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[REDACTED]

Name Withheld: Yes

[REDACTED]

Suburb/Town & Postcode: 2000

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Submission: Please see attached a submission to the Draft Western Sydney Aerotropolis Planning Package prepared by Urbis Pty Ltd on behalf of Boyuan Holdings Limited (BHL).

URL: <https://pp.planningportal.nsw.gov.au/draftplans/exhibition/western-sydney-aerotropolis-planning-package>

[REDACTED]



**ANGEL PLACE
LEVEL 8, 123 PITT STREET
SYDNEY NSW 2000**

URBIS.COM.AU
Urbis Pty Ltd
ABN 50 105 256 228

13 March 2020

Mr Andrew Jackson
Western Sydney Planning Partnership
PO Box 257
Parramatta NSW 2124

Dear Andrew,

SUBMISSION TO THE WESTERN SYDNEY AEROTROPOLIS PLANNING PACKAGE

OVERVIEW

This submission has been prepared by Urbis Pty Ltd (Urbis) on behalf of Boyuan Holdings Limited (BHL) in response to the public exhibition of the Western Sydney Aerotropolis Plan (WSAP) and its supporting documents. BHL has an interest in a 344ha landholding located at [REDACTED] and is within the Northern Gateway Precinct identified within WSAP.

BHL welcomes the opportunity to comment on the draft WSAP and congratulates the Western Sydney Planning Partnership (WSPP), Penrith City Council (PCC), Department of Planning, Industry and Environment (DPIE), Greater Sydney Commission (GSC) and all levels of government on establishing another significant milestone towards implementing a new, innovative and flexible planning framework which aims to accelerate the rezoning and development of the Western Sydney Aerotropolis.

The recently released WSAP expands on the vision for the Western Sydney Aerotropolis outlined within the *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1 – Initial Precincts* (LUIIP) and recognises the significant economic potential a new international airport will bring to Western Sydney.

We strongly support the WSPP in identifying the Northern Gateway as an initial precinct and thereby recognising the importance of appropriate planning of this major airport interface to deliver expansive industrial and urban services to cater for Greater Sydney's long-term freight, logistics and industrial needs.

BHL's vision for their site is directly aligned with the vision for the Northern Gateway is underpinned by the following key principles:

- Support the delivery of a productive and innovative 24 hour globally connected Aerotropolis,
- Provide an urban form that respects and connects with the landscape characteristics of the site bounded by two key riparian corridors (Cosgroves and Badgerys Creeks) to enhance environmental, social and amenity benefits to complement the Western Parkland City.

- A flexible and adaptable masterplan layout that can support a wide range of employment land uses which can be delivered in stages aligned with the desired future land uses and growth of the Northern Gateway Precinct.
- Develop a structure for a local road network which can connect into adjacent sites to support and enhance connectivity within the precinct whilst also supporting significant proposed new and upgraded road and rail infrastructure within the Aerotropolis.

BHL has reviewed the WSAP and accompanying documents and wholeheartedly supports their overall direction and intent and timeframes to establish a new planning framework. It is our view that the implementation of this new framework will be critical and as such our submission includes recommendations intended to assist the WSPP the finalisation of the WSAP.

The following documents have been reviewed as part of this submission:

- Draft Western Sydney Aerotropolis Plan (WSAP);
- Western Sydney Aerotropolis Proposed State Environmental Planning Policy Discussion Paper (proposed SEPP);
- Draft Aerotropolis SEPP Maps;
- Draft Western Sydney Aerotropolis Development Control Plan (Phase 1) (DCP); and
- Draft Ministerial Direction.

For ease of reference, this submission has been divided into the following key sections:

- **Section 1** - Brief description of the BHL landholding.
- **Section 2** - Details of BHL's previous submissions to strategic plans and other key documents.
- **Section 3** - Details of development background, technical studies and master planning undertaken by BHL.
- **Section 4** - Details of BHL's review and recommendations relating to the Western Sydney Aerotropolis Planning Package.
- **Section 5** – Conclusion.

The submission is supported by the following attachments.

- **Attachment 1** – BHL's submission to the M12 Environmental Impact Statement.
- **Attachment 2** – Riparian assessment report and covering letter from Eco Logical.

SUMMARY

BHL submits that the WSPP adopt the following:

1. Endorsement of the Northern Gateway as an initial precinct focusing on the provision of employment generating land uses.
2. Maintain the timeframes for re-zoning identified within the WSAP. BHL is committed to collaborating with WSPP and PCC to assist in the refinement of the framework to achieve these timeframes.
3. Prioritise the exhibition of infrastructure contributions mechanisms so that landowners can make informed decisions in relation to development feasibility and staging.
4. Any future SIC should be calculated on rate per net developable hectare rather than a unit-based charge (per lot or percentage of CIV) this is because a unit base charge could significantly impact development feasibility.
5. Any infrastructure staging plan should prioritise developments that have the capacity to contribute to the delivery of this infrastructure.
6. Continue to foster collaboration between all levels of government and the development industry to ensure that the cumulative effect of all proposed infrastructure levies on future development be considered prior to implementation.
7. The 'Environment and Recreation' zone boundaries must be deferred to precinct planning so that these zones can be accurately informed by detailed technical studies to confirm the 1:100 flood extent and status of all riparian corridors.
8. If the riparian Corridors are to be zoned when the proposed SEPP is gazetted then specific provisions must be included to ensure the 'Environment and Recreation' zone boundary and maps can be amended without the need for a site-specific planning proposal.
9. Collaborate with proponents to accurately identify all 1:100 flood extents and top of bank mapping to ensure a consistent approach across all development precincts within the Aerotropolis.
10. Actively engage with BHL in acknowledgement of its ongoing commitment to progressing its master plan aligned with the vision and desired land uses for the Northern Gateway such that initial stages of development can be aligned to the opening of the WSA in 2026.
11. Foster a collaborative approach to establishing a new and innovative statutory framework which includes a master plan pathway on sites greater than 100ha as envisaged within the proposed SEPP. BHL is committed to working with the WSPP and DPIE to establish the parameters around this new framework.
12. The proposed SEPP and Phase 1 DCP must clearly distinguish the differences between the optional master plan pathway and the site specific DCP pathway for developments that proceed ahead of precinct planning.
13. BHL strongly advocates the current Concept DA/State Significant DA (SSDA) pathway that is available under the EP&A Act and the SEPP State and Regional Development and submit that this pathway should still apply to development that is consistent with precinct objectives and ready to proceed in advance of precinct planning.

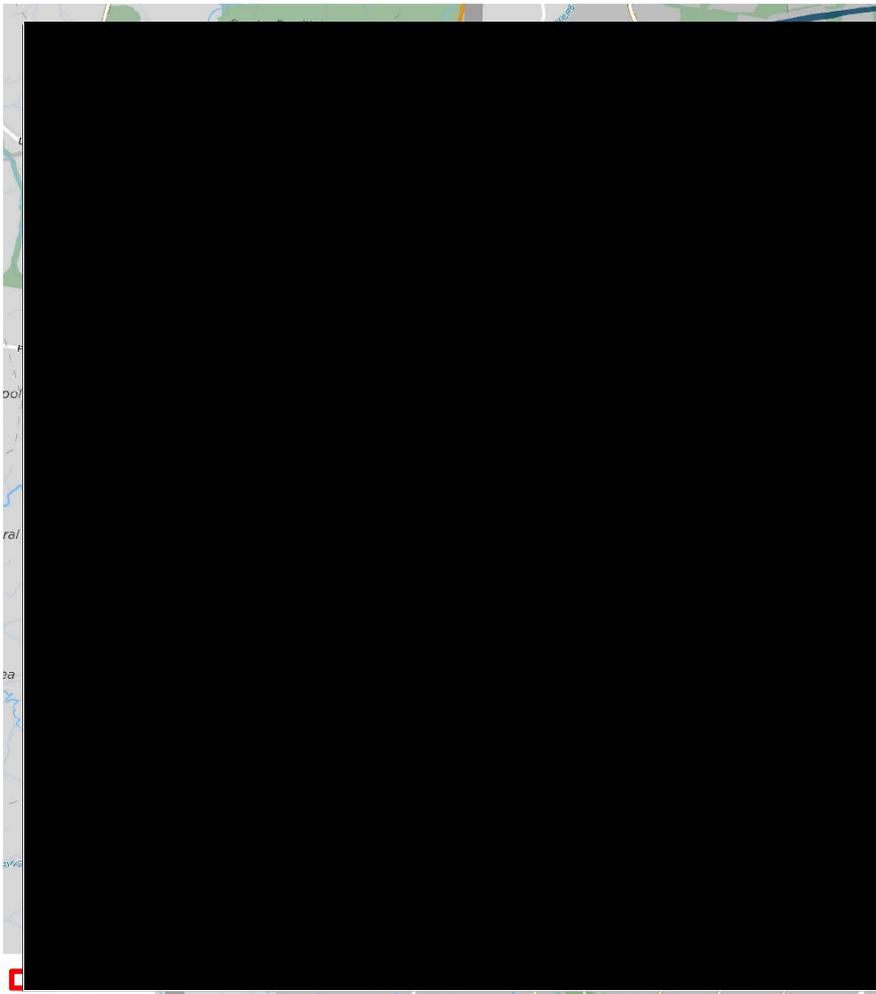
14. Provide provisions within the SEPP to recognise approved Concept DAs as endorsed master plans under the Aerotropolis SEPP.
15. Link the operation of the proposed master plan process to the operation of the SEPP State and Regional Development by including the Aerotropolis Precincts within Schedule 2 Identified Sites. This would provide a State Significant Development pathway for any development on sites greater than 100ha and would ensure that existing protocols for Secretary and agency concurrence can be maintained through the issuance of Secretary Environmental Assessment Requirements (SEARs) for each master plan.
16. In their role as precinct planners for the Aerotropolis, the WSPP must recognise the significant resultant benefits that re-aligning the M12 road corridor further north on the landholding would have for future land use planning of the Northern Gateway.
17. The WSPP must use its significant place making responsibilities to influence the M12 road alignment to ensure that land use planning outcomes are prioritised to ensure that any new infrastructure is well integrated and supports future connectivity and development within the Aerotropolis.
18. Prioritise the confirmation of the proposed corridor protection mechanisms to be included within the proposed SEPP including any future land acquisition requirements such that certainty can be provided as to the development status of approximately 107ha of land identified on the site for future transport corridors.
19. That indicative future road connections be shown on the Northern Gateway Structure Plan including future north south and east west connections across the M12 road corridor to fragmented landholdings in addition to a potential additional east west road connection to Luddenham Road north of the current M12 road alignment.

1. THE SITE



The site is one of largest landholdings within the Northern Gateway precinct. Despite its size the site is significantly encumbered by the proposed M12 Motorway alignment and the future Sydney Metro Western Sydney Airport and the M9 Outer Sydney Orbital transport corridors (approx.168ha).

Figure 1 The Site & WSAP Structure Plan



Source: Western Sydney Aerotropolis Plan 2019

2. PREVIOUS SUBMISSIONS

BHL have made numerous submissions to Government in relation to the range of strategic plans and exhibited transport corridors relating to the Aerotropolis. These submissions included:

- A Bold Vision for the Northern Gateway – BHL’s submission to the *Draft Greater Sydney Region Plan, Draft Western City District Plan and Draft Future Transport 2056*;
- Submission to RMS in response to the public exhibition of the preliminary road design and access for the future M12 Motorway in 2018;
- Submission to Transport for NSW and RMS in relation the exhibition of the corridor for the North South Rail Link and Outer Sydney Orbital in 2018;
- Submission to the *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1 – Initial Precincts* (LUIIP) in 2018; and
- Submission to the public exhibition of the M12 Environmental Impact Statement (EIS) in 2019 (refer **Attachment 1**).

In November 2019 BHL made a submission in response to the exhibition of the EIS for the M12 Motorway (SSI 9364), a copy of this submission is attached. The submission recommended that the alignment of the M12 Motorway be amended and refined to minimise its impact on the economic, land use, social and environmental outcomes of the BHL site. Realignment of the corridor would ensure the delivery of the Objectives and Planning Priorities outlined within the *Greater Sydney Region Plan* and the *Western City District Plan*.

The submission also emphasised the need for the proposed M12 to be fully integrated into the future road network of the Aerotropolis and as such recommended that connections be provided across the road corridor to fragmented land in addition to providing additional connections to the Motorway from surrounding employment lands to maximise freight movement within the Sydney region.

3. BHL’S PROPOSED MASTER PLAN

In planning for the development of its landholding BHL has undertaken extensive detailed background technical environmental studies to determine all known environmental constraints that would impact upon the developable area of the site. BHL has also continued to refine its proposed development intentions based on further analysis of these existing constraints and the expected planning framework and timeframes for re-zoning outlined in:

- *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1 – Initial Precincts*; and
- *Western Sydney Aerotropolis What We Heard Community Consultation Report*.

The release of the Western Sydney Aerotropolis Planning package in December 2019 provided further clarity on the desired land uses, proposed planning framework and development pathways for the initial precincts. These documents have enabled BHL to refine its master plan for the site.

It is BHL’s intention that its iterative master plan remains consistent with the desired land uses and evolving planning framework for the Northern Gateway. The master plan is intended to run parallel to and eventually inform the outcome of precinct planning for the site. To this end, BHL’s refined master plan envisages a predominantly industrial and warehouse precinct with a mix of airport related land uses along Elizabeth Drive.

4. SUBMISSION AND RECOMMENDATIONS

BHL welcomes the opportunity to comment on the Western Sydney Aerotropolis Exhibition Package and congratulates the WSPP, PCC and all levels of Government on achieving another significant milestone in its work for the Aerotropolis and its ongoing commitment to implementing the planning framework and rezoning of the initial precincts by the end of 2020.

BHL have reviewed the package and have identified the following matters which should be addressed in finalising the exhibited documents.

4.1. TIMING AND DELIVERY OF INITIAL PRECINCTS

The Aerotropolis comprises of 10 precincts, six of which are identified as initial precincts including the Northern Gateway. The planning and delivery of this precinct and BHL landholding is significant given its location adjacent to the northern entrance of the Western Sydney Airport (WSA).

BHL strongly supports the Planning Partnerships identification of the Northern Gateway as an initial precinct and major interface to the new WSA. BHL are committed to working with the WSPP and DPIE on the delivery Airport-compatible uses which contribute to the Western Parkland City vision.

The precinct will be an important contributor to the overall Western Parkland City vision with Elizabeth Drive and the new M12 Motorway which will serve as a significant gateway to and from the WSA.

BHL are strongly supportive of the timeframes for the initial precincts and are committed to collaborating with the WSPP to achieve:

- Rezoning of the initial precincts by mid-2020;
- Exhibiting the draft precinct plan for the Northern Gateway by mid-2020; and
- Finalisation precinct plans and State and local contributions by late 2020.

BHL Recommendation

- 1. The WSPP endorse the Northern Gateway as an initial precinct focusing on the provision of employment generating land uses.**
- 2. The WSPP maintain the timeframes for re-zoning identified within the WSAP. BHL is committed to collaborating with WSPP and PCC to assist in the refinement of the framework to achieve these timeframes.**

4.2. INFRASTRUCTURE CONTRIBUTIONS

The quantum and timing of infrastructure contributions is an important consideration in the viability of future development. The WSAP identifies the Western Sydney Place-based Infrastructure Compact (PIC) as the mechanism to determine the infrastructure required to support the Aerotropolis. However, BHL is concerned that details of the PIC have not been finalised given its role in informing both the special infrastructure contribution (SIC) and the precinct plans.

BHL acknowledges the recognition by the WSPP in recent briefings that the exhibition of the contributions mechanisms is a priority. As such we request that these details be exhibited as soon as possible so that landowners can make informed decisions in relation to future development feasibility and staging.

BHL questions the SIC being based on a land-based charge (e.g. per net developable hectare) and/or a unit-based charge (per lot or percentage of CIV) and recommends that that SIC be calculated on rate per net developable hectare rather than unit-based charge (per lot or percentage of CIV) noting that a unit base charge could significantly impact development feasibility.

Given that the PIC will guide the investment and staging decisions of utility providers to ensure services are available, information must be provided on the staging of infrastructure to ensure development can be adequately planned for and delivered. We also note that BHL are substantially progressed with their master plan and are likely to be one of only several major landowners / developers who will have the ability to fund infrastructure through works in kind agreements. As such any infrastructure staging plan should therefore look to prioritise BHL's site and the Northern Gateway precinct over other development sites and precincts with limited capacity to deliver infrastructure.

BHL recommends that the WSPP, PCC and DPIE collaborate closely with the development industry to ensure that the cumulative effect of all proposed infrastructure levies on future development be considered prior to implementation.

BHL Recommendation

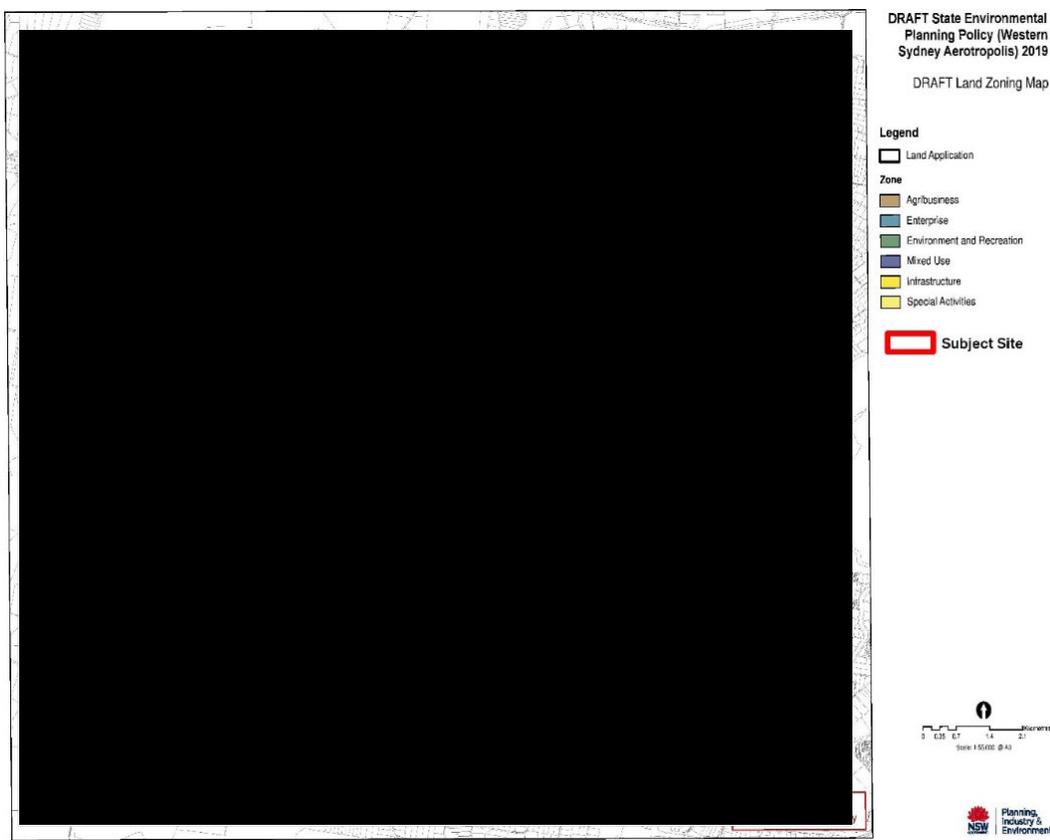
- 3. The WSPP must prioritise the exhibition of infrastructure contributions mechanisms so that landowners can make informed decisions in relation to development feasibility and staging.**
- 4. Any future SIC should be calculated on rate per net developable hectare rather than a unit-based charge (per lot or percentage of CIV) this is because a unit base charge could significantly impact development feasibility.**
- 5. Any infrastructure staging plan should prioritise developments that have the capacity to contribute to the delivery of this essential infrastructure.**
- 6. That the WSPP continue to foster collaboration between all levels of government and the development industry to ensure that the cumulative effect of all proposed infrastructure levies on future development be considered prior to implementation.**

4.3. FLOODPLAIN MANAGEMENT & RIPARIAN CORRIDORS

4.3.1. Proposed SEPP – Environment and Recreation Zone

The proposed SEPP will apply a new ‘Environment and Recreation Zone’ to all land affected by the 1:100 chance per year flood planning level (refer **Figure 2**). The zone will also include vegetation protected under the existing Biodiversity Certification program and the Strategic Assessment program and all Cumberland Plain Conservation Plan vegetation.

Figure 2 – Draft SEPP Zoning Map



Source: Western Sydney Airport Plan

It is understood that the intent of the ‘Environment and Recreation’ zone will be to enable riparian corridors to be retained and rehabilitated to support the establishment of the ‘Blue-Green Grid’. BHL strongly supports the ‘Blue-Green-Grid’ and enhancing appropriately identified riparian corridors on the site to provide increased amenity.

BHL supports the WSPP’s ongoing commitment to the completing the technical work required to appropriately inform precinct planning. To this end BHL can assist the WSPP to correctly identify riparian corridors such development of the site can be progressed consistent with the strategic objectives for the Northern Gateway as a key employment precinct.

BHL supports the proposed SEPP which states that status of these corridors will be further assessed in accordance with Water NSW's 'Guidelines for riparian corridors on waterfront land' and then make recommendations within precinct plans for their future rehabilitation, ownership and management. To this end BHL note that it is critical that the ownership and management details of these areas are clearly outlined before they are locked into a specific land use zone under the SEPP.

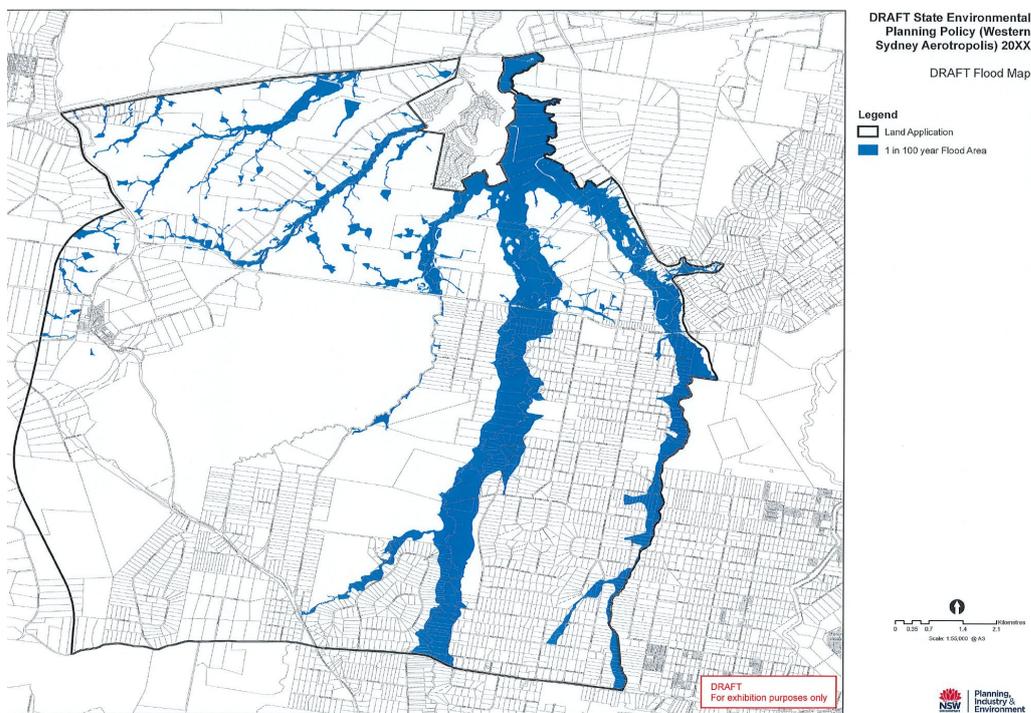
4.3.2. Flooding

BHL's Flood Consultants (BMT) have reviewed the WSAP documents and have advised that the 1:100 flood levels shown in the draft Flood Map at **Figure 3** appear to be based on a 'rainfall on grid' model for the Northern Gateway. This method models all surface water runoff and as such has modelled overland flows through depressions as river and creek flooding. As shown in **Figure 4**, Eco Logical have undertaken an assessment of riparian corridors on the subject site and illustrate watercourse meet the definition of a river.

BHL notes despite the presence of a number of 1st, 2nd and 3rd order streams on land south of Elizabeth Drive within the Aerotropolis Core precinct none of these have been identified as 'Environment and Recreation'. This is counterintuitive given that these zones have been located within Employment / Enterprise zones and not in mixed use zones where higher levels of amenity will be required.

Given the types of land uses envisaged for the Northern Gateway it is critical that this matter is appropriately addressed such that employment land is not unnecessarily fragmented and compromised by Environment Zones where they are not technically warranted.

Figure 3 – Draft Flood Map – Proposed SEPP



Source: Western Sydney Airport Plan

4.3.3. Riparian Corridors

As illustrated in **Figure 4** and **Attachment 2**, Eco Logical have undertaken detailed site investigations and assessment of the riparian areas located on the site. The assessment determined that none of the mapped first order creeks within the site have defined beds, banks or geometric processes that would result in it being considered a 'river' for the purposes of waterfront land under the *Water Management Act 2000*.

This assessment was recently provided to the National Resource Access Regulator (NRAR) to seek their agreement to the Eco Logical's approach and findings. A response was received from NRAR on 6 March 2020 confirming that the evaluation/assessment of the riparian corridor requirements undertaken within the report were 'sound and acceptable in accordance with NRAR guidelines.

Given this response BHL submits that the proposed 'Environment and Recreation' zone must not be based solely on mapped flood extents as it will significantly restrict development around first order streams which are able to be realigned under NRAR guidelines.

BHL submits that rather than using an all-encompassing 'Environmental Zone', similar outcomes can be achieved under the existing provisions of the *Water Management Act 2000* (WMA) which allows for:

- The remediation and reinstatement of riparian corridors along watercourses that meet the definition of a river; and
- The outer 50% of these riparian zones to include public infrastructure such as cycleways, communal BBQ shelters and viewing platforms as outlined within the NRAR's Guidelines for Controlled Activities on Waterfront Land.

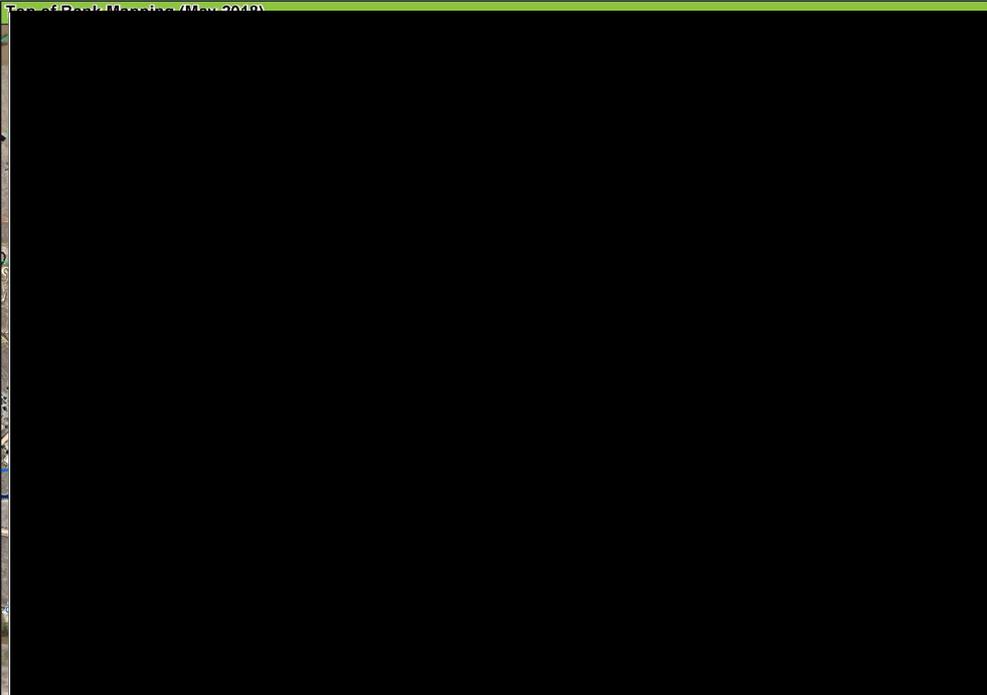
BHL are extremely concerned that the boundaries of the Environment zone will be gazetted despite the proposed SEPP stating that:

"Precinct planning will assess the status of riparian corridors in line with Water NSW's 'Guidelines for riparian corridors on waterfront land' and make recommendations for their future rehabilitation, ownership and management"

If it is intended to confirm the status of riparian corridors through detailed technical studies at the precinct planning stage, then the current mapped corridors must not be locked in as gazetted land use zones under the proposed Aerotropolis SEPP. Nevertheless, if these zone boundaries are to be defined when the maps are gazetted, then a specific enabling provision must be included that allows for the adjustment of these zone boundaries. If such a provision is not included, then there is a real risk that any dam removal or realignment of 1st order streams would necessitate rezoning. This would have the unintended effect of creating additional red tape and such would delay the delivery of critical employment lands adjacent to the airport.

To this end BHL is committed to working with the WSPP to correctly identify 1:100 flood extents and top of bank mapping to ensure that development can proceed in accordance with current National Resource Access Regulator (NRAR) guidelines for development on waterfront land.

Figure 4 – Top of Bank Mapping



Source: Ecological 2018

BHL Recommendation

7. The 'Environment and Recreation' zone boundaries must be deferred to precinct planning so that these zones can be accurately informed by detailed technical studies to confirm the 1:100 flood extent and status of all riparian corridors.
8. If the riparian corridors are to be zoned when the proposed SEPP is gazetted then specific provisions must be included to ensure the 'Environmental and Recreation' zone boundary and maps can be amended without the need for a site-specific planning proposal.
9. The WSPP must collaborate with proponents to accurately identify all 1:100 flood extents and top of bank mapping to ensure a consistent approach across all development precincts within the Aerotropolis.

4.4. VISION AND LAND USES FOR THE NORTHERN GATEWAY

The WSAP outlines the following vision for the Northern Gateway Precinct:

“The Northern Gateway will be a major airport interface, serving as a key strategic centre within the Western Economic Corridor – linking the Airport with the Western Parkland City Metropolitan Cluster through high frequency public transport, freight, road and rail connections. The Northern Gateway will harness existing and emerging economic opportunities catalysed by the Airport and build on the approved Sydney Science Park development to provide a variety of employment generating uses. Residential development will be located close to public transport and outside ANEC/ANEF 20 and above contours to ensure that airport operations are safeguarded, and residents have the opportunity to live in a 30-minute city. The Precinct will complement the Aerotropolis Core and will evolve as a centre focused on high technology incorporating health, education, knowledge and research.”

BHL strongly supports the vision for the Northern Gateway Precinct within the WSAP. The uses proposed within BHL’s master plan align with the focus on employment uses and job creation associated with the new WSA. As such there should be no strategic reason why the development of BHL’s landholding cannot occur when the land is re-zoned to ensure there are a range of supporting uses within this important gateway when WSA commences operations in 2026.

BHL Recommendation

10. That the WSPP acknowledge through ongoing and meaningful engagement, BHL’s commitment to progressing its master plan consistent with the vision and envisaged land uses for the Northern Gateway Precinct such that initial stages of development can be aligned to the opening of the WSA in 2026.

4.5. PLANNING FRAMEWORK

BHL supports the approach to developing new flexible planning pathways within the proposed Aerotropolis SEPP including broad level land use zones, precinct planning, master planning and site-specific development control plans. BHL also commends the Planning Partnership on its intentions to include provisions that will allow development to proceed ahead of the finalisation of precinct planning for the initial precincts.

BHL strongly supports the establishment of a new and innovated statutory framework for master plans on sites greater than 100ha as envisaged within the proposed SEPP and is committed to working with the WSPP and DPIE to establish the parameters around this framework. In relation to this framework BHL recommends the following matters be considered when finalising this development pathway.

- The WSAP collaborate closely with industry groups, developers and landowners to develop clear governance and statutory framework around the proposed master plan pathway,
- The WSAP engage with developers and landowners with sites greater than 100 ha such that they can progress master plans for their sites which align with envisaged land uses, staging and infrastructure delivery,

- Clarification of the relationship between the optional master plan pathway and the site specific DCP pathway within the Phase 1 DCP. In this regard we note that the EP&A Act currently allows for Concept Development Applications to replace DCPs where their preparation is required under an Environmental Planning Instrument (EPI).
- The WSPP considers how the proposed master plan framework could work in with the current legislation for Concept DAs and State Significant DAs which is used to great effect within the adjoining Western Sydney Employment Area (WSEA).
- In the absence of any framework developers such as BHL must allowed to utilise this clear existing development pathway to progress development in advance of precinct planning. On this basis sites greater than 100ha that are currently master planning their sites would have a clear statutory framework which is already in place to proceed with development concurrently with the precinct plan process.
- Provide provisions within the SEPP to recognise approved Concept DAs as endorsed master plans under the Aerotropolis SEPP.
- Consider linking the master plan process to the SEPP State and Regional Development and that the Aerotropolis Precincts be added to Schedule 2 of the State and Regional Development SEPP – Identified Sites. This would mean that any development greater than 100ha could be assessed as State Significant Development by the DPIE.
- Consider provisions that ‘turn off’ requirements for subsequent SSDAs for development consistent with the general arrangement and controls provided within an approved master plan.

The above recommendations would ensure that major development can occur in a sequenced and orderly manner and staged according to the delivery of infrastructure. The current SSDA framework for master plans ensures that existing protocols for Secretary and agency concurrence can be maintained through the issuance of Secretary Environmental Assessment Requirements (SEARs).

BHL Recommendation

- 11. The WSPP must collaborate with the development industry to establish a new and innovative statutory framework for master plans on sites greater than 100ha as envisaged within the proposed SEPP. BHL is committed to working with the WSPP and DPIE to establish the parameters around this framework.**
- 12. The proposed SEPP and Phase 1 DCP must clearly detail the relationship between the optional master plan pathway and the site specific DCP pathway noting that the EP&A Act currently allows for Concept Development Applications to replace DCPs where their preparation is required under an Environmental Planning Instrument.**
- 13. BHL strongly advocates the current Concept DA/State Significant DA (SSDA) pathway that is available under the EP&A Act and the SEPP State and Regional Development and submit that this pathway should still apply to development that is consistent with precinct objectives and ready to proceed in advance of precinct planning.**
- 14. That provisions be provided within the SEPP to recognise approved Concept DAs as endorsed master plans under the Aerotropolis SEPP.**

15. It is recommended that the proposed master plan process be linked to the operation of the SEPP State and Regional Development with the Aerotropolis added to Schedule 2 Identified Sites under this SEPP. This would allow for any development within the Aerotropolis greater than 100ha to be assessed as State Significant Development. This would ensure that existing protocols for Secretary and agency concurrence can be maintained through the issuance of Secretary Environmental Assessment Requirements (SEARs) for each master plan.

4.6. TRANSPORT CORRIDORS

4.6.1. M12 Alignment

Consistent with BHL’s previous submissions, we submit that the alignment of the proposed transport corridors including the exhibited M12 and proposed M9 Outer Sydney Orbital remains a significant concern. BHL request that the WSPP, in their role as precinct planners for the Aerotropolis, recognise the significant resultant benefits that re-aligning the road corridors further north on the landholding would have for future land use planning of the Aerotropolis.

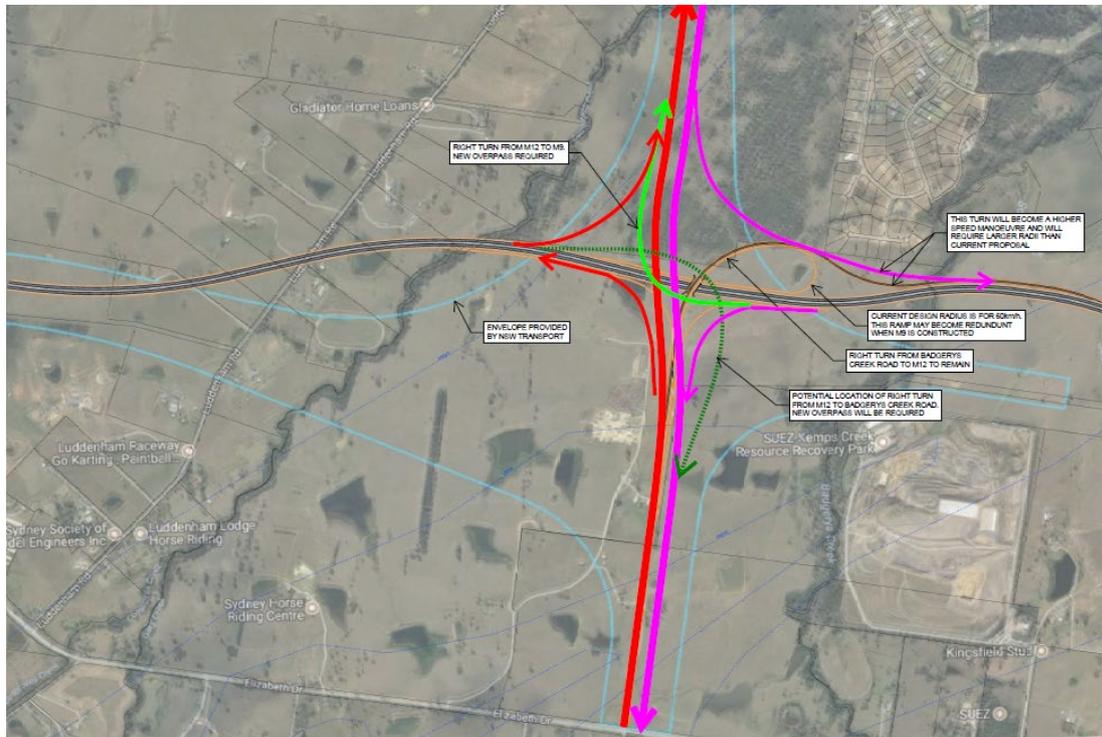
BHL has consistently advocated for a more northerly alignment of the M12 corridor. **Figures 5 and 6** illustrate an option prepared by Cardno in 2018 that proposes an alignment generally parallel with the northern boundary of the site. **Figure 7** illustrates an option prepared by ARUP which retains the points which the M12 enters and exits the site however shifts the road corridor in a more northerly arc that allows the interchange to be located in the north east portion of the site. Both these alternate options recognise a preferred route corridor which was exhibited in 2016 where the alignment of the airport access road logically follows the existing property boundary between the site and the adjacent landholding to the east (Sydney University Land).

Figure 5 – BHL Proposed Alternative M12 Corridor Alignment – 2018



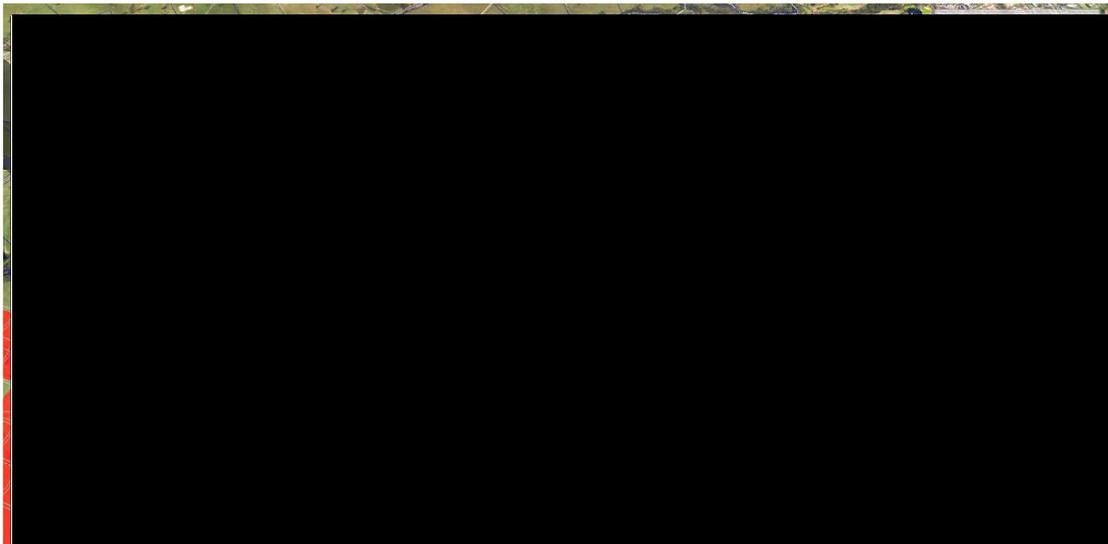
Source: Cardno

Figure 6 – Preliminary Working Drawing: M12 and M9 Intersection



Source: Cardno, 2018

Figure 7– Alternate Motorway Alignment Option - ARUP



Source: ARUP, 2019.

Realignment of the road corridors will have a positive land use planning benefit for these reasons:

- It will reduce the quantum of fragmented land on the site whilst significantly increasing the quality and connectivity of developable land south of the M12 road corridor.
- It will promote the orderly and economic use of the land and will ensure that future development can leverage the significant economic opportunities provided by the Western Sydney Airport to attract investment, businesses and job creation to the Western Parkland City. This is consistent with the Objectives and Planning Priorities outlined within the *Greater Sydney Region Plan* and the *Western City District Plan*.
- It will significantly improve the:
 - types of land use activities that can be supported;
 - quality of the connections between those places; and
 - amenity of the public open spaces both within and surrounding the proposed centres.
- It will better integrate land use an infrastructure planning which is a key objective of both the Stage1 LUIIP and WSAP.
- The consolidation of developable land within the central and southern parts of the site will provide:
 - An opportunity to activate the extensive frontage to Elizabeth Drive; and
 - Allow the development of the central areas of the site that are less impacted by airport operational constraints including aircraft noise and the OLS. It also offers greater leverage regarding the economic and employment potential based on the site's proximity to the Western Sydney Airport.
- Aligns public need and benefit with private capital investment and ensure that Government is able to recoup as quickly as possible a return on its substantial investments in infrastructure within Western Sydney and the Aerotropolis.

As the land use planner for the Aerotropolis the WSPP must play a larger role in the strategic delivery this critical piece of road infrastructure. BHL would support the WSPP taking a strong lead to ensure that land use planning outcomes within the Aerotropolis are prioritised such that these critical pieces of infrastructure can be well integrated in a manner that supports future connectivity and development.

BHL Recommendation

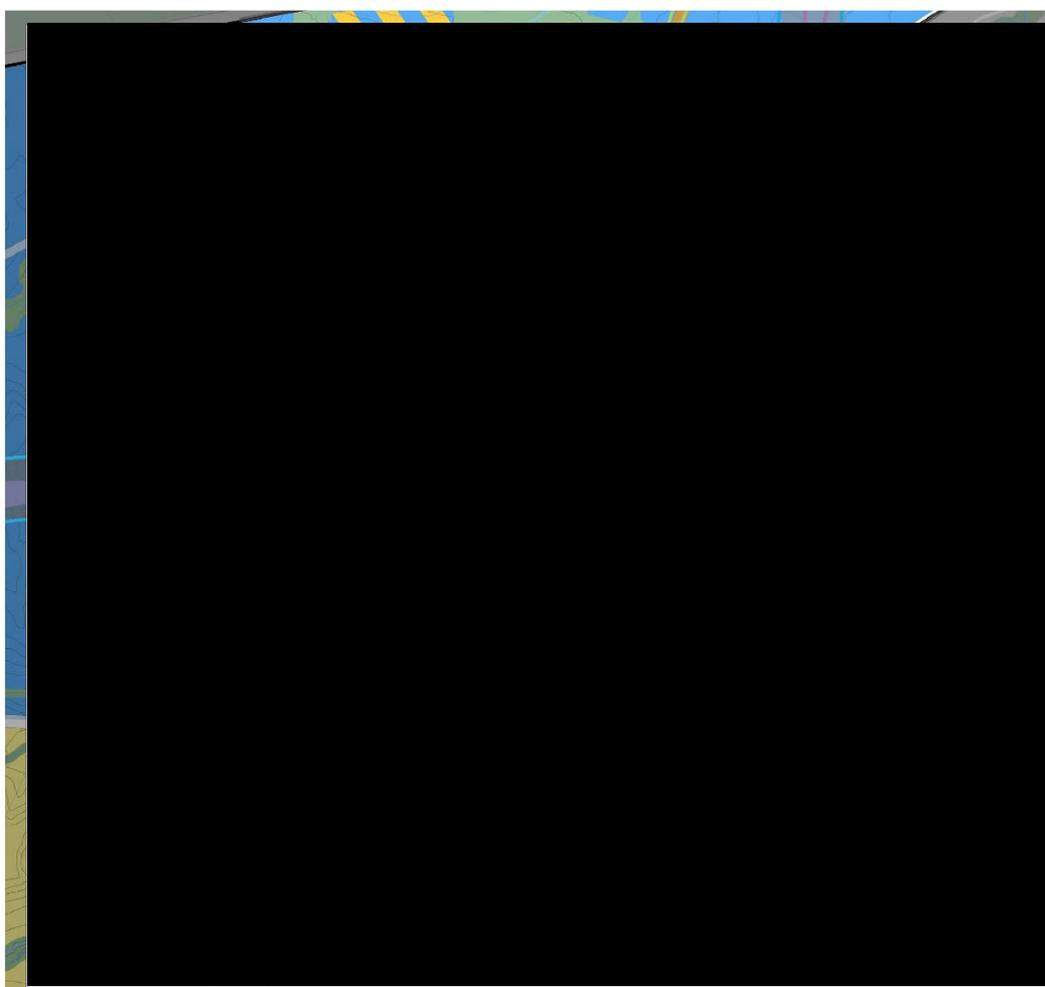
- 16. As precinct planners for the Aerotropolis, the WSPP must recognise the significant resultant benefits that re-aligning the M12 road corridor further north on the landholding would have for future land use planning of the Northern Gateway.**
- 17. The WSPP must use its significant place making responsibilities to influence the M12 road alignment to ensure that land use planning outcomes are prioritised to ensure that any new infrastructure is well integrated and supports future connectivity and development within the Aerotropolis**

4.6.2. Corridor Protection Mechanisms

As illustrated in the draft Structure Plan for the Northern Gateway the site is affected by the following transport corridors (refer **Figure 8**):

- M12 Airport Motorway and Airport Access Road
- Sydney Metro – Greater West
- M9 Outer Sydney Orbital (TBC)
- Sydney Freight Rail Corridor (TBC)

Figure 8 – Draft Northern Gateway Structure Plan (areas affected by transport corridors highlighted red)



Structure Plan - Northern Gateway



Source: *Western Sydney Airport Plan*

As noted in section 4.5, BHL has made numerous submissions in relation to these corridors noting the impacts they will have on the availability of high-quality developable land adjacent to the new WSA. BHL submit that an alternate alignment must be considered to minimise land fragmentation and to maximise the amount of developable area on the site south of the M12.

Whilst the area of land identified for compulsory acquisition for the M12 has been identified by the RMS as 61ha, the Draft Structure Plan identifies approximately 107ha of additional land area on the site that will likely be reserved for future transport corridors. This is highlighted within the proposed SEPP which makes reference to protection mechanisms for these transport corridors as follows:

“A Discussion Paper for a proposed State Environmental Planning Policy for the Protection of the Western Sydney Transport Corridor (the Corridors SEPP) has already been released by Government. The Corridors SEPP will prevail if it is in place before the Aerotropolis SEPP. If the Corridors SEPP is not in place, the proposed Aerotropolis SEPP will include provisions to deal with the proposed transport corridors within the Aerotropolis through a combination of zoning and/or corridor protection

The proposed SEPP will require master plans, development applications and complying development applications on or adjacent to these corridors to obtain concurrence from, or be referred to, Transport for NSW prior to consent being granted. It is important to note that the actual corridors are still under investigation and, where settled following public exhibition, will be incorporated into the final SEPP and precinct planning.”

BHL is concerned that very little detail is provided around the proposed corridor protection mechanisms and note that this prevents BHL from undertaking meaningful master planning of its site and in particular the areas of the site north of the M12 road alignment.

BHL Recommendation

18. The WSPP must provide further details of the proposed corridor protection mechanisms to be included within the proposed SEPP including any future land acquisition requirements such that certainty can be provided as to the development status of approximately 107ha of land identified on the site for future transport corridors.

4.6.3. Road Connectivity

The site fronts Elizabeth Drive which is an established road which will be upgraded to support the future Airport operations and Aerotropolis. Other than Elizabeth Drive and the M12 the draft Structure Plan does not identify any additional east/west road connections north of Elizabeth Drive nor provide details of any future local road hierarchy illustrates how fragmented landholdings will connect to a future road network.

BHL notes that the preliminary road design for the M12 Motorway does not provide any detail as to how this critical piece of road infrastructure would integrate into a future road network within the Aerotropolis. BHL also highlights that the M12 has only been designed for three access points and as

such has little or no consideration to future freight and vehicle movement which is likely to be generated by the land uses envisaged for the Northern Gateway precinct within the WSAP.

BHL is committed to working with the WSPP, PCC and Transport for NSW to ensure that:

- Land fragmented by the M12 is provided with appropriate connections across the M12 road corridor; and
- Employment land uses being planned for the Northern Gateway have ready access points to the M12 to ensure traffic from the Aerotropolis can gain quick access to the regional road network.

In this regard BHL requests that the WSPP consider indicating locations for future road connections and intersections within the Northern Gateway. This would include the indicative location for future roads across the M12 road corridor to fragmented landholdings identifying the location of a potential additional east west road connection through to Luddenham Road north of the current M12 road alignment which should also be allowed for in any future local contributions plans.

BHL Recommendation

- 19. That indicative future road connections be shown on the Northern Gateway Structure Plan including future north south and east west connections across the M12 road corridor to fragmented landholdings in addition to a potential additional east west road connection to Luddenham Road north of the current M12 road alignment.**

5. CONCLUSION

BHL supports the Western Sydney Aerotropolis vision and its aim to achieve a prosperous Aerotropolis in the short, medium and long term. We request the consideration of comments and recommendations contained within this submission in the finalisation of the draft Plan.

BHL looks forward to the implementation of this exciting new planning framework for the Western Sydney Aerotropolis and welcomes the opportunity to contribute and collaborate further to its implementation to ensure the success of the Aerotropolis.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

ATTACHMENT 1

BHL SUBMISSION TO M12 EIS



ANGEL PLACE
LEVEL 8, 123 PITT STREET
SYDNEY NSW 2000

URBIS.COM.AU
Urbis Pty Ltd
ABN 50 105 256 228

18 November 2019

Department of Planning, Industry and Environment
GPO Box 39
Sydney NSW 2001

Attn: Director Transport Assessments

Dear Sir/Madam,

SUBMISSION TO SSI-9364- M12 MOTORWAY ENVIRONMENTAL IMPACT STATEMENT – [REDACTED] BADGERYS CREEK

This submission has been prepared on behalf of Boyuan Holdings Limited (BHL Group) in response to the public exhibition of the Environmental Impact Statement (EIS) for the future M12 Motorway which has been declared critical State Significant Infrastructure under section 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act 1979).

BHL has an interest in a landholding located at [REDACTED] Badgerys Creek (the land/landholding). As illustrated in **Figure 1** the proposed M12 alignment comprises approximately 60ha the 344ha landholding. The legal description of the site is [REDACTED].

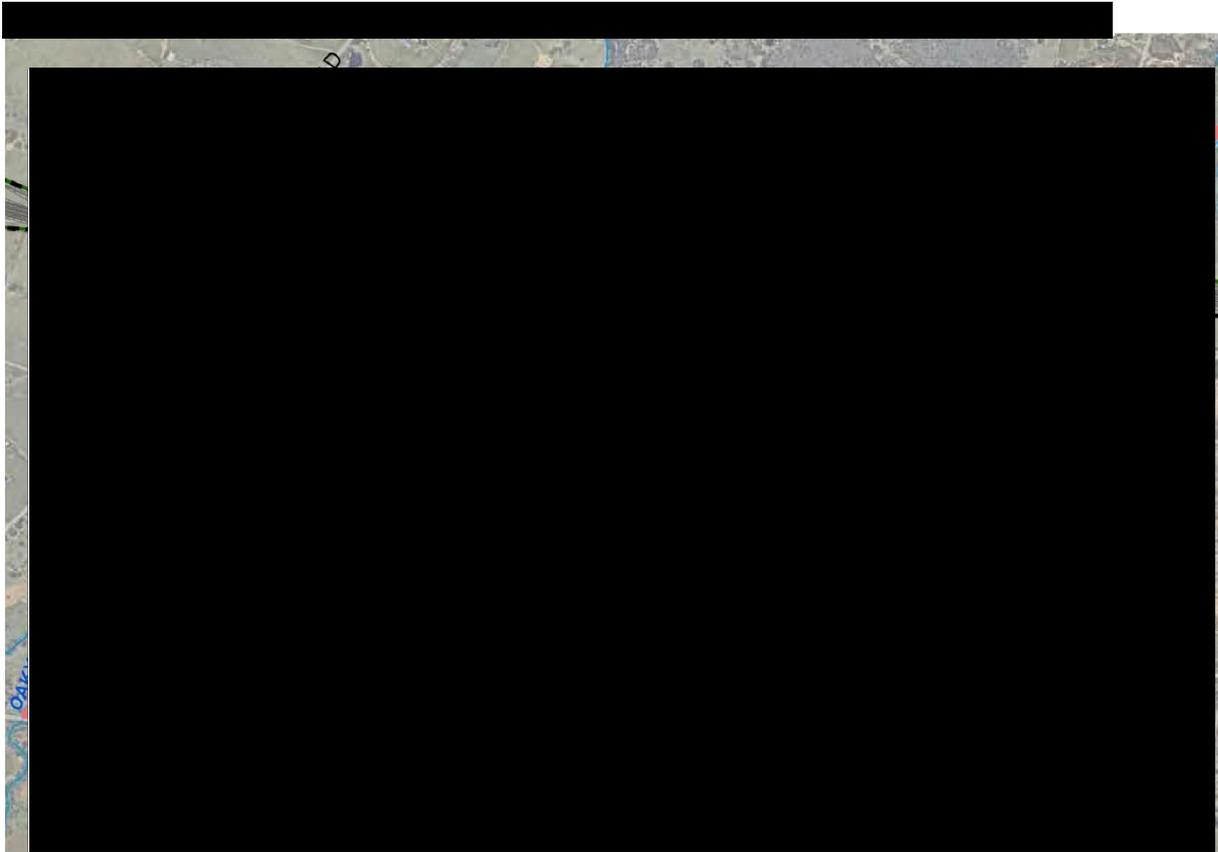
The landholding has a 1600m frontage to Elizabeth Drive and is located directly opposite the Western Sydney Airport site within the Northern Gateway precinct as identified within the *Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1 – Initial Precincts* (LUIIP).

The land is largely cleared of vegetation with several dams, primarily within the central and southern parts of the site. The site is bound by Cosgroves Creek to the west and adjacent landholdings and Badgerys Creek to the east.

The BHL Group currently holds a put and call option over the property with the intention to develop the site aligned with the expected future planning framework associated with the development of Western Sydney Airport and Aerotropolis as outlined within LUIIP.

Our submission includes:

- An overview of the development background and previous submission to the preliminary design for the M12 motorway.
- Details of BHL's proposed development concept and master plan.
- Details of BHL's concerns in response to the M12 EIS and potential impacts on their landholding



- | | | |
|------------------------------------|-----------------------------------|------------|
| — The project | Operational footprint | Waterways |
| Construction footprint | The project operational footprint | Motorway |
| The project construction footprint | Bridges | Main roads |
| Ancillary facilities | Permanent water quality basins | |

BACKGROUND AND PREVIOUS SUBMISSIONS

BHL Group submitted a planning proposal to re-zone the landholding in May 2018. The planning proposal was supported by a mixed-use master plan aimed at delivering a significant number of new jobs for Western Sydney. The 2018 planning proposal was based on the State Government’s establishment of the Western Sydney Priority Growth Area (2015) and intentions outlined within the Regional and District Plans (2018) to develop a new city on greenfield land around the airport to unlock opportunities for new jobs and homes in the heart of Western Sydney.

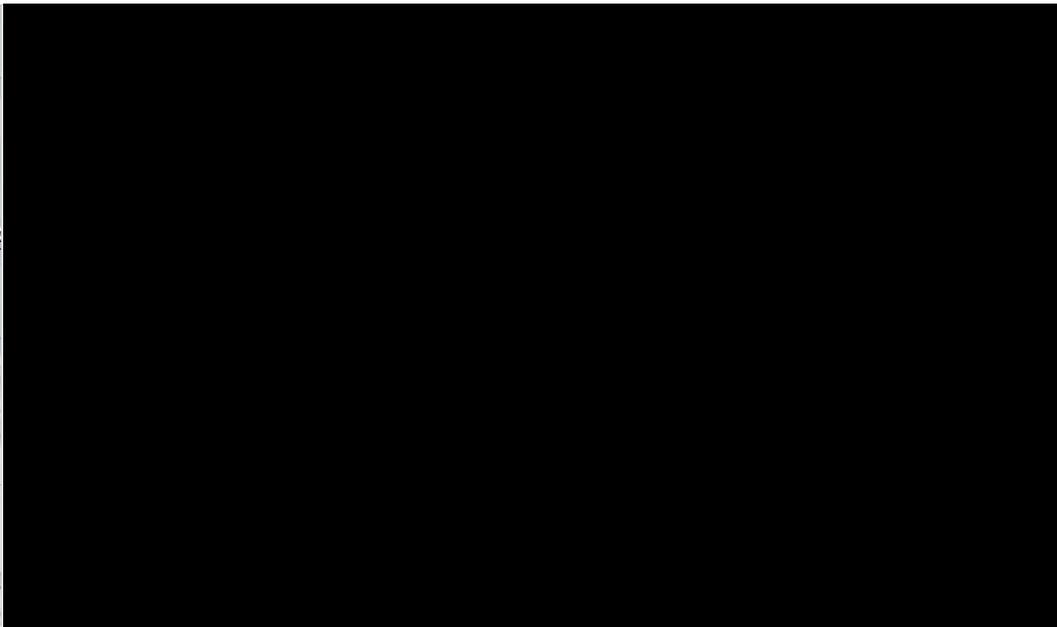
BHL also made a submission to the RMS in response to the public exhibition of the preliminary road design and access for the future M12 Motorway in 2018. The submission requested that the following key matters be considered in the final design being proposed within the SSI proposal (SSI-9364).

- The preliminary design would have a significant detrimental impact on the quality and quantity of developable area and result in significant land fragmentation.
- The preliminary design would mean a significant lost opportunity for Government in its efforts to deliver on the Objectives and Planning Priorities outlined within the Greater Sydney Region Plan and the Western City District Plan.
- That RMS consider a reasonable alternative corridor alignment that would retain the M12 Motorway within the northern part of the BHL land, while reducing the corridor's impacts on the development potential of the site.

BHL's 2018 submission outlined the following public benefits of an alternative alignment as illustrated in **Figure 2**, including:

- Preservation of an unparalleled opportunity to unlock the development potential of a large single landholding within the Western Parkland City adjacent to the new Western Sydney Airport.
- Delivery of the 30-minute Western Parkland City including substantial job creation and business investment aligned with the objectives of the Western City Deal, Greater Sydney Region Plan and Western City District Plan.
- Significant potential cost savings to the State Government regarding the construction and delivery of the M12 corridor (and associated future transport infrastructure).
- Economic and orderly use of the land in accordance with the Environmental Planning and Assessment Act 1979.

Figure 2 – BHL Proposed Alternative M12 Corridor Alignment – 2018



Source: Cardno, 2018

2. BHL'S PROPOSED DEVELOPMENT

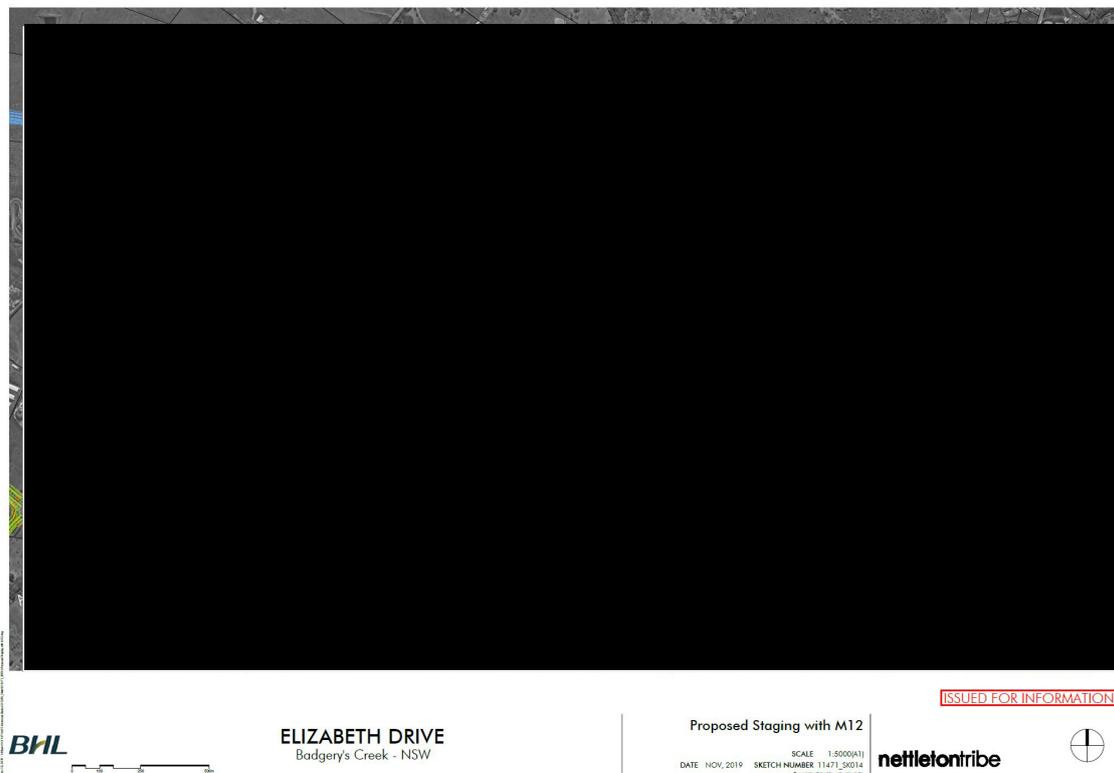
BHL has undertaken detailed background studies in relation to the land. These studies have informed the area available for development on the landholding based on existing known constraints.

Since 2018 BHL has continued to refine its proposed development intentions based on existing constraints and the expected planning framework outlined within the LUIIP and revised timeframes for the re-zoning of the Aerotropolis outlined within the *What We Heard Community Consultation Report* (Consultation Report) which has committed to releasing a draft planning framework by the end of 2019.

On this basis, BHL is also currently preparing a master plan layout for the site to inform future precinct planning for its landholding. This master plan layout includes an indicative internal road layout and possible connections into adjoining sites and across the exhibited M12 Corridor to the isolated land parcels to the north. This indicative layout is illustrated at **Figure 3**.

BHL Group is also currently preparing a more detailed master plan to inform a concept, and Stage 1 DA including early works for approximately 50ha of its landholding for a warehouse and logistics precinct which is aligned with the desired future land uses outlined within the LUIIP for the Northern Gateway.

Figure 3 – Future Road Network and Access Across M12 Footprint



Source: Nettleton Tribe - 2019

3. SUBMISSION AND RECOMMENDATIONS

BHL and their project team have undertaken a detailed review of the Environmental Impact Statement for the M12 Motorway dated October 2019 and supporting information available on the DPIE Major Projects website <https://www.planningportal.nsw.gov.au/major-projects/project/10226> .

BHL's key concerns in response to the M12 EIS and potential impacts on the landholding are outlined as follows.

1. **Availability of Developable Land** -The EIS states in Section 4.3 that a key assessment criterion for the route options was '*the integration with current and future land uses (that is non-sterilising)*'. However, we consider that the proposed route option and design has in fact an inverse affect and significantly impacts the landholding and its ability to rationally integrate with future land use.

Significantly the subject landholding is the only site large enough to accommodate the proposed airport access road interchange. Given the size of this interchange there is a risk of major fragmentation of what is the largest englobo landholding to the immediate north of the Western Sydney Airport. Good planning practice suggests that avoiding land fragmentation (when the option to do so clearly exists in this instance) will ensure the orderly and timely development of land consistent with broader land use planning objectives as currently detailed in the Stage 1 LUIP.

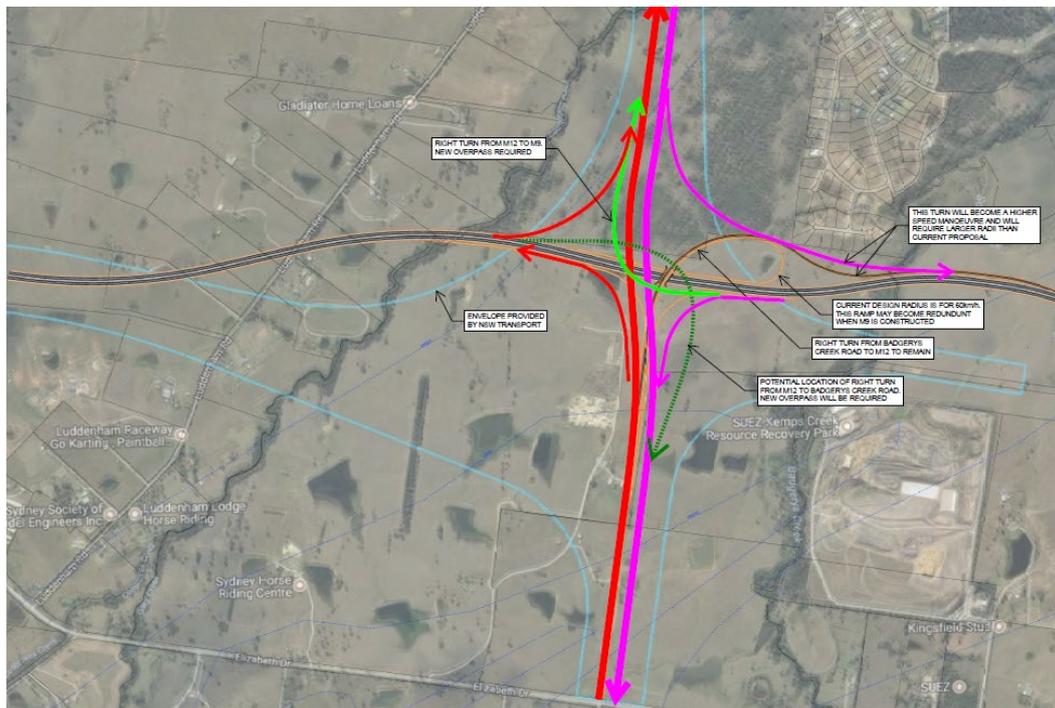
Put simply, the planned M12 east-west corridor bisects the site, physically separating the northern and southern parts of the site. The interchange between the primary east-west corridor and north-south connection to the Western Sydney Airport exacerbates this impact by creating isolated pockets of land that will be difficult to develop in a sound and logical manner without any broad consideration of alternative access arrangements. This impact is likely to be further increased when the interchange is combined with the future M9 Outer Sydney Orbital Corridor.

BHL is extremely disappointed that their original proposed corridor alignment as illustrated in **Figure 4** was not considered by RMS in the final alignment. This revised corridor alignment prepared for BHL by Cardno in 2018 and included in BHL's submission in response to the Preliminary Design for M12 Motorway. The revised alignment significantly reduced the potential for land fragmentation created by the proposed alignment by moving the alignment further north, generally parallel with the northern boundary of the site. Importantly, this alternative proposal retained the motorway corridor within the subject landholding. It maximises the opportunity to create a large consolidated developable area on the central and southern part of the site. It also provides for a more efficient interchange design which responds to the irregular configuration of the lot boundaries and minimises the area of land that will be isolated by the future road corridor.

Further to this we note that if the alignment could not change outside the site boundaries then a more logical outcome for the subject landholding would be to retain the motorway alignment as proposed outside of the site and propose a realignment of the motorway within the site. This alignment would have minimal impact on adjacent land however would see the alignment shift further north on as illustrated in **Figure 5**. This alignment improves the quality of the developable land within the BHL holding. The consolidation of the developable land offers greater flexibility to accommodate a variety of land use activities within a well-considered and compact site layout.

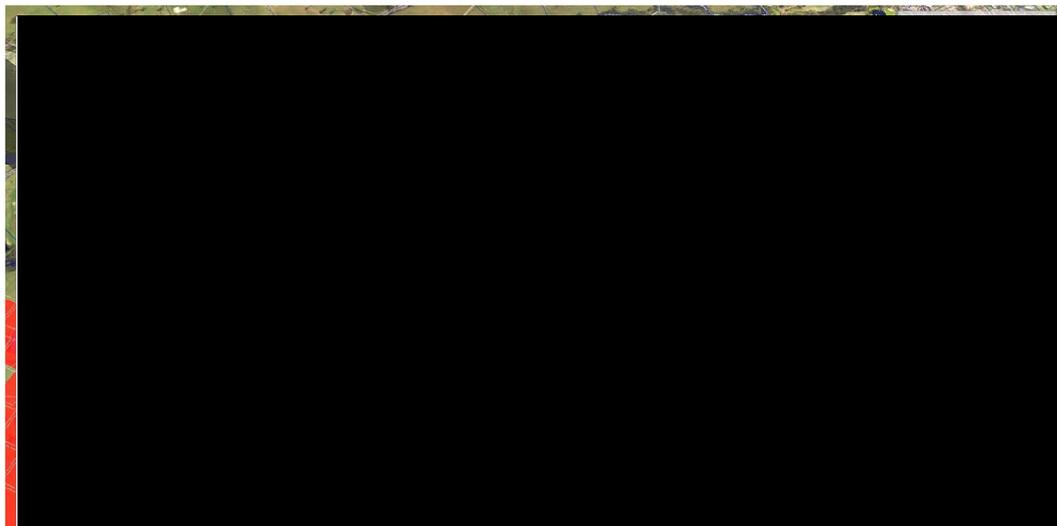
BHL Recommendation – RMS must provide a solution to avoid the subject landholding being sterilised to future development. BHL have previously recommended that The M12 must be re-aligned further north on the land to maximise the development potential of the site as illustrated in Figures 4.

Figure 4 – Preliminary Working Drawing: M12 and M9 Intersection



Source: Cardno, 2018

Figure 5 – Alternate Motorway Alignment Option - ARUP



Source: ARUP, 2019.

- 2. Land fragmentation limits future land uses** – The EIS noted that the preferred design option was considered to have the least land use impact. However, it is noted that none of the alternate options considered the significant land take impact of the proposed airport access interchange on the landholding. The design unnecessarily fragments this large, strategic landholding and will have a significant impact on the types of land uses and quality of the places that could be delivered. This would be inconsistent with the Objectives within the Greater Sydney Region Plan and the Planning Priorities within the Western City District Plan including the following direction in the Western City District Plan (p63):

“In assessing potential infrastructure corridors, economic, social and environmental outcomes are considered as well as their integration with the long-term land use and transport vision for the area.”

BHL Recommendation - RMS must provide a solution to avoid the subject landholding being fragmented. BHL have previously recommended that the route be re-aligned further north on the landholding to maximise the development potential of the site as illustrated in Figure 4.

- 3. Integration between land use and infrastructure planning** – The design of the proposed M12 design does not adequately consider future land uses envisaged for the Aerotropolis within the LUHIP and as such fails to successfully integrate land use and infrastructure planning including optimising infrastructure, facilitating a competitive and efficient freight network and access to jobs which are key objectives of the Western District Plan.

BHL Recommendation – RMS should improve access to the M12 from Elizabeth Drive to support future land uses within the Aerotropolis. An additional access point would support access to jobs within the Northern Gateway and facilitate future freight movements within the Aerotropolis by reducing regional freight movement within the local road network.

- 4. Integration with the future road network within the Aerotropolis-** The design of the M12 does not adequately detail how this critical piece of infrastructure would integrate into a future road network and does not consider how it would provide any benefits to people accessing jobs within the Northern Gateway.

BHL Recommendation - Given the significant amount of strategic planning work being undertaken within the Aerotropolis, the design must consider how the future road network within the Aerotropolis could be planned to facilitate the land uses envisaged by the LUHIP and must demonstrate how connections can be made across the M12 and the airport access road into fragmented land parcels to the north, east and west of the subject landholding. RMS should also consider whether temporary haulage routes proposed across Cosgroves Creek can be retained as part of a future local road network.

- 5. Impacts property access (internal)** – We note that the RMS intends to compulsorily acquire land within the BHL site for the M12 motorway corridor. This would mean that a new parcel of land would be created to the north of the land being acquired for the M12. Whilst the land currently benefits from an existing access via Elizabeth Drive, this new parcel of land north of the M12 would be severed from this existing access and as a result of the compulsory acquisition become a landlocked land parcel.

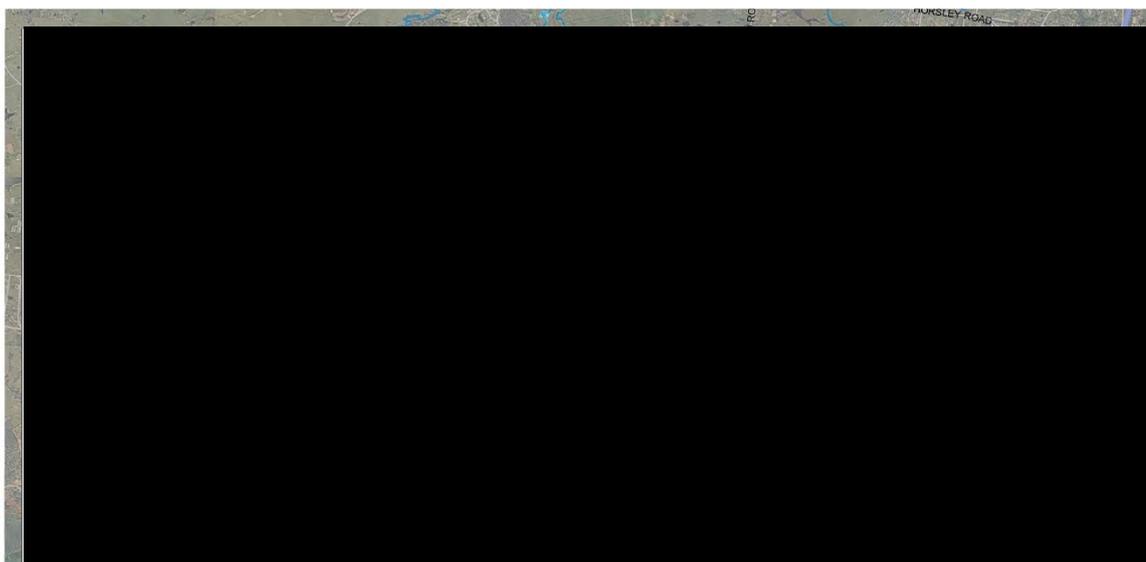
The EIS is inconsistent in how it proposes to deal with access to landlocked land parcels. Section 5.23 of the EIS notes that property access provisions were developed on the principle of providing

alternative access to landlocked land parcels by designing new access roads. Despite this principle the EIS provides no detail as to how it proposes to provide 'new access roads' to these landlocked land parcels which includes the BHL Landholding.

The proposed Environmental Management Measure (TT07) which relates to 'impacts on property access' does not reflect the principles for property access in section 5.23 of the EIS stated above. TT07 states that property access that is physically affected by the project will be reinstated to at least an equivalent standard and as such does not in any way guarantee that road access to the landlocked portion of land.

Further it is noted that the Access Strategy provided in the Transport and Traffic Report (Table 8-2 pp147) states that a property access path will be provided beneath BR02 (over Cosgroves Creek) to the divided portion of land (refer **Figure 6**).

Figure 6 – Proposed Access Path Location beneath BR02 (Green)



- The project
- Motorway
- Other roads
- Waterways
- Bridges

Figure 5-9 Project bridges



Source: RMS M12 EIS 2019

This proposed access path is wholly inadequate given the size of the site and the significant role this landholding will play in the development and early activation of the Aerotropolis as outlined in section 2 of this submission.

BHL Recommendation – Grade separated road access must be provided to the parcel of land on the BHL landholding that will be isolated by the proposed M12 design. This road access must be centrally located as shown in Figure 3 and take into the future land uses on the site which could include warehousing and logistics, hi—tech industry, commercial, health and education uses.

6. **Property Access (Internal)** – BHL understands that the proposed shared user path will pass under the airport access road.

BHL Recommendation – The shared access path must be combined with a future road to ensure connections into adjacent land as part of the future road network for the Aerotropolis. BHL requests more details around the shared user path and whether this path will allow for future connections into private land.

7. **Impacts to Property Access – Elizabeth Drive**; The EIS does not provide any detail on how the proposed Elizabeth Drive Overpass considers the future locations of intersections into the subject landholding.

BHL Recommendation – The EIS must provide more detail on how the Elizabeth Drive overpass has considered potential locations for access into the subject land holding west of the proposed airport access road.

8. **Construction Impacts (Access)** – BHL has significant concerns around the access to the landholding and the cumulative impacts that the construction will have on access for any future construction carried out concurrently for the first stage of BHL's proposed development.

BHL Recommendation – The construction of the M12 must not restrict or prejudice any future construction on adjacent land undertaken concurrently to the construction of the M12. Access to the landholding must be maintained at all times throughout construction. Any interruptions to access from Elizabeth Drive to the land must be mitigated through alternate access arrangements this includes providing access to the landholding via proposed Ancillary Facilities (AF2 and AF3) and via temporary haulage routes across Cosgroves Creek.

9. **Construction Impacts – Cumulative**: BHL has concerns around the potential for construction traffic delays along key haulage routes and other cumulative impacts when combined with other development within the Aerotropolis.

BHL Recommendation - RMS must engage with BHL on how they intend to manage cumulative impacts during construction given the likelihood of both developments happening at the same time.

10. **Construction Impacts – Extended Hours**. **BHL Recommendation** – the construction hours for the project must not impact upon BHL's construction program.

11. **Utility Services (Proposed)** – It is understood from the EIS that power and communications cabling will be installed along the length of project.

BHL Recommendation – BHL requests clarification from RMS on the capacity of the proposed power and communications cabling to be installed and whether there is potential for BHL to connect to these to provide services to the portion of BHL's landholding to be severed by the proposed M12.

- 12. Utility Services / Infrastructure (existing)** - BHL understands that as part of the project RMS will undertake ongoing consultation with utility providers with a view to refining potential utility modifications and utility protection measures during detailed design. In particular BHL notes that the EIS identifies existing overhead powerlines 1km to the north of Elizabeth Drive that will be relocated underground along a similar path to the existing powerline under the airport access road.

BHL Recommendation – Details of all adjustments to existing infrastructure including relocation of utility services and any other relocation of services being proposed which may impact upon the landholding must be provided to BHL by RMS.

- 13. Ancillary Facilities (Ancillary Facility 3 - AF3)** – BHL is aware of acquisition notices being issued for this land and note that this Ancillary Facility appears to be one of convenience due to location of existing structures. The EIS states that land for ancillary facilities would be subject to a temporary lease (p167). This conflicts with the property acquisition letter dated 02 September 2019 which notes that this 11.79ha portion of severed land is to be acquired by the RMS.

BHL Comment – BHL seeks clarification from the RMS as to its intentions around this land noting that the intentions for this land stated in the EIS contradicts the property acquisition letter received by the landowner in September 2019.

- 14. Land Acquisition – M9 Outer Sydney Orbital (OSO):** The EIS states that that the M12 between the Northern Road and the airport interchange would form the westbound carriageway with a new 4 lane eastbound carriageway built for the OSO.

BHL Comment – It is assumed that sufficient land has been acquired to include these additional carriageways and that RMS will not be seeking to acquire additional land for the M9 OSO.

- 15. Biodiversity – Fauna Passage** – BHL notes that a native fauna passage will be provided under BR02 over Cosgroves Creek.

BHL Recommendation – The fauna passage must be suitable for livestock access across the M12 footprint noting that it is intended that some agricultural use will be maintained on the landholding in the short to medium term. Alternatively, a separate livestock access must be provided.

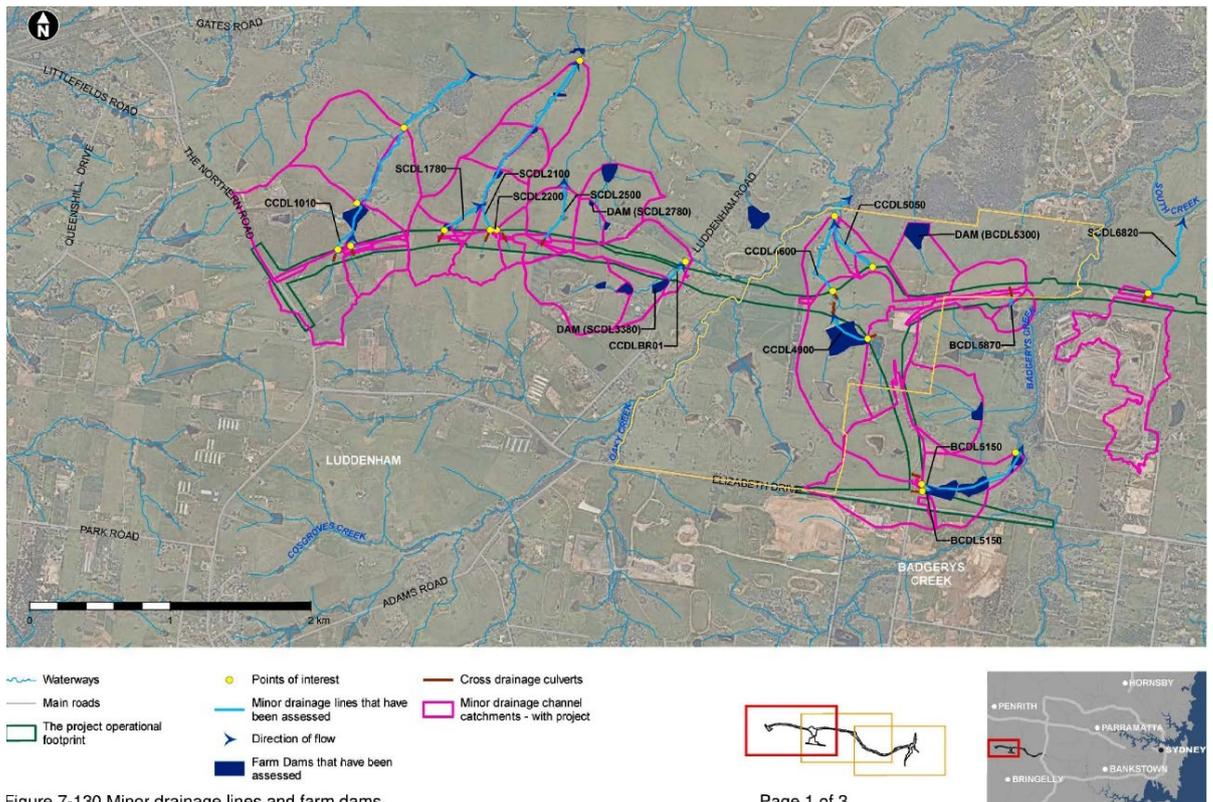
- 16. Flooding – Assessment of Cumulative Impacts** – BHL notes that the proposed design has not considered the cumulative impacts of flooding particularly considering the major development expected to occur in areas upstream of the project which would increase catchment runoff and that the any future developments and/or any such regional scale assessment would need to take into account the presence of the M12 Motorway within the landscape and/or results of the flood modelling from the project.

BHL Recommendation – BHL submits that given that the extent of urban and non-urban land within the Aerotropolis has been known since the release of the LUJIP in August 2018, the flood work undertaken by RMS should undertake an assessment the cumulative impact future development within the Aerotropolis boundary to ensure that the impact of the proposed Motorway does not adversely affect and or sterilise the development potential of adjacent land.

17. Surface Water – Drainage Lines & Dams – BHL is extremely concerned at the potential for increased flows and residual impacts identified for Drainage Lines CC DL 4900, CC DL 4600 and CC DL 5050 (all located on the subject landholding – refer **Figure 7**) and identified within Table 7-140 of the surface water quality and hydrology assessment in EIS. These impacts include increased flows that may impact adversely on the performance of the spillway to the farm dam at this location. Despite the proposed mitigation measures the residual impacts include a minor increase in the rate and volume of runoff into the dam and that it is likely to fill and overtop more frequently due to these impacts.

BHL Recommendation – The Motorway must not discharge water to overland flow paths such that any increase in rate and volume of runoff should impact upon impacts on private land to the extent that it would adversely affect the future development potential of the subject landholding. All management measures to control any flows and runoff from the M12 must be contained within the operational footprint. The EIS must include details of these measures to ensure there will be no increase to overland flow/flooding impacts from the M12 into private land.

Figure 7 – Drainage Lines and Farm Dams



Source: M12 EIS, 2019

18. Surface Water - Drainage Lines & Dams: BHL Recommendation - RMS must provide details of all farm dams to be removed within the construction footprint.

19. Aboriginal Archaeology – BHL is concerned that Potential Archaeological Deposits (PADs) were identified within identified study area outside of the construction and operational footprint may be located on the subject landholding. In particular we note that there are potential archaeological deposits east of Cosgroves Creek and west of Badgerys Creek 1km north and south of the construction footprint.

BHL Recommendation – BHL notes that details of any PADs identified outside of the construction footprint have been redacted within the EIS. BHL requests these details to ensure that these can be cross referenced and included in any future Aboriginal Cultural Heritage Assessment undertaken in relation to the subject landholding.

20. European Heritage – BHL notes that a mitigation measure has been proposed within the EIS to assist in funding a thematic heritage study of CSIRO and McMaster Field Station on the subject landholding:

BHL Recommendation – BHL request further details around this study and how this might be funded by RMS.

21. Visual Impacts – BHL Recommendation - Landscape screening / mounding must be provided along the alignment of the M12 where it is not proposed within a cutting to reduce the overall visual impacts of the motorway to future land uses. Provision for this mounding and landscaping must be within the M12 footprint and not result in a further reduction in developable land on the subject landholding.

22. Acoustic Impacts – The areas impacted the most by the M12 are the areas of the site which are less impacted by aircraft noise. The lack of any proposed noise mitigation measures would significantly restrict future land uses on the site and as such adversely affect the landholding. The EIS notes that requirements for mitigation measures will be reviewed as part of an Operational Noise and Vibration Review (ONVR) as the detailed design progresses:

BHL Recommendation – The ONVR must consider future land uses envisaged for the Northern Gateway within the LUJIP which could include not only warehousing and logistics, but also hi—tech industry, commercial office, retail, health and education uses. Appropriate noise mitigation measures must be provided to ensure that potential noise and vibration impacts from the M12 do not adversely affect the types of land uses that can be achieved on the adjacent landholding.

23. Acoustic Impacts – The noise results detail that the BHL landholding will be the most affected by noise during both construction and operation.

BHL Recommendation - BHL notes the potential significant impact of construction noise will have on any future temporary land uses being considered by BHL and as such would request that RMS consult with them in relation to providing specific mitigation measures to ensure that these temporary uses are not significantly impacted.

24. Air Quality Impacts - BHL notes the Air Quality assessment within Chapter 8.2 of the EIS states that receiver sensitivity to dust soiling was determined to have a medium risk around the BHL site. The assessment also noted that receiver sensitivity to human health effects would have a high risk of human health effects at the BHL site. Nevertheless, the EIS concluded that the project would



not lead to unacceptable air quality impacts, and that the need for more detailed assessment would not be required. This conclusion is based on the determination of potential local and regional impacts on air quality during both construction and operational stages, including potential cumulative impacts.

BHL Recommendation – Any adverse impacts which adversely affect or restrict either temporary or future land uses on the adjacent land holding are unacceptable.

- 25. **Contamination** – BHL is concerned at the level of contamination identified within the EIS noting that BH202 and BH 207 exceeded contaminant guidelines. BHL also questions the level of investigations undertaken in relation contamination within the identified study area.

BHL Recommendation: BHL recommends that RMS undertake further studies in relation to all identified contamination and that it liaises with the relevant stakeholders to ensure any remediation is appropriately undertaken and does not adversely affect the development potential of adjacent land.

4. CONCLUSION

The recommendations set out in this submission seek to ensure that the potential construction and operational impacts of the M12 do not impact upon adjacent land to the extent that future development on the adjacent landholding at [REDACTED], Badgerys Creek is not sterilised nor adversely affected.

BHL appreciates the opportunity to make a submission in response to the public exhibition of the EIS for M12 Motorway and would welcome ongoing dialogue with the Department of Planning Industry and Environment (DPIE) and the RMS throughout the stakeholder consultation process.

It is our strong view that the alignment of the M12 Motorway needs to be amended and refined to minimise its potential impacts on the economic, social and environmental outcomes for the BHL land and the delivery of the Objectives and Planning Priorities outlined within the *Greater Sydney Region Plan* and the *Western City District Plan*.

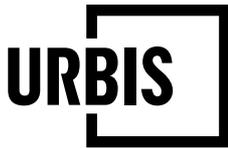
BHL would appreciate the opportunity to meet with the DPIE and RMS to discuss their submission in further detail.

If you have any questions, please don't hesitate to contact either the undersigned or [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



**ANGEL PLACE
LEVEL 8, 123 PITT STREET
SYDNEY NSW 2000**

URBIS.COM.AU
Urbis Pty Ltd
ABN 50 105 256 228

Department of Planning, Industry and Environment
GPO Box 39
Sydney
NSW 2001

Attn: Director Transport Assessments

26 November 2019

Dear Sir/Madam,

BHL – ADDENDUM TO SUBMISSION TO EXHIBITED M12 MOTORWAY EIS – PREFERRED ROUTE CORRIDOR & REFINED ROUTE CORRIDOR

This letter is submitted as an addendum to the submission prepared by Urbis on behalf of Boyuan Holdings Limited (BHL Group) in response to the public exhibition of the Environmental Impact Statement (EIS) for the future M12 Motorway which has been declared critical State Significant Infrastructure under section 5.13 of the Environmental Planning and Assessment Act 1979 (EP&A Act 1979).

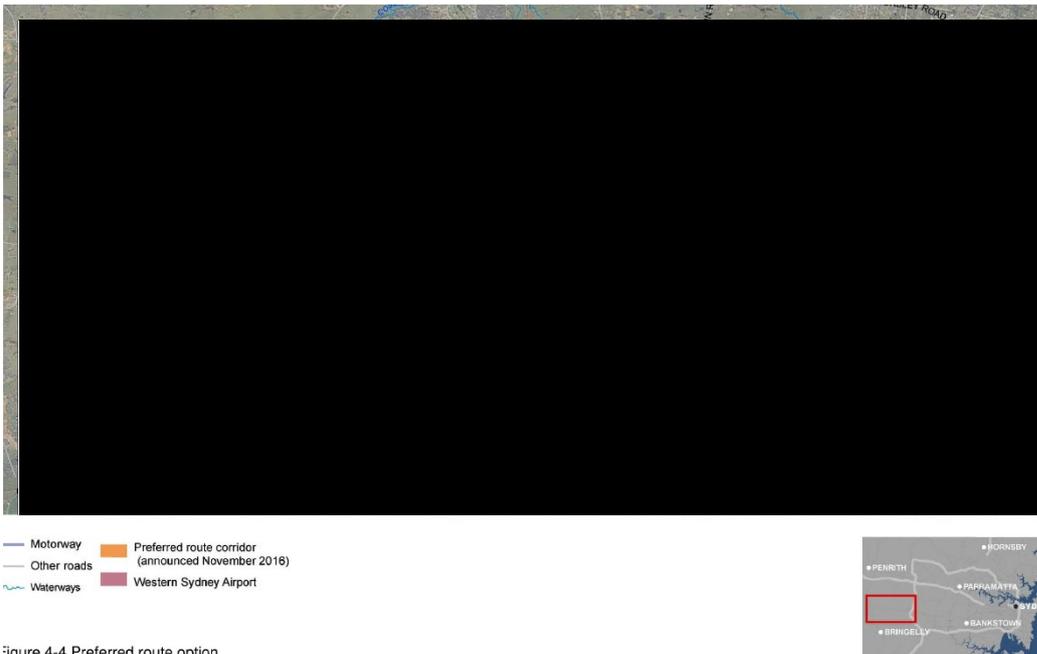
BHL has an interest in a landholding located at 1953 – 2109 Elizabeth Drive, Badgerys Creek (the land/landholding) which is significantly impacted by the proposed M12 alignment which includes both the M12 corridor and interchange to the proposed airport access road.

The addendum submission relates to the significant differences between the preferred route corridor alignment announced in November 2016 and the refined route corridor announced in February 2018 (refer **Figure 1** overleaf) and the additional impacts that this change in alignment will have on the subject landholding. The EIS states in Section 4.3 that a key assessment criterion for the route options was *'the integration with current and future land uses (that is non-sterilising)'*.

As shown in **Figure 1 Picture 1** the original 2016 alignment of the airport access road runs in a predominantly straight line from north to south between proposed M12 interchange and the boundary of Western Sydney Airport. This alignment logically follows the existing property boundary between the subject landholding and the adjacent landholding to the east. The 2016 alignment would ensure that the land take required for the airport access road could be equitably split between the adjacent land holding to the east. The 2016 alignment would also shift the airport access road carriageway and interchange into the areas more highly constrained by aircraft noise allowing a wider range of land uses to be considered in the less constrained areas of the subject landholding.

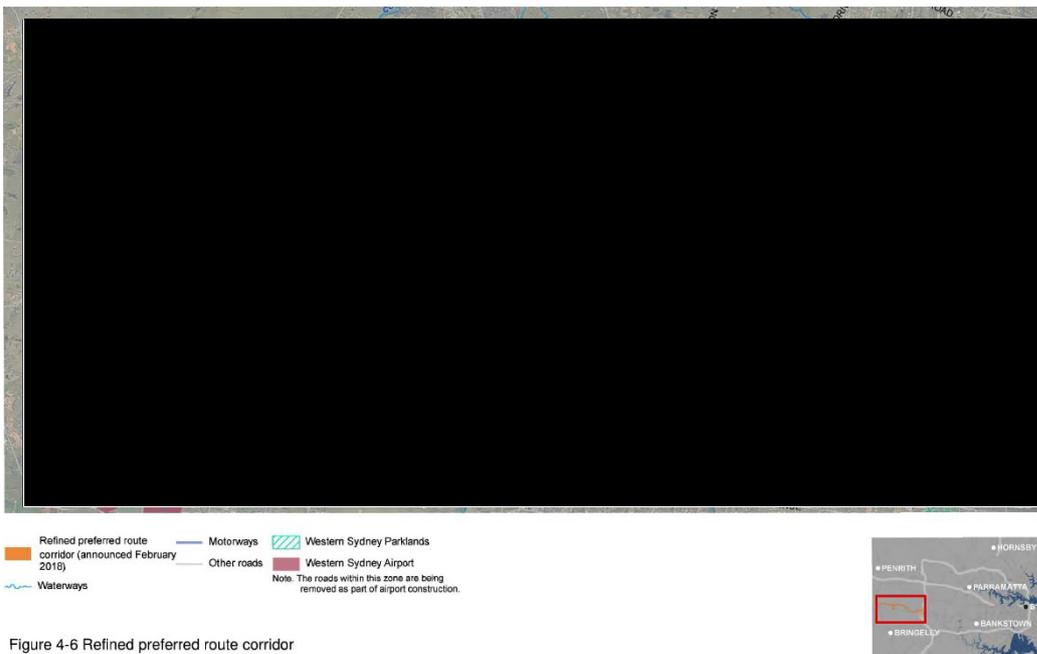
The refined preferred route corridor shown in **Figure 1 Picture 2** moves the proposed interchange westwards providing a more angled north south road corridor than the 2016 alignment. Alignment means that approximately 11.79ha of the subject landholding will be severed to the east of the airport access road. As shown in **Figure 2** the RMS proposes to compulsorily acquire this severed portion of land on which the EIS states will be utilised for Ancillary Facility 3.

Figure 1 Preferred Route Corridor (2016) vs Refined Preferred Route Corridor (2018)



Picture 1 Preferred Route Corridor 2016

Source: M12 EIS, 2019

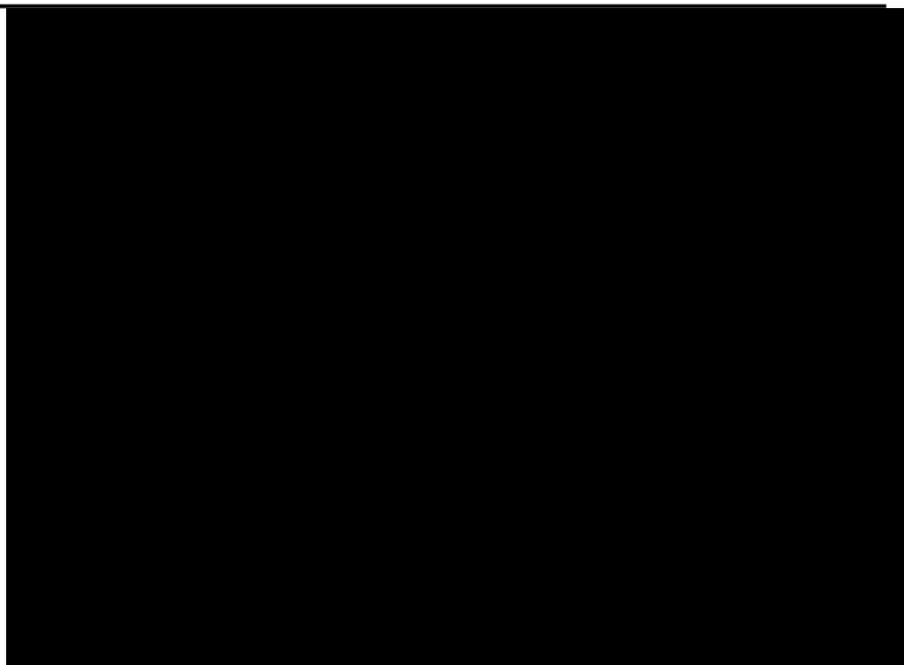


Picture 2 Refined Preferred Route Corridor (2018)

Source: M12 EIS, 2019

Figure 2 Proposed Acquisition Areas

PLAN
SHOWING LAND TO BE LEASED AND ACQUIRED FOR
FREEWAY PURPOSES AT BADGERYS CREEK



- LAND TO BE ACQUIRED FOR FREEWAY PURPOSES
 TOTAL AREA ABT 47.29 ha 
- SEVERED LAND TO BE ACQUIRED
 TOTAL AREA ABT 11.79 ha 
- LAND TO BE LEASED FOR CONSTRUCTION PURPOSES
 TOTAL AREA ABT 1.71 ha 

Source: RMS, 2019

The impact of this change in alignment increases the already significant amount of land within the site that would be affected by proposed infrastructure corridors and associated land acquisition.

The change in alignment would further reduce the opportunity to create a large consolidated developable area on the central and southern portions of the landholding. The alignment would unnecessarily fragment and sterilises the site which is contrary to the assessment criteria utilised for the route options.



Avoiding unnecessary land fragmentation will ensure the orderly and timely development of land consistent with broader land use planning objectives as currently detailed in the Stage 1 LUIIP. As such, BHL submit that the straighter 2016 alignment for the airport access road must be reconsidered to minimise the amount of land acquired by the RMS for the M12 corridor in addition to increasing the amount of developable land on of what is the largest englobo landholding to the immediate north of the Western Sydney Airport.

BHL appreciates the opportunity to submit this addendum to its submission response to the public exhibition of the EIS for M12 Motorway and would welcome any opportunity to participate in ongoing dialogue and meet with the Department of Planning Industry and Environment (DPIE) and the RMS to discuss their submission in further detail.

If you have any questions, please don't hesitate to contact either the undersigned or [REDACTED]
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

ATTACHMENT 2

**RIPARIAN ASSESSMENT REPORT
ECO LOGICAL**

11 March 2020

Our ref: 19SYD-15014

Boyuan Holdings Limited
[REDACTED]

Attention: [REDACTED]

Dear [REDACTED],

Re: Confirmation of 'rivers' on Northern gateway site

Eco Logical Australia (Ela) was engaged to provide an assessment

- undertake field survey to determine whether mapped hydrolines in the Northern Gateway Precinct met the definition of a 'river' under the Water Management Act
- advise on the recommended riparian corridor widths
- liaise with the Natural Resource Access Regulator (NRAR) to seek their feedback on the above assessment so that precinct planning or future development applications in the precinct could appropriately plan for the retention of riparian buffers

The site assessment was undertaken in August 2018 (attachment A). The assessment confirmed that Cosgrove Creek, Badgerys Creek and an un-named tributary entering Cosgrove Creek in the north of the precinct were considered 'rivers' under the Water Management Act. However other mapped hydrolines did not have defined channels and therefore would not be considered 'rivers' under the Water Management Act.

The assessment was provided to NRAR in March 2020 for their review. NRAR's response (6 March 2020) endorsed ELAs assessment and stated:

- *I have reviewed the report title " Riparian Assessment Report Northern Gateway Planning Proposal' Dated August 2018 by ecological Australia". I agree that the evaluation/assessment of the riparian corridor requirements are sound and acceptable in accordance with NRAR guidelines . However, I have concern on the encroachment of the riparian area presented in Figure 9 and must ask why could not be avoided.*
- *Please note that the above advice is only a preliminary review of the submitted report and the information provided and must not be considered as an assessment of a development proposal nor can you assume NRAR support of future development proposal as a full assessment and*

determination can only be made following lodgement of Integrated DA under IDAS or assessment of an SSD.

- *The advice provided in no way restricts the discretion of NRAR in the assessment and determination of any future application for a proposed works/development on the subject site. Other issues not identified in this advice may emerge during full assessment of the complete application.*

The response questioned a small incursion into a riparian zone in one part of the site, however this was a minor matter that is likely to be dealt with by re-design of construction footprints.

ELA were also asked by BHL review the draft Western Sydney Aerotropolis Plans currently on public exhibition, particularly in relation to the areas shown as *Environment and Recreation* on the Draft Zoning Map. ELA notes that these areas appear to be based on the Draft Flood Map (1 in 100 Year Flood Area) plus a buffer. These areas co-incide with rivers and their buffer zones in relation to Cosgrove Creek, Badgerys Creek and the u-named tributary to Cosgrove Creek. However where the Draft Zoning Maps show the *Environment and Recreation Area* in other parts of the site, they do not align with existing rivers.

ELA also undertook amphibian survey in February/March 2020 to determine whether any of the dams contained Green and Golden Bell Frog. No Green and Golden Bell Frog were recorded.

To clarify any of the above, I can be contacted on [REDACTED]

Regards,

[REDACTED]

[REDACTED]

[REDACTED]



Northern Gateway Planning Proposal

Riparian Assessment Report

Prepared for
Cyan Stone Badgery's Creek Holdings Pty Ltd

August 2018



DOCUMENT TRACKING

Item	Detail
Project Name	Northern Gateway Planning Proposal – Riparian Assessment
Project Number	9675
Project Manager	[REDACTED] [REDACTED] [REDACTED]
Prepared by	[REDACTED]
Reviewed by	[REDACTED]
Approved by	[REDACTED]
Status	Final
Version Number	2
Last saved on	24 August 2018
Cover photo	Badgerys Creek, photo taken by Emily Messer

This report should be cited as ‘Eco Logical Australia 29 June 2018. *Riparian Assessment Report – Northern Gateway Planning Proposal*. Prepared for Cyan Stone Badgerys Creek Holdings Pty Ltd.’

ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd with support from Cyan Stone Badgerys Creek Holdings Pty Ltd and EG.

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Template 29/9/2015

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1 Introduction and Statutory Context

This Riparian Assessment Report was prepared on behalf of Cyan Stone Badgerys Creek Holdings Pty Ltd to accompany a Planning Proposal for the rezoning and development of the 344 ha land parcel at [REDACTED], Badgerys Creek (the Site). ELA have prepared this assessment based on the masterplan provided by OMA on 20 June 2018 and information contained within a Planning Proposal submitted to Penrith City Council (Council) in May 2018.

The proposed development vision includes mixed residential living, community facilities, hospital and medical facilities, offices, retail, education, warehouse and logistics, infrastructure, services and landscaped areas. An alternate location for the future M9/M12 road corridor is also proposed in the north of the Site. ELA have assessed riparian values in this area but have not undertaken an impact assessment as these impacts are currently unknown. This report therefore assumes that a detailed environmental impact assessment for the M12 project will be undertaken separately to the proposed development.

This report outlines the methods, results, constraints and recommendations of the desktop review and field survey of riparian corridors within the Study Area.

The NSW Department of Industries - Natural Resources Access Regulator (NRAR) administers the NSW *Water Management Act 2000* (WM Act) and is required to assess the impact of any proposed work on waterfront land. This includes the bed and bank of any river, lake or estuary and land within 40 m of the highest bank. Certain activities within waterfront land are defined as ‘Controlled Activities’ which require a Controlled Activity Approval (CAA) if they are associated with local development under Part 4 of the *Environmental Planning and Assessment Act 1979*. For any State Significant Development (SSD), the Secretary’s Environmental Assessment Requirements (SEARs) will usually describe the level of riparian assessment required. However, a separate approval from NRAR is not required for SSD.

The NRAR’s *Guidelines for Controlled Activities on waterfront land—Riparian corridors* (NRAR 2018) outlines the need for a Vegetated Riparian Zone (VRZ) adjacent to the channel to provide a transition zone between the terrestrial environment and watercourse. This vegetated zone helps maintain and improve the ecological functions of a watercourse whilst providing habitat for terrestrial flora and fauna. The VRZ plus the channel (bed and banks of the watercourse to the highest bank) constitute the ‘riparian corridor’ (**Figure 1** below). All streams have a predetermined VRZ width based on their Strahler Order (

Table 1 below).

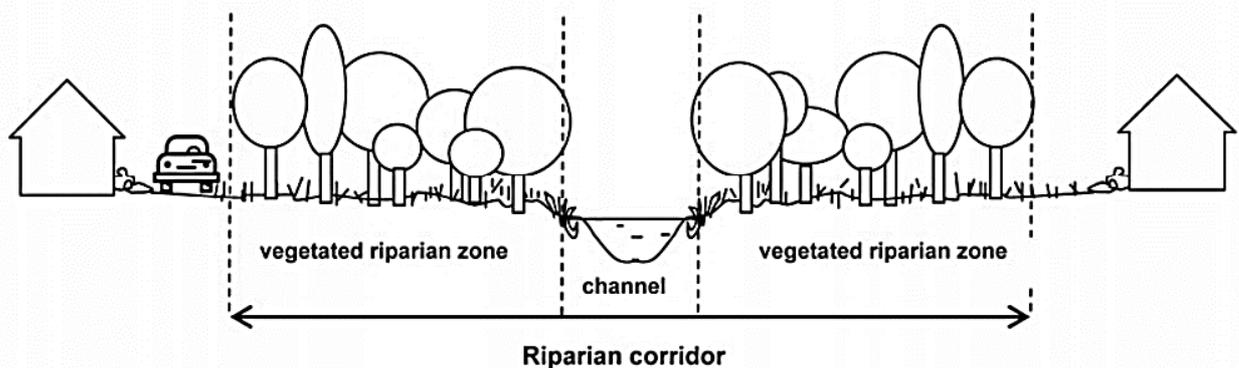


Figure 1: VRZ and watercourse channel comprising the riparian corridor (NRAR 2018)

Table 1: Recommended riparian corridor widths relative to Strahler Order (NRAR 2018)

Watercourse type	VRZ width (each side of watercourse)	Total RC width
1 st order	10 metres	20 m + channel width
2 nd order	20 metres	40 m + channel width
3 rd order	30 metres	60 m + channel width
4 th order and greater (includes estuaries, wetlands and any parts of rivers influenced by tidal waters)	40 metres	80 m + channel width

Non-riparian uses can be authorised by NRAR within the outer 50% of the VRZ (**Table 2** below), as long compensation (1:1 offset) is achieved within the site. The outer VRZ that is impacted must be offset elsewhere on site using the ‘averaging rule’ (**Figure 2** below). The inner 50% of the VRZ must be fully maintained and vegetated with native riparian species.

Table 2: Riparian corridor (RC) matrix (NRAR 2018)

Stream order	Vegetated Riparian Zone (VRZ)	RC off-setting for non RC uses	Cycleways and paths	Detention basins		Stormwater outlet structures and essential services	Stream realignment	Road crossings		
				Only within 50% outer VRZ	Online			Any	Culvert	Bridge
1 st	10m	•	•	•	•	•	•			
2 nd	20m	•	•	•	•	•		•		
3 rd	30m	•	•	•		•			•	•
4 th +	40m	•	•	•		•			•	•

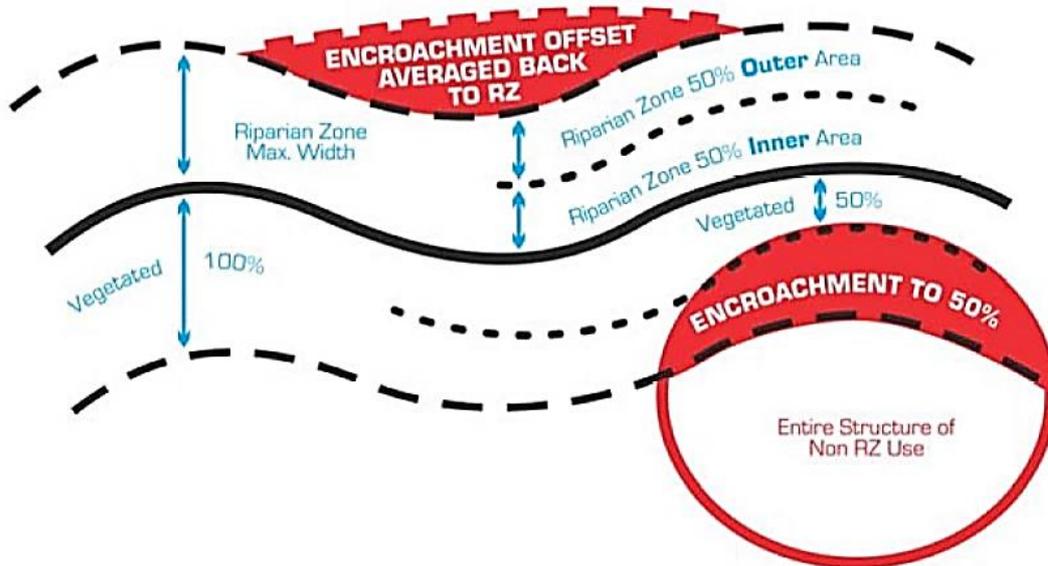


Figure 2: Riparian 'averaging rule' for offsetting encroachment into the outer 50% of the VRZ (NRAR 2018)

The *Guidelines for riparian corridors on waterfront land* also states that where a watercourse does not exhibit the features of a defined channel with bed and banks, the NRAR may determine that the watercourse is not waterfront land for the purposes of the WM Act, but this does not alter the downstream watercourse Strahler classification.

2 Methods

The Strahler stream order classification was extracted from the Department's GIS dataset. Top of bank was estimated using aerial photographs and 2 m contours, before being field-validated on 10 May 2018. Each watercourse that met the definition of a 'river' under the WM Act was assigned the appropriate riparian corridor width in accordance to the stream order. Online dams were excluded from the VRZ as NRAR would support their removal, so top of bank was estimated through the dam to resemble future channel reconstruction.

The watercourses and riparian zone were visually assessed for ecological value regarding physical form, benthic substrate, fish habitat, instream woody debris and vegetation condition.

3 Results

The field-validated riparian corridors (VRZ + channel) of the 'rivers' within the Study Area are mapped in **Figure 3 – overview**, **Figure 4 – western portion**, **Figure 5 – central portion**, and **Figure 6 – eastern portion**. In total, 20.1 ha of riparian corridor along validated watercourses occurs within the Study Area.



Figure 3: Field-validated riparian corridors (see next figures for closer scale)

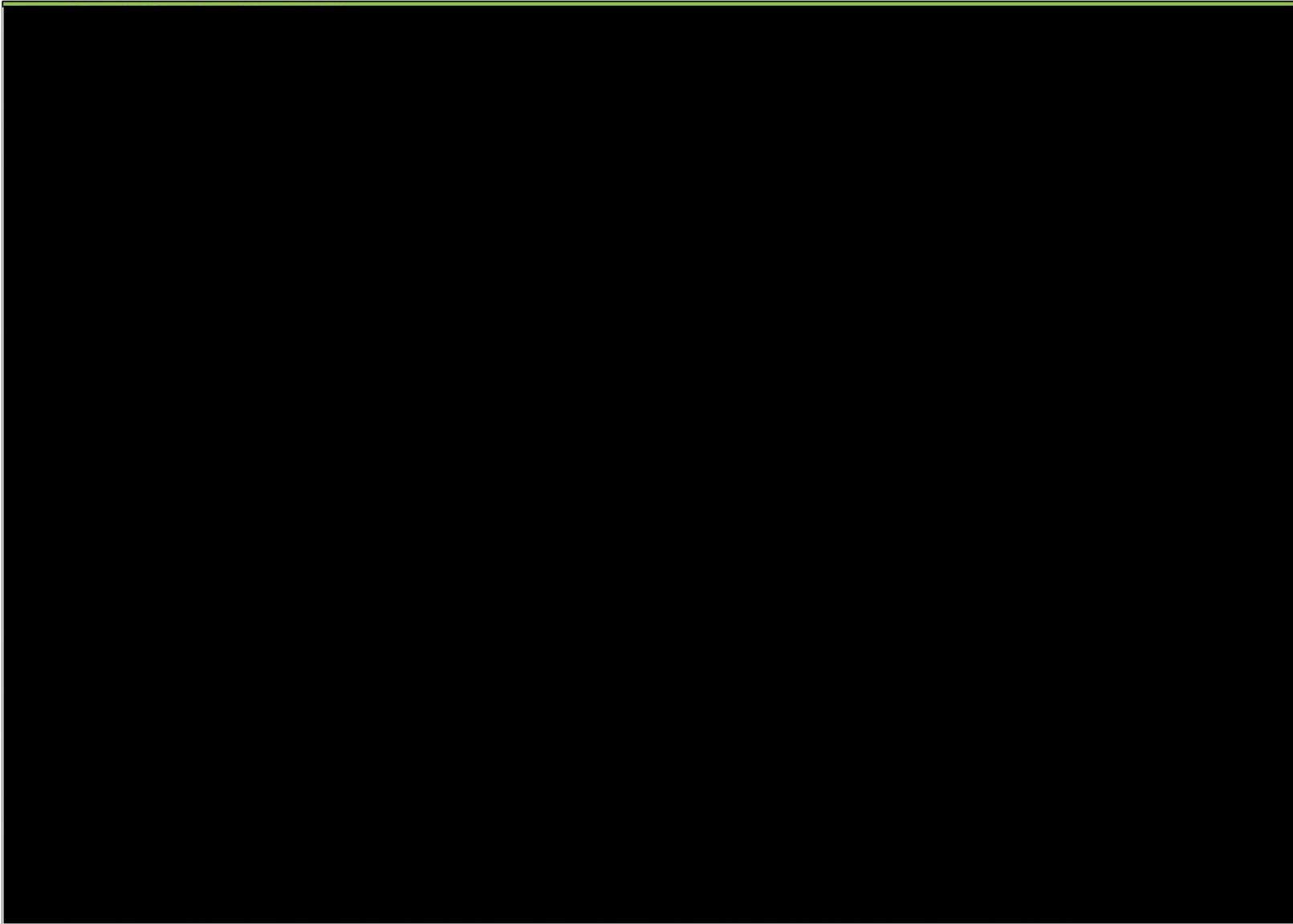


Figure 4: Field-validated riparian corridors (western portion)

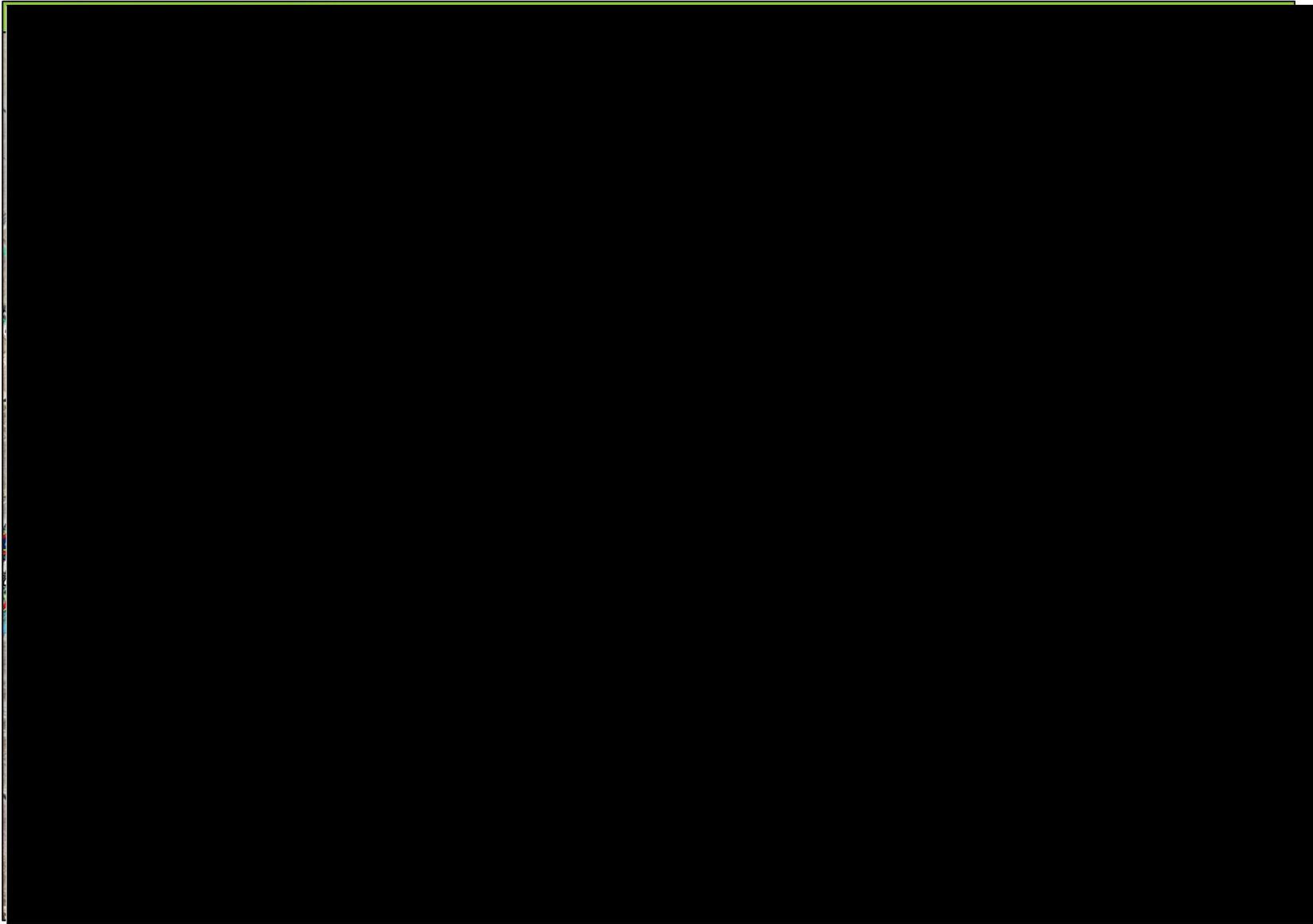


Figure 5: Field-validated riparian corridors (central portion)

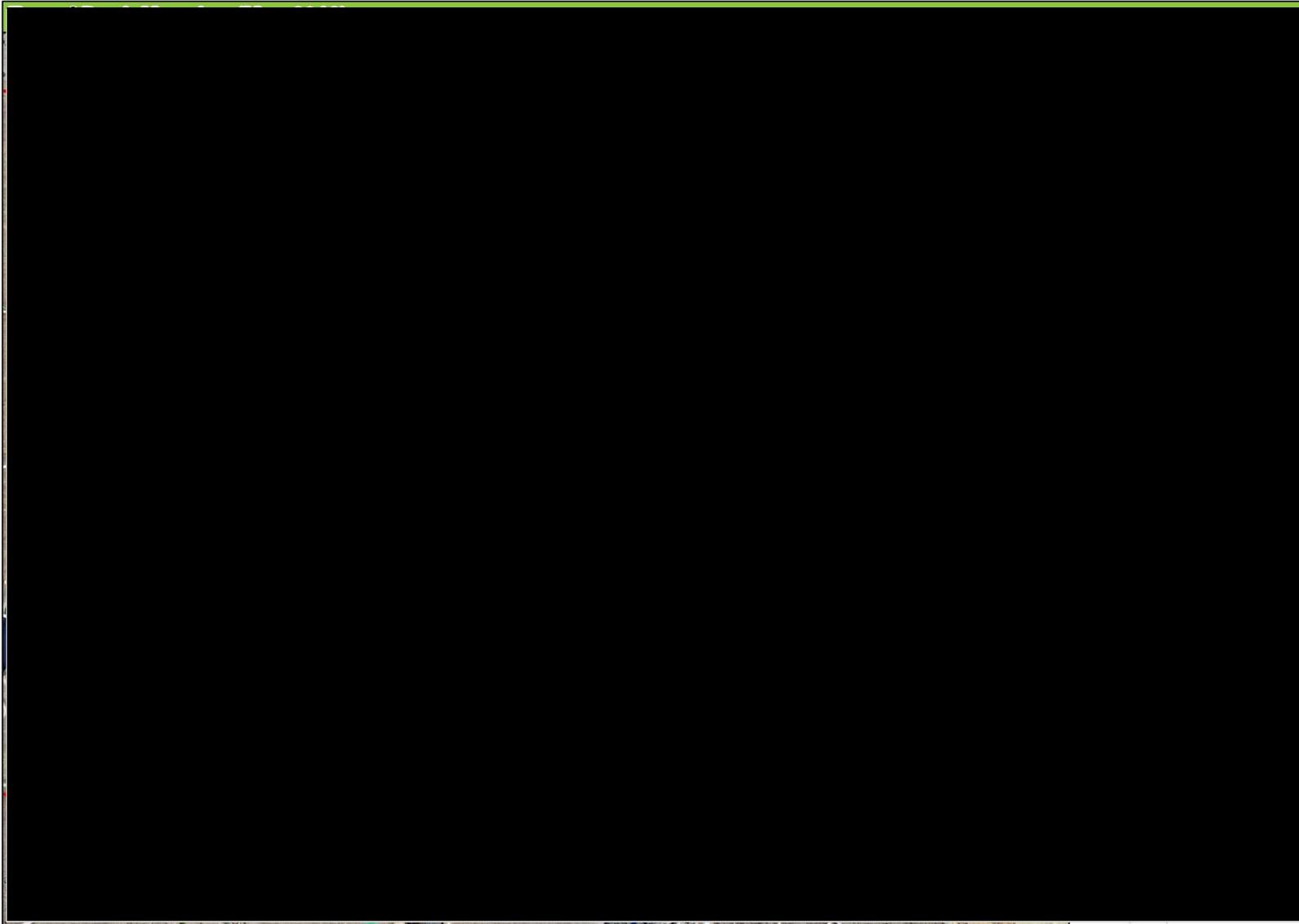


Figure 6: Field-validated riparian corridors (eastern portion)

Reaches 1A – 1J: No first order streams within the Study Area had defined bed, banks or geomorphic processes. The streams were cleared grassy depressions that may flow during heavy rainfall. The riparian zone for all first order streams was cleared pasture. See **Table 3** below for photos of first order streams within the Study Area.

Table 3: First order streams with no defined bed, banks or geomorphic processes

Reach	Facing upstream	Facing downstream
1A	 <p>Photo 1A-1</p>	 <p>Photo 1A-2</p>
1B	 <p>Photo 1B-1</p>	 <p>Photo 1B-2</p>
1C	 <p>Photo 1C-1</p>	 <p>Photo 1C-2</p>

<p>1D</p>	 <p>Photo 1D-1</p>	 <p>Photo 1D-2</p>
<p>1E</p>	 <p>Photo 1E-1</p>	 <p>Photo 1E-2</p>
<p>1F</p>	 <p>Photo 1F-1</p>	 <p>Photo 1F-2</p>
<p>1G – no field access. Aerial image showing no defined channel</p>	 <p>Photo 1G-1</p> <p>Site boundary</p> <p><i>Juncus acutus</i></p> <p>Google</p>	

<p>1H</p>	 <p>Photo 1H-1</p>	 <p>Photo 1H-2</p>
<p>1I</p>	 <p>Photo 1I-1</p>	 <p>Photo 1I-2</p>
<p>1J</p>	 <p>Photo 1J-1</p>	 <p>Photo 1J-2</p>

Reach 2A: This second order creek emerged from two pipe culverts beneath Elizabeth Drive. A short channel had been trenched into the paddock to allow water to flow efficiently away from the road verge. This section of channel was not classed as a 'river' because it was artificially created, held no aquatic or riparian value and its two first order tributaries upslope of the study boundary did not constitute 'rivers'. From about 30 m from the road, the trench transitioned into a grassy depression to a large dam, then another two online dams. Upstream of the third dam, the creek was a grassy depression in a grazed paddock which may pool water in times of heavy rain, but probably as dam tailwater. The riparian zone and drainage line was cleared paddock and had no defined bed, banks or geomorphic processes until downstream of the third dam. Here the channel was 2 - 3 m wide and lined with *Juncus acutus*, *Melaleuca styphelioides* and *Casuarina cunninghamiana* (She-oak). Hares and a fox were seen along this reach of the channel, along with pugging from horses accessing dams. Near the confluence with Cosgroves Creek, the banks became steeper and were undercut in some sections. Woody debris in the channel was abundant. A floodgate in a state of disrepair was in place near Cosgroves Creek, and a marked

difference in density and species of riparian vegetation was noted downstream of this floodgate. Reach photos are provided below.



Photo 2A-1

Facing upstream – no defined channel



Photo 2A-2

Facing downstream – no defined channel



Photo 2A-3

Beginning of channel – downstream of dam



Photo 2A-4

Facing downstream - Large woody debris in channel



Photo 2A-5

Facing upstream – near Cosgroves Creek



Photo 2A-6

Facing downstream – note floodgate at downstream extent of channel

Reach 2B: The defined channel started approximately 80 m downstream of the dam in the middle of the Study Area where first orders 1C and 1D would enter. The channel was on average 6 - 8 m wide and dry. The banks were lined with both native *Juncus* spp. and invasive *Juncus acutus*. The small banks were moderately eroded on the outer bends. The benthic substrate was predominately silt, with evidence of heavy trampling by livestock. The channel flowed through two small mostly-dry dams that have been excluded from the top of bank mapping and replaced with an expected channel size based on the channel width upstream and downstream of the dams. When suitable rainfall occurs, these dams would provide limited fish and frog habitat within the creek. Prior to joining Cosgroves Creek, the banks became steep, eroded and lined with *C. cunninghamiana* (She-oak). The riparian zone was predominately composed of grazed paddocks, with scattered mature She-oak and Eucalypts. Reach photos are provided below.



Photo 2B-1



Photo 2B-2

Facing upstream – no defined channel

Facing downstream – no defined channel



Photo 2B-3



Photo 2B-4

*Facing upstream – channel defined
acutus*

Facing downstream – channel lined with Juncus

Reach 3A: This stretch of Oaky Creek had a channel width of mostly 2 - 4 m and was dry. The creek entered the Study Area through a twin box culvert, underneath Elizabeth Drive. About 10 m downstream from the culvert was a wire fence which extended across the creek, catching debris from upstream. The sediment in the channel was predominately silt with some gravel. Both banks were steep and undercut. The channel was lined with native species, including *Melaleuca linariifolia*, *M. styphelioides*, and *C. cunninghamiana*, with sections of dense exotic shrubs and groundcover including *Lantana camara*, *Tradescantia fluminensis* (Trad) and *Rubus fruticosus* (Blackberry). There was no habitat for fish, frogs

or wading birds at the time of the survey. DPI Fisheries map this reach as key fish habitat (KFH). Reach photos are provided below.



Photo 3A-1

Facing upstream



Photo 3A-2

Facing downstream

Reach 4A: Cosgrove Creek meanders along the western Study Area boundary and was an average of 6 - 8 m wide, with some wider braided sections heading downstream. The stretch of channel surveyed consisted of fine sediment, with some gravel and dense instream woody debris. In the upstream reach there were some long (up to 30 m) stagnant pools, that had numerous *Cyprinus carpio* (Carp) and *Gambusia holbrooki* (Mosquitofish). No native fish or frog species were observed. DPI Fisheries map this reach as KFH. Two *Pseudechis porphyriacus* (Red-bellied Black Snake) were also seen in these pools. There was a small patch (2 m x 1 m) of *Typha* sp. (Cumbungi) in the largest pool. No other aquatic vegetation was observed. Downstream of where 2A joined, the creek was dry. Large trees had fallen into the creek and would naturally dam the water in times of flow.

The banks along the entire reach were steep, up to 2 m, with severe undercutting on the inner bends. Upstream, the banks were lined with a mix of native trees (*Melaleuca* spp. and *C. cunninghamiana*) and exotic species, including *Bidens pilosa* (Cobblers Peg), *L. camara*, *Lycium ferocissimum* (African Boxthorn), *T. fluminensis* (Trad) and *R. fruticosus* (Blackberry). Moving downstream, north of 1A, the banks were lined with predominately native trees of varying age classes, and there were fewer exotics species present. Reach photos are provided below.



Photo 4A-1

Facing upstream



Photo 4A-2

Facing downstream



Shallow stagnant pool



Fence crossing creek

Reach 4B: Badgerys Creek runs along the north-eastern boundary of the Study area, with an average width of 3 – 5 m. While the majority of this reach of Badgerys Creek is not within the boundary of the Study Area, the riparian corridor, as per a fourth order stream, extends into the Study area. The vast majority of the creek that was surveyed was dry, with only two small pools of stagnant water observed, each no more than 5 m in length. No aquatic fauna was seen in these pools. One *P. porphyriacus* (Red-bellied Black Snake) was seen on the bank of the creek. Due to the riparian canopy connectivity, bird habitat was considered to be good, but the lack of aquatic vegetation meant that the reach of the creek surveyed was unlikely to be good habitat for frog species.

The channel was comprised mainly of silt with some sandy deposits. Woody debris was abundant, surrounded by a dense layer of native *Casuarina* needles in the channel. This debris would likely provide excellent fish habitat when the river is in flow. DPI Fisheries map this reach as KFH. Banks were quite steep and heavily undercut in some sections, with a height of up to 2 m. *Typha* sp. was the only native aquatic species observed in the channel in two isolated patches, with the remainder of the vegetation growing within the channel being herbaceous weed species including *B. pilosa* (Cobbler's Peg) and *Onopordum acanthium* (Scotch Thistle). The riparian vegetation was predominantly *C. cunninghamiana* (She-oak) of varying ages with exotic groundcover and shrub species dominant along the reach. Weed species present included *Anredera cordifolia* (Madeira Vine), *T. fluminensis* (Trad), *Cestrum parqui* (Green Cestrum) and a large patch of *R. fruticosus* (Blackberry) that covered an area of approximately 15 m². Reach photos are provided below.



Facing upstream



Facing downstream



Photo 4B-3
Banks lined with Casuarina



Photo 4B-4
Typha occurs where canopy missing

4 Constraints

In total, there is 20.1 ha of riparian corridor along validated watercourses in the Study Area. Development, except road crossings, within the inner 50% of the VRZ is not consistent with NRAR guidelines (**Table 2** above). Development and encroachment in the outer 50 % of the VRZ is consistent with the guidelines, if a 1:1 riparian offset compensation is applied elsewhere on site using the averaging rule (**Figure 2** above). For example, creating an Asset Protection Zone in the outer 50 % of the VRZ is a non-riparian use and would require offsetting elsewhere. The averaging rule should generally be applied to land already lacking tree cover (the majority of the outer 50 % VRZ was cleared) and seek to preserve natural vegetation.

5 Recommendations and opportunities

None of the first order creeks in the Study Area met the definition of a ‘river’ under the WM Act as they had no defined bed, banks or geomorphic processes. Subject to confirmation from NRAR, these reaches would have no waterfront land with respect to the WM Act, and as such no riparian constraints. Most of 2A (≈ 250 m) did not meet the definition of a ‘river’, and upon consultation with NRAR, the upstream section of this creek would have no waterfront land. This would result in 2A starting downstream of the third dam (**Figure 5**).

All other creeks, 2B, 3A (Oak Creek), 4A (Cosgroves Creek), and 4B (Badgerys Creek), in and bordering the Study Area met the definition of a ‘river’, with a defined bed, banks and some form of aquatic habitat. Works are proposed within 40 m of these creeks, so a CAA would be required for each development stage. For a streamlined CAA assessment, NRAR requires the CAA application to be in accordance with the riparian corridor matrix (**Table 2** above) and the *Guidelines for Controlled Activities on waterfront land*. The objectives for riparian corridor management should also be met. The objectives are as follows:

- Seek to maintain or rehabilitate the RC/VRZ with fully structured native vegetation (in accordance with **Table 1** above);

- Minimise the number of creek crossings and provide perimeter road separation development from the RC/VRZ;
- Locate services and infrastructure outside of the RC/VRZ. If services must cross the waterway, provide an easement to support multiple services and/or use road crossings where possible; and
- Treat stormwater run-off before discharging into the RC/VRZ.

The VRZs of 2A and 2B were primarily pasture and had minimal native riparian vegetation. The outer 50 % of the VRZ was also cleared for 3A, 4A and 4B. It is recommended that these be fully rehabilitated with native vegetation, in accordance to a Vegetation Management Plan, to restore functioning native communities. This should also eventually improve instream habitat by providing structure, shading, and bank stability.

As per the masterplan (OMA, June 2018), the proposed development grid encroaches the outer 50 % of the riparian corridor of Cosgroves Creek (560 m²), shown in red below (**Figure 7** and **Figure 8**). Following the *Guidelines for Controlled Activities on waterfront land*, ELA recommends an offset area, shown in green, to preserve the average width of the riparian corridor and retain native vegetation that exists along Cosgroves Creek. This offset area presents the opportunity for rehabilitation to a native vegetation community. During detailed masterplanning, opportunities to link riparian zones to other patches of restored vegetation on the site will be investigated.

The preliminary masterplan also encroaches the outer 50 %, and inner 50 % and creek bed of the riparian corridor along reach 2B (855 m² and 698 m², respectively) (**Figure 7** and **Figure 9** below). Although the preliminary design is currently impacting this reach and does not conform with the riparian guidelines, detailed design for the Northern Gateway development can be designed in a way that will not encroach on the VRZ or channel and the riparian corridor can be fully retained and rehabilitated. In the event the final design does not meet the guidelines, a merit based assessment would be required by NRAR.

An alternate location for the future M9/M12 road corridor is also proposed in the north of the Study Area which will require crossing over reaches 4A, 4B and 2B. Further detailed impact assessment to riparian values will be likely be required once infrastructure location and design has been refined and approval pathways for the development have been determined.

Creeks 3A, 4A and 4B are mapped as key fish habitat (KFH) under the NSW *Fisheries Management Act 1994* (FM Act). One of the key objectives of the FM Act is to conserve KFH. If the proponent is going to work within the bed or banks of these creeks, NRAR is required to seek approval from DPI Fisheries before issuing a CAA.

6 Conclusion

In total, there is 20.1 ha of riparian corridor along validated watercourses in the Study Area, primarily bordering the eastern and western extent of the Site. Considering none of the mapped first order creeks in the Study Area met the definition of the of a 'river' under the WM Act, the proposed masterplan design will have minimal impacts to riparian areas. The masterplan layout is also capable of accommodating rehabilitated riparian corridors along Cosgrove and Badgerys Creeks.

The alternate location for the future M9/M12 road corridor will require crossing over reaches 4A, 4B and 2B. Further detailed impact assessment to riparian values will be likely be required once infrastructure location and design has been refined and approval pathways for the development have been determined.

References

Natural Resources Access Regulator (NRAR) 2018. *Controlled activities on waterfront land—Riparian corridors*. NSW Department of Industry. Available online:

https://www.industry.nsw.gov.au/_data/assets/pdf_file/0004/156865/NRAR-Guidelines-for-controlled-activities-on-waterfront-land-Riparian-corridors.pdf

Appendix A

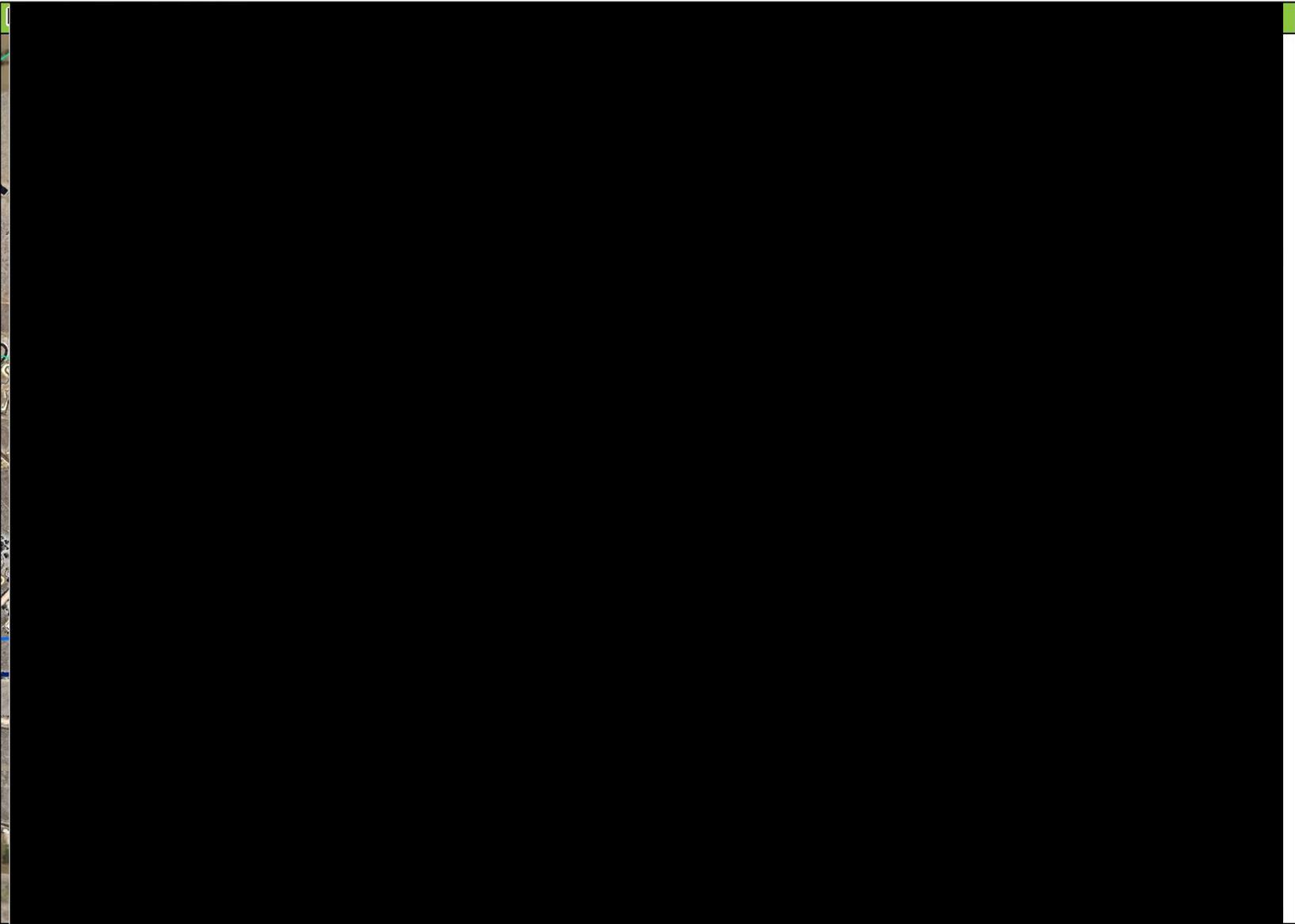


Figure 7: Masterplan and riparian constraints (see next figures for closer scale)



Figure 8: Offset recommendations for reach 4A

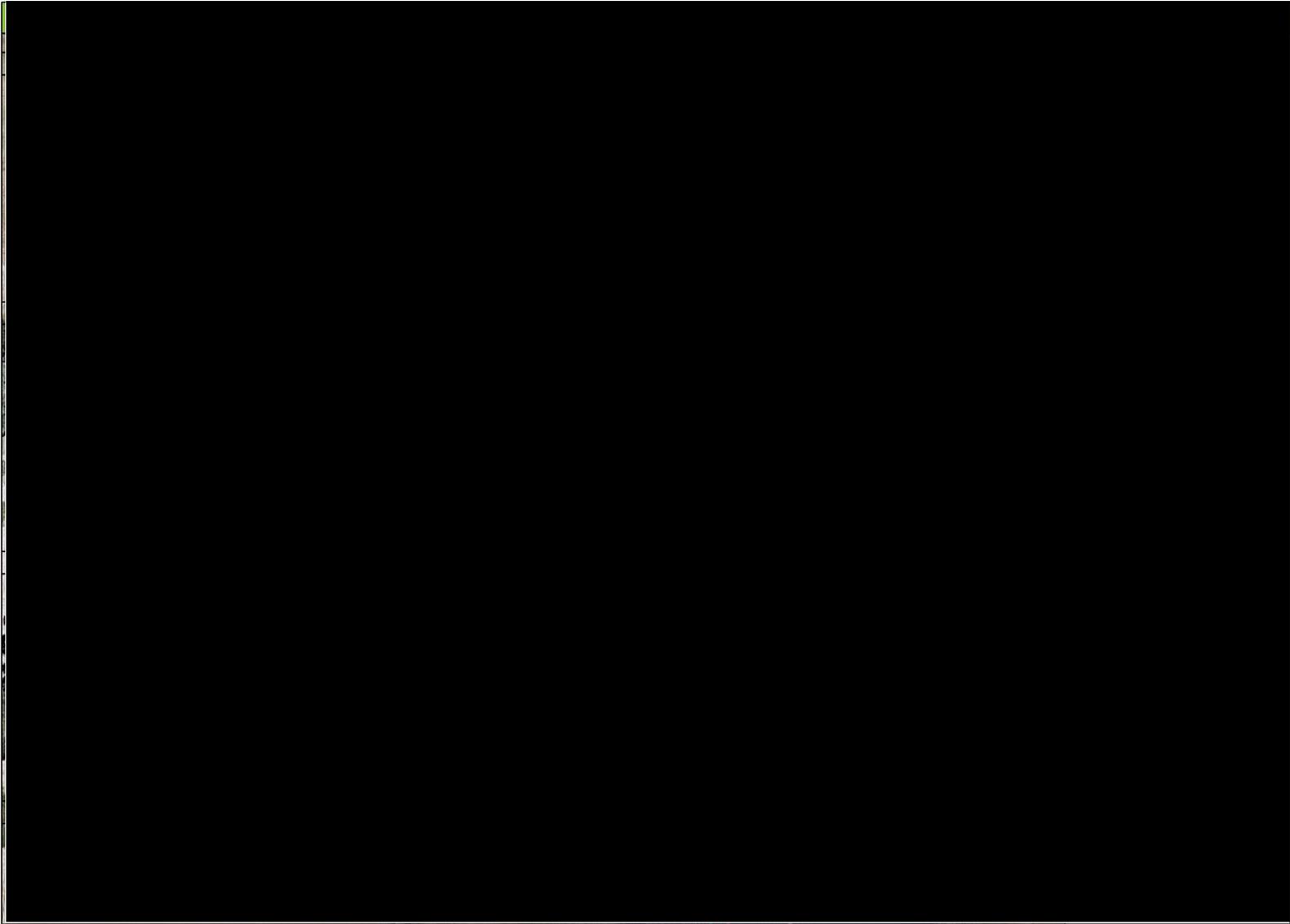


Figure 9: Areas that do not meet the riparian guidelines and encroachment on reach 2B

eco
logical
AUSTRALIA



HEAD OFFICE

Suite 2, Level 3
668-672 Old Princes Highway
Sutherland NSW 2232
T 02 8536 8600
F 02 9542 5622

CANBERRA

Level 2
11 London Circuit
Canberra ACT 2601
T 02 6103 0145
F 02 9542 5622

COFFS HARBOUR

22 Ray McCarthy Drive
Coffs Harbour NSW 2450
T 02 6651 5484
F 02 6651 6890

PERTH

Level 1, Bishop's See
235 St Georges Terrace
Perth WA 6000
T 08 9227 1070
F 02 9542 5622

MELBOURNE

Level 1, 436 Johnston St
Abbotsford, VIC 3076
T 1300 646 131
F 02 9542 5622

SYDNEY

Suite 1, Level 1
101 Sussex Street
Sydney NSW 2000
T 02 8536 8650
F 02 9542 5622

NEWCASTLE

Suites 28 & 29, Level 7
19 Bolton Street
Newcastle NSW 2300
T 02 4910 0125
F 02 9542 5622

ARMIDALE

92 Taylor Street
Armidale NSW 2350
T 02 8081 2685
F 02 9542 5622

WOLLONGONG

Suite 204, Level 2
62 Moore Street
Austinmer NSW 2515
T 02 4201 2200
F 02 9542 5622

BRISBANE

Level 5, 12 Creek Street
Brisbane QLD 4000
T 07 3503 7192
F 02 9542 5622

HUSKISSON

Unit 1, 51 Owen Street
Huskisson NSW 2540
T 02 4201 2264
F 02 9542 5622

NAROOMA

5/20 Canty Street
Narooma NSW 2546
T 02 4302 1266
F 02 9542 5622

MUDGEES

Unit 1, Level 1
79 Market Street
Mudgee NSW 2850
T 02 4302 1234
F 02 6372 9230

ADELAIDE

2, 70 Pirie Street
Adelaide SA 5000
T 08 8470 6650
F 02 9542 5622

1300 646 131

www.ecoaus.com.au