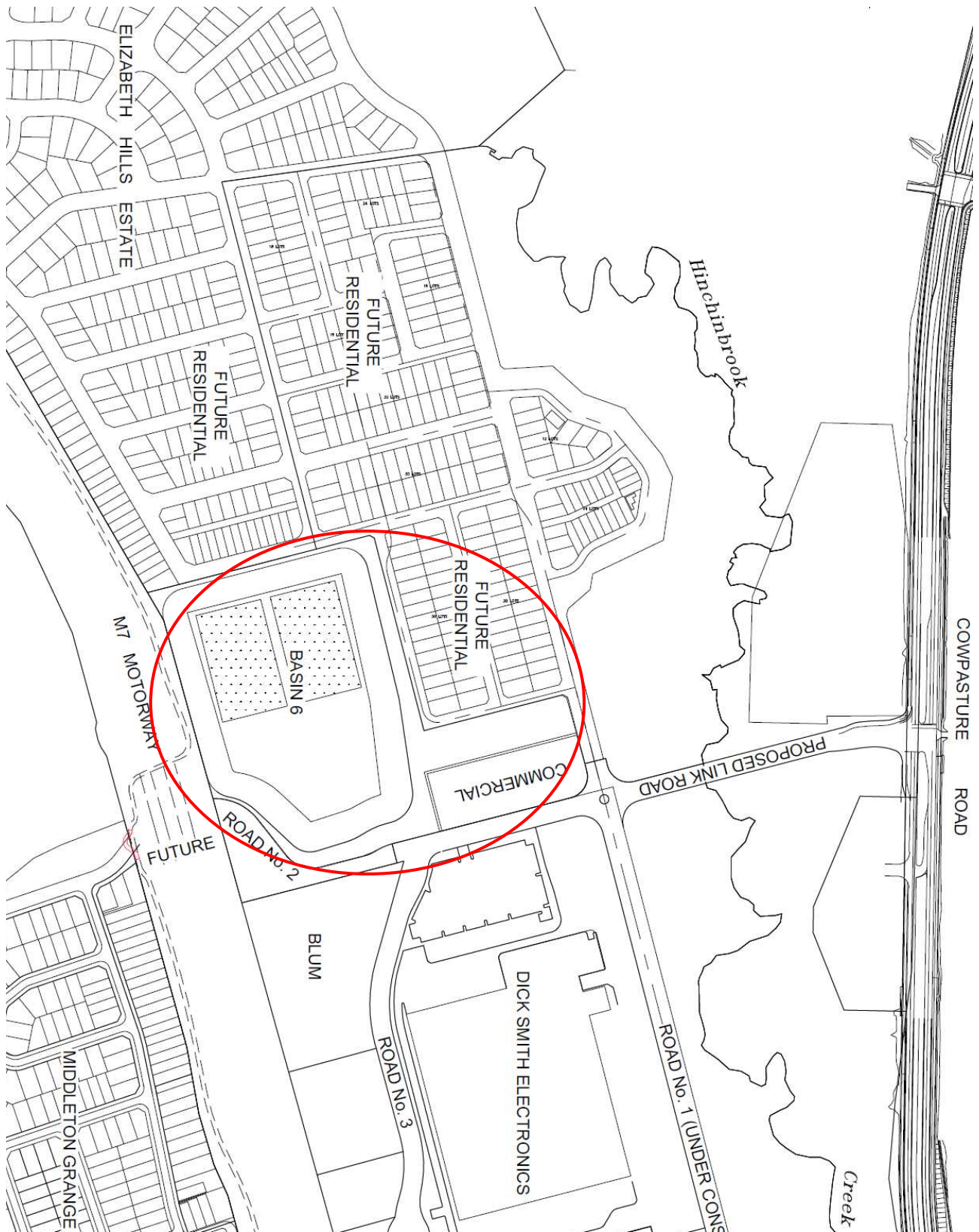
The design of the proposed northern detention basin<sup>6</sup> (see **Figure 11**) is provided in the set of drawings prepared by ADW Johnson at **Appendix D**. The basin will be located to the east of the M7 just north of Road No. 2 and the Blum warehouse building as shown in **Figure 12**.

The proposed basin design will provide general flood protection in the 100 year storm event and will protect downstream erosion by storing water for a limited period of time and then slowly releasing it into Hinchinbrook Creek via the overland flow channel. The lag time from input to output will minimise the effects of excess runoff generated by the newly-constructed impervious surfaces of the approved warehouse development.

The basin will have a capacity of 136,827m<sup>3</sup> and will occupy an area of approximately 67,500m<sup>2</sup>. The basin will accommodate flows from the 1 in 100 year event. A 50m control wier and overland flow channel are proposed which will run from the basin to Hinchinbrook Creek. The overland flow path is 150m long and 43m wide.

The design of the stormwater infrastructure also takes into account the construction of the new link road under the M7. In light of this a stormwater channel will be constructed under the M7 along side of the link road. In order to maintain the flood free status of the road in a 1 in 100 year event, the channel will be lined with a traffic / flood barrier (approx 75m long at 1.7m max or 0.83m average in height).





**Figure 12** – Proposed basin location

Source: ADW Johnson

## 2.2.2 Site Subdivision

It is proposed to subdivide lots 4050 (approved as part of the Stage 1 Infrastructure Project Application) and Lot 10 1139171 (owned by Liverpool City Council) into the following lots:

- 7000 – 22.67 hectares to be used for residential development
- 7001 – 7.285 hectares to be used for drainage purposes
- 7002 – 9,422m<sup>2</sup> to be used for business purposes

The layout of the proposed subdivision is provided in **Figure 13**.



**Figure 13** – Proposed subdivision layout

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 following modifications are proposed to the conditions of consent. Deletions are shown in ~~strike through~~ 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 ***as amended by 150136-S75W-022-A***
  - (d) preferred project report;
  - (e) statement of commitments;
  - (f) conditions of this approval;
  - (g) Civil Infrastructure Report – Hinchinbrook Creek, Link Road & Signalised Intersection; ~~and~~
  - (h) Section 75W modification EA (dated September 2010);
  - (i) ***Drawings 150136\_s75W\_001 through to 150136\_s75W\_026 (inclusive); and***
  - (j) ***Section 75W modification EA (dated November 2010).***
6. With the exception of Road Two ***and the northern detention basin***, no works are permitted to be undertaken in the lot identified as Lot 4050 in the subdivision plan (see Appendix 2).



## 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

#### 3.1.1 Liverpool Local Environmental Plan 2008

##### Revised Land Use Plan

The permissible use of the land to the north of the warehouse and distribution centres which are under construction is proposed to be amended as part of this application (See **Figure 14**). As discussed in **Section 2.1.2** of this report, when the land was zoned under the Liverpool LEP 2008, the exact size of the infrastructure required was not known, and an approximate Council obligation was reflected in the VPA, refer Clause 3.10.

Mirvac, HPAL & LCC had been working together to finalise a concept location and size for the proposed northern detention basin. As demonstrated in the report prepared by J. Wyndham Prince at **Appendix C** and the addendum report prepared by ADW Johnson at **Appendix D**, the detention basin as shown in **Figure 11** and on the plans at **Appendix D** will be sufficient to meet Council's requirements and will generate a better development outcome. Therefore the land set aside for infrastructure purposes is in excess of that actually required.

In light of the above the Proponent is seeking to reconfigure the land use permissibility so as to align the land use permissibility with the actual location and size of the detention basin and associated spillway.

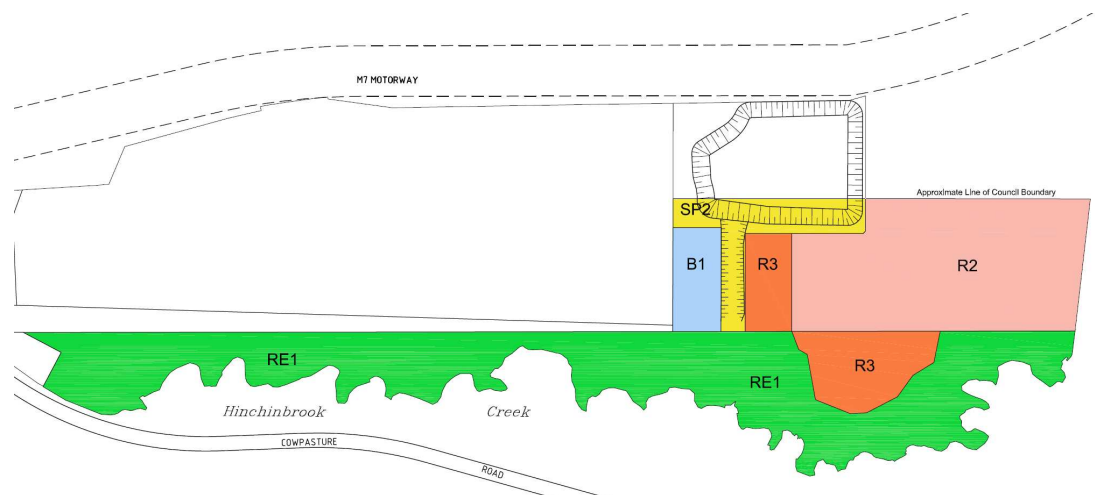
The design amendment also provides the opportunity to reconfigure the landuses in that area so as to improve the buffer between the warehouse / industrial development on the site and the future residential development to the north . Specifically it is proposed to adjust the zoning of the land areas adjoining the proposed new northern basin 6. These amendments include, adjusting the B1 area so as to provide a buffer between the industrial warehouse uses, swapping the location of R3 zone, and adjusting the R2 zone to reflect the revised basin area. This was always the intention of HPAL & LCC, as reflected in the VPA. It is noted that the development/construction of the new retail / commercial development will be subject to future applications.

The proposed amendment is considered appropriate as it:

- Will provide a higher level of residential amenity for future residential dwellings to the north of the industrial zone by way of providing a greater level of separation between the two uses; and
- It will make more orderly and efficient use of the land.
- Formalises Councils obligations under clause 3.10 of the VPA.

The proposed amendments will maintain neighbourhood, infrastructure and residential zones and will continue to achieve the objectives of Part 2.9 "Former Hoxton Park Airport Site" within the Liverpool DCP 2008 in the following ways:

- The development continues to provide a high level of accessibility with the proposed north/south and east/west link roads, cycle paths and pedestrian footpaths;
- The future development of the B1, R2 & R3 zones will still be able to accommodate development which caters for social and community needs;
- A range of housing types, form and tenure can be provided within the proposed R2 and R3 zones;
- Recreation facilities including parks and reserves are to be provided on the site, by others;
- The revised zones will allow for the better implementation of a 'people place' by removing the potential clash of residential and industrial uses;
- The revised layout allows for better and more certain drainage management and maintenance;
- The amendments do not prevent the implementation and compliance with the quality built form guidelines, in fact better design outcomes are likely as the need for specific design mitigation measures in terms of acoustic and outlook are less likely to be required;
- The revised layout continues to provide for the required infrastructure on the site as required by the VPA.



**Figure 14** – Proposed land use

Source: Mirvac Projects Pty Limited

## 3.2 Flooding

ADW Johnson (See **Appendix D**) has undertaken an assessment of the proposed basin design to determine the impacts on the peak outflow, peak storage and peak volume used in the basin and to confirm that sufficient freeboard is still available to the developable portions of the site. The assessment was undertaken using the RAFTS model and compared the basin performance of the concept design (in principally agreed to by LCC) and the performance of the proposed design.

The result of modelling are provided in **Table 2**. The results show that the reconfiguration of the basin design does not significantly impact on the flooding behaviour of the waterway beneath the M7 in all events up to the critical 1:100 year ARI storm. The modelling does show that there is an increase in the top water level in the basin, however this has been ameliorate in the design process with a commensurate increase in the top of the embankment levels for the basin.

**Table 2** – Performance Comparison of Basin Designs

Parametre	Storm Event	Concept Design	Proposed Design	Difference	% Difference
Peak Outflow (m <sup>3</sup> /s)	1:20 year ARI	3.32	3.32	0	0%
Peak Basin Storage (RLm)	1:20 year ARI	44.42	44.42	0	0%
Peak Basin Volume (m <sup>3</sup> )	1:20 year ARI	93,396	93,955	+559	0.59%
Peak Outflow (m <sup>3</sup> /s)	1:100 year ARI	3.99	4	.01	0.25%
Peak Basin Storage (RLm)	1:100 year ARI	45.34	45.35	.01	0.02%
Peak Basin Volume (m <sup>3</sup> )	1:100 year ARI	136,330	136,827	+497	0.36%

Source: ADW Johnson

### 3.3 Flora and Fauna Assessment

GHD has prepared an Ecological Impact Assessment in relation to the proposed construction of the northern detention basin (**Appendix F**). The key issues in the report are outlined below.

#### Flora

Vegetation within the area of the proposed basin has been modified by historic clearing and ongoing activities. Vegetation communities (shown in **Figure 15**) include intact patches of native forest and partially disturbed and regrowth woodland, derived grassland and artificial wetlands.

Areas of intact Shale Plains Woodland in the proposed basin location are consistent with the definition of the Critically Endangered Ecological Community (CEEC) 'Cumberland Plain Woodland' (CPW) which is listed under the NSW Threatened Species Conservation Act (TSC Act). The Derived Tussock Grassland comprises low condition CEEC within the TSC Act definition.

The proposed spillway contains areas of highly degraded Exotic Grassland vegetation dominated by introduced plant species.

Drains, sediment ponds and depressions through the site support a variety of freshwater wetland vegetation species. GHD consider that the Freshwater Wetlands are a derived community formed from the clearing of Shale Plains Woodland and modification of site hydrology. Therefore this community does not qualify as the TSC Act EEC 'Freshwater Wetlands on Coastal Floodplains'.

#### Fauna

During their field investigations GHD recorded a moderate diversity of native fauna species in the Concept Plan area, including 3 mammals, 56 birds, 5 reptiles and 4 frogs.

Within the proposed basin area the following species, which are listed as being Vulnerable under the TSC Act were identified by way of Anabat recording:

- Greater Broad-nose Bat
- Large-footed Myotis

There are five habitat trees within the footprint of the basin, including large, hollow-bearing Spotted Gum and stages. One hollow-bearing Spotted Gum featured conspicuous scratches suggesting that it was occupied. Despite stag-

watching the species of resident fauna was not identified. Woodland patches within the northern basin footprint would have little value for threatened arboreal mammals and forest owls as they are small and surrounded by disturbed, cleared land. Habitat trees within the northern basin are more likely to be occupied by more aggressive and/or generalist native fauna such as Common Brushtail possums, Sulfurcrested Cockatoos or Galahs.

The location of the flora and fauna identified on the site is provided in **Figure 15**.

### Impact Assessment

The vegetation to be removed includes approximately 3.09 ha of intact native woodland and forest that is consistent with a threatened ecological community listed under the EPBC Act and/or the TSC Act. The development footprint also contains a further 2.10 ha of Derived Tussock Grassland that is consistent with a form of CEEC in low condition in accordance with the TSC Act definition. The proposal will remove valuable fauna habitat in 0.20 ha of Freshwater Wetlands associated with existing open drains.

The loss of the above vegetation in the context of the vegetation mapped by the National Parks and Wildlife Service (NPWS) is provided in **Table 3**. As can be seen the Proposal will remove wetland habitats equivalent to 2.60% of the mapped extent in the locality. GHD consider that the wetlands within the site disturbance footprint would have little value in comparison to the 7.8ha of large, natural wetlands mapped in the locality by NPWS as well as the aquatic habitats in Hinchinbrook Creek. GHD also considers that the value of the CEEC is limited due to the isolation of the patch and its relatively minor contribution to the viability of the local population. The patch of CEEC represents 0.02% of the population and as such its removal is not likely to have a significant negative effect on the local occurrence of CPW.

**Table 3** – Area of vegetation proposed to be removed

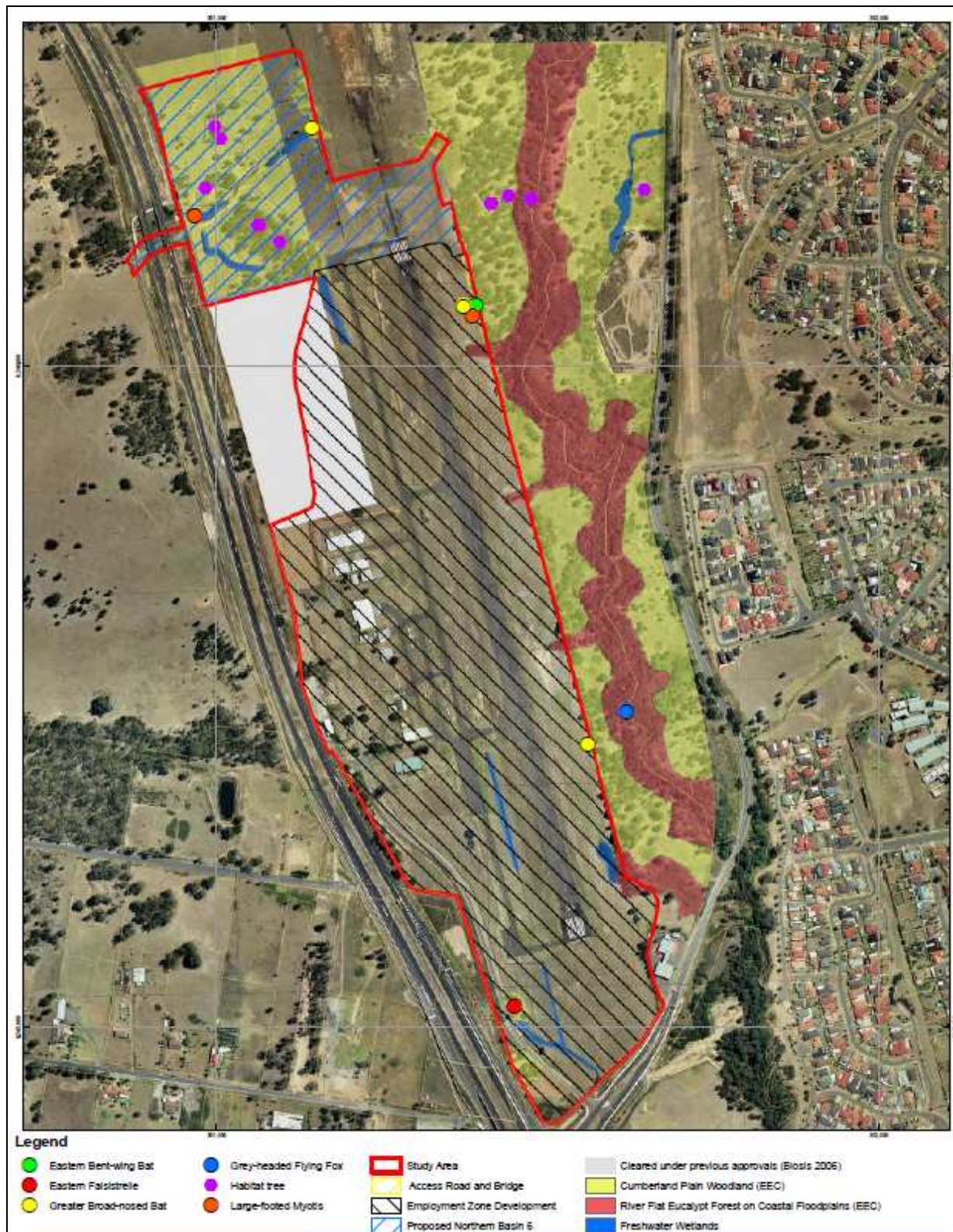
Vegetation Type	TSC Act Status	EPBC Act Status	Area of Vegetation Removal (ha)	Extent in the Locality (NPWS 2002)	Percentage of Extent in the Locality (NPWS 2002)
Shale Plains Woodland	CEEC	CEEC	3.09	1059.7	0.02
Derived Tussock Grassland	CEEC (low condition)		2.1	-	-
Freshwater Wetlands			0.20	7.8	2.6
<b>Total</b>			<b>5.39</b>		

Source: GHD

Construction of the northern basin will contribute to a barrier to movement of fauna in the locality by creating additional obstacles between the Hinchinbrook Creek riparian corridor and woodland to the west of the M7. The vegetation to be directly removed for the northern basin would have limited value as a fauna movement corridor as the habitat to be removed is a 'dead end' for many fauna species as fauna movement to the west is already limited by the M7 and to the south by industrial development.

Aerial habitat would not be affected and so migratory species are likely to traverse obstacles and gaps in habitat created by permanent project infrastructure. The project does not involve any structures that would pose a significant obstruction or hazard to birds or bats in the context.





**Figure 15** – Location of threatened Biota and Habitat Resources

Source: GHD Pty Limited

With regard to impacts on fauna, GHD note that the proposed development will have an impact on some species through the removal of potential roosting and foraging habitat within the development footprint. However GHD consider that this removal of habitat is not likely to have a significant negative effect on any mobile or threatened fauna based on the following considerations:

- The proposed construction may displace or disturb some individuals if they are within or near the disturbance area. This disturbance would be short-term and is likely to affect a small proportion of any fauna populations. Based on available NPWS (2002) mapping the Proposal would remove less 0.01 % of the overall extent of native woodland and forest vegetation communities in the locality. The disturbance footprint is highly unlikely to contain an ecologically significant proportion of any fauna populations or of any critical foraging, breeding or roosting resources that are important for maintaining the life cycles of local populations
- The basin footprint would reduce the extent of habitat at the site by a total of 5.39 ha (the area of Shale Plains Woodland and adjoining Derived Tussock Grassland and Freshwater Wetlands within the footprint) involving the complete removal of a patch of native vegetation.
- The value of the vegetation and habitat to be removed is limited by its isolation. In this context the direct removal of a 5.39 ha patch of habitat is not likely to comprise a significant reduction in the extent of available habitat for any populations of mobile threatened fauna
- The Proposal would not significantly fragment or isolate any areas of habitat, given the limited scale of the disturbance footprint and existing fragmentation of habitat at the site
- There is no recommended or declared critical habitat of relevance to this assessment (DECCW, 2009e, DPI, 2009b)
- The broader Proposal, incorporating design and the offsets strategy, is consistent with specific recovery objectives presented in the DECCW (2009) *Draft Recovery Plan for the Cumberland Plain*

With regard to migratory species, GHD note that the established basin would create a partially-vegetated habitat corridor through the centre of the site. In the longer term this habitat would be modified through revegetation with wetland plants and a narrow fringing strip of indigenous woodland species. Once established the basin would function as viable habitat for many migratory species, especially wetland birds.

Whilst no Cumberland Land Snails were identified on the site, they have the potential to exist. In order to partially mitigate potential impacts on any populations existing on the site, GHD recommend that a pre-clearing survey be undertaken, including salvage of any snails or woody debris in the construction footprint and their placement in adjacent areas of retained vegetation. A commitment to this effect has been made at Section 4 of this report.

Aquatic habitats within the northern basin development footprint are all artificial drainage features and have little conservation value. They are unlikely to support any threatened biota or be important to the maintenance of any local populations of aquatic biota.

## Mitigation Measures

In order to minimise the above potential impacts, GHD has recommended that the following mitigation measures be implemented:

- Preparation of a CEMP and application of appropriate measures to mitigate impacts on resident fauna within construction footprints, surface water, soil and air quality (see **Section 3.6**)
- Design of the proposed basin as an 'artificial wetland', including habitat resources such as aquatic and semi-aquatic plants, areas of rocky substrate and a buffer of planted native vegetation (refer to **Section 3.4**)
- A proposed biodiversity offset strategy to offset residual impacts on native biota, aligned with the offset strategy for other development lands at the former Hoxton Park Airport site to create an integrated conservation area associated with the Hinchinbrook Creek riparian corridor.

## 3.4 Vegetation Management Plan

In addition to the Ecological Impact Assessment, GHD has also prepared a Vegetation Management Plan (VMP) (**Appendix G**) for the project which outlines a restoration programme for the area impacted by the project. The area the subject of the VMP is shown in **Figure 16**.

As can be seen the basin will generally comprise two different areas that will be used for different purposes. The northern part of the basin is proposed to be used for recreational purposes and will contain two playing fields (to be constructed by Council). The southern part of the basin is proposed to be revegetated with a mix of plant species that are representative of the existing native vegetation communities identified on the site, including Shale Plains Woodlands and Freshwater Wetlands, wherever possible.

The vegetation works will be subject to a 3 year maintenance program which will include repairing damaged tree guards, monitoring survival rates, installing replacement plants as required, weeding inside the tree guards, collecting and broadcasting seed and continued follow-up spot spraying.

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





**Figure 16 – Vegetation Management Plan**

Source: GHD

### 3.5 Aboriginal Heritage Assessment

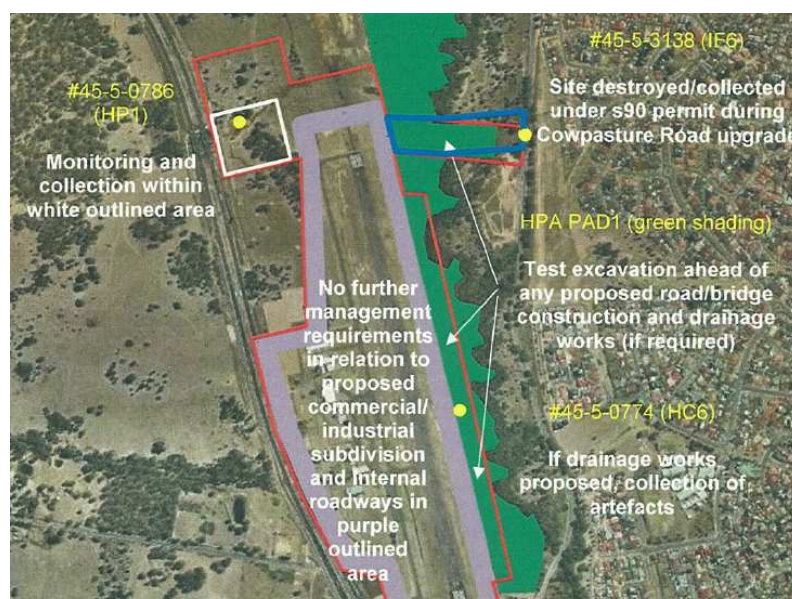
Mary Dallas Consulting Archaeologists (MDCA) has prepared an addendum statement (**Appendix H**) to their original Aboriginal Archaeological Assessment Report which was approved as part of the Concept Plan.

The original assessment report considered the construction of the northern detention basin and identified one previously recorded site within the basin footprint - #45-5-0786. The recommendation in relation to this site was to collect the artefact prior to excavation works given its low to negligible scientific potential. Collection was a strategy endorsed by the registered Aboriginal stakeholder groups. MDCA also recommended that the Mirvac Group afford the Registered Aboriginal Stakeholder Groups the opportunity to monitor earth works within the footprint of the basin (as shown in **Figure 17**) and make collection of any cultural items as may be unearthed. These actions should be undertaken in conjunction with initial earthworks and the Aboriginal Stakeholder groups should be given adequate notice of when these are likely to commence.

Since the original assessment, the design of basin has progressed and the actual footprint has been amended. MDCA consider that the changes represent a minor alteration to the configuration of the basin. Notwithstanding this additional Aboriginal community consultation was undertaken regarding the revised design.

Each of the registered Aboriginal stakeholder groups were consulted on the new configuration of the basin and were offered the opportunity to revisit the site and inspect the new route. All groups felt that further field survey was not warranted as the earlier recommendations of the Archaeological Management Plan still applied. All groups asked that they be kept informed and included in the monitoring program associated with the basin excavations.

As the original application did not include the northern detention basin and therefore did not include a commitment regarding collection and monitoring of earthworks the Statement of Commitments at Section 4 of this report has been updated so as to include these recommendations.



**Figure 17** – Aboriginal Management Plan

Source: Mary Dallas Consulting Archaeologists

### 3.6 Construction Management

A Construction and Environmental Management Plan (CEMP) has been prepared by ADW Johnson (see **Appendix I**). 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 footprint of the northern detention basin have been added to the plan. The additional provisions amongst others, generally 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.

As part of CEMP a Soil and Water Management plan is included at **Appendix D** and will be implemented throughout the duration of the construction works.

### 3.7 Consultation

During the preparation of the proposed basin design Mirvac consulted with the following authorities:

#### Liverpool City Council

Regular interaction has occurred with LCC in relation to the Northern Basin 6 and Liverpool City Council (LCC) has issued land owners consent and is generally supportive of the proposed basin design.

#### NSW Office for Water

Written correspondence dated 18 October 2010 outlining the proposed design was forwarded to the NSW Office for Water. No response has been received to date.

#### DECCW

Mirvac Projects contacted Ms Lou Ewins at DECCW on 18 October 2010. The officers advice was that they would prefer to review and comment on the proposed following its formal lodgement with the Department of Planning.

#### RTA / M7

In addition to regular interaction with the RTA/M7, two consultation meetings (15 October and 25 October 2010) have occurred with the RTA / M7 and LCC. At these meetings Mirvac and ADW Johnson presented the revised design and services under the M7. The proposed design has been amended to take into account all of the issues raised during those meetings.

#### Dam Safety Committee

ADW Johnson put forward the revised basin design to the DSC on 12 October. The DSC considered the revised design at a meeting on 19 October. Mirvac are waiting to receive feedback from the committee following it's meeting.

Copies of written correspondence are included at **Appendix J**.

## 3.8 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 4** – 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 5** – 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	<ul style="list-style-type: none"> <li>▪ Increase in noise levels during construction activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Installation of Noise Attenuation Measures where required</li> <li>▪ Conduction of noise assessments prior to undertaking construction measures</li> <li>▪ Compliance with assessment criteria</li> </ul>	1	1	2 (low)
Traffic	C	<ul style="list-style-type: none"> <li>▪ Construction traffic on local roads</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implementation of a Construction Traffic Management Plan</li> </ul>	1	1	2 (low)
Heritage	C	<ul style="list-style-type: none"> <li>▪ Potential for Archaeological Deposits</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implementation of an archaeology management strategy</li> </ul>	1	2	3 (low)
Biodiversity	C	<ul style="list-style-type: none"> <li>▪ Loss of CPW on site</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implementation of an agreed off-set strategy</li> <li>▪ Implementation of an Environmental Construction Management Plan</li> </ul>	3	3	6 (medium)
Water Quality	C	<ul style="list-style-type: none"> <li>▪ Deterioration in water quality in Hinchinbrook Creek</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implementation of a soil and water management plan during construction works</li> </ul>	1	1	2 (low)
Flooding	O	<ul style="list-style-type: none"> <li>▪ Potential flooding of site during 1 in 100 year storm events</li> </ul>	<ul style="list-style-type: none"> <li>▪ Revised basin design to accommodate the 1:100 year ARI flood event</li> </ul>	2	1	3 (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***. Note: The revised statement of commitments shown below reflect that adopted in the most recent S75W amendments for the proposed bridge / link road.

**Table 6 – 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 <i>Conveyancing Act 1919</i> , 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: <ul style="list-style-type: none"> <li>■ Interpretation signage which is easily distinguishable from directional signage;</li> <li>■ Name the new roads aviation specific names (subject to approval of relevant authority);</li> <li>■ Use of signage and other media which symbolise the WWII use of the site;</li> <li>■ Alignment and landscaping of new north/south access road.</li> </ul>	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	9.	The Construction and Environmental Management	Following

Subject	No.	Commitments	Timing
Management		Plan will be updated to reflect the requirements of any approval or change in scope of the project.	approval and prior to issue of a CC.
	10.	All construction undertaken on the site will comply with the CEMP.	During construction.
Aboriginal Heritage	11.	<ul style="list-style-type: none"> <li>▪ 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;</li> <li>▪ Aboriginal Archaeological records shall be updated if the above artefacts are removed.</li> </ul>	Prior to and during construction works.
	12.	<p>Recommendations made in relation to the construction of the northern detention basin <b>and bridge over Hinchinbrook Creek</b> will be addressed in future applications for those specific works.</p> <p>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.</p>	<p>During the preparation of a Project Application for the relevant scope of works.</p> <p>Prior to or concurrent with works commencing in the part of the site that is east of the former airstrip boundary fence.</p>
	13.	<b>Registered Aboriginal community representatives will be given the opportunity to collect #45-5-0786 prior to earthworks commencing. Registered Aboriginal Stakeholder Groups will then be given the opportunity to monitor earth works within the footprint of the basin (as shown in the Aboriginal Management Plan) and make collection of any cultural items as may be unearthed</b>	<b>In conjunction with earthworks associated with the detention basin</b>
Salinity	14.	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	15.	The proposed earthworks will be undertaken in accordance with the geotechnical recommendations of Douglas Partners.	Prior to and during bulk earthworks.
Noise	16.	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.
	17.	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.
	18.	<p>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.</p> <p>During non-standard hours, works which involved equipment activities above L<sub>Aeq</sub> 110dB(A) will be minimised or acoustically treated.</p>	Through the duration of construction works.
Ecology	19.	<del>The recommendations made by GHD in relation to the construction of the northern detention basin and</del>	<del>During the preparation of a</del>

Subject	No.	Commitments	Timing
		<p>bridge across Hinchinbrook Creek will be addressed as part of the detailed PAs for these works.</p> <p><b><i>A pre-clearance survey will be undertaken in the construction footprint of the proposed northern detention basin and associated spillway.</i></b></p>	<p>Project Application for the relevant scope of works.</p> <p><b><i>Prior to works commencing in that part of the site.</i></b></p>
	20.	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 and the northern basin 6.
	21.	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.
	22.	The Vegetation Management Plan relating to the construction of the bridge across the Hinchinbrook Creek Corridor will be implemented.	Post completion of construction works within the Hinchinbrook Creek Corridor.
	23.	<b><i>The Vegetation Management Plan relating to the construction of the northern detention basin will be implemented.</i></b>	<b><i>Post completion of construction works associated with the northern detention basin.</i></b>
Energy Efficiency	24.	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 gas emissions	Within 3 months of final occupation of each warehouse building.
Waste Management	25.	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	26.	<p>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:</p> <ul style="list-style-type: none"> <li>■ Landscaping;</li> <li>■ Signage / site identification elements;</li> <li>■ Heritage interpretation elements; and</li> <li>■ Lighting.</li> </ul>	Within <del>3</del> <b>four (4)</b> months of the date of approval of the Concept Plan.
Flood Mitigation	27.	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

Subject	No.	Commitments	Timing
			Link Road.
	28.	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	29.	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 which includes the northern detention basin 6; and
- Rezoning of the land immediately north of the industrial zone to reduce the size of the SP2 Infrastructure Zone and as a result of the revised Northern basin 6, revise the B1 Neighbourhood Centre Zone and R2 & R3 Residential Zones.

The following amendments are sought to the Stage 1 Infrastructure Project Approval (MP10\_0008):

- Construction of the northern detention basin 6 ; and
- Revegetation of disturbed areas within the footprint of the basin.

This EAR has demonstrated that the proposed detention basin will provide a better development outcome than that of the initial concept which was developed by HPAL in co-ordination with LCC. In particular the proposed basin design will:

- accommodate active sports activities, to be embellished by others;
- accommodates services in a more efficient manner which limits the amount of earthworks required under the M7;
- accommodate existing infrastructure;
- negate any affect on adjoining properties e.g. stormwater and retaining walls; and
- integrate the M7 spill containment basin into the proposed overall stormwater network

The proposed rezoning amendments formalise Councils obligations under Clause 3.10 of the VPA and provide better outcome in terms of the amenity achieved in the R3 & R2 Zones due to the relocation of the B1 Neighbourhood Zone and the provision of a buffer between the industrial and residential zoned land. The reduction of the SP2 Infrastructure Zone also means that the land will be used more efficiently.

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.