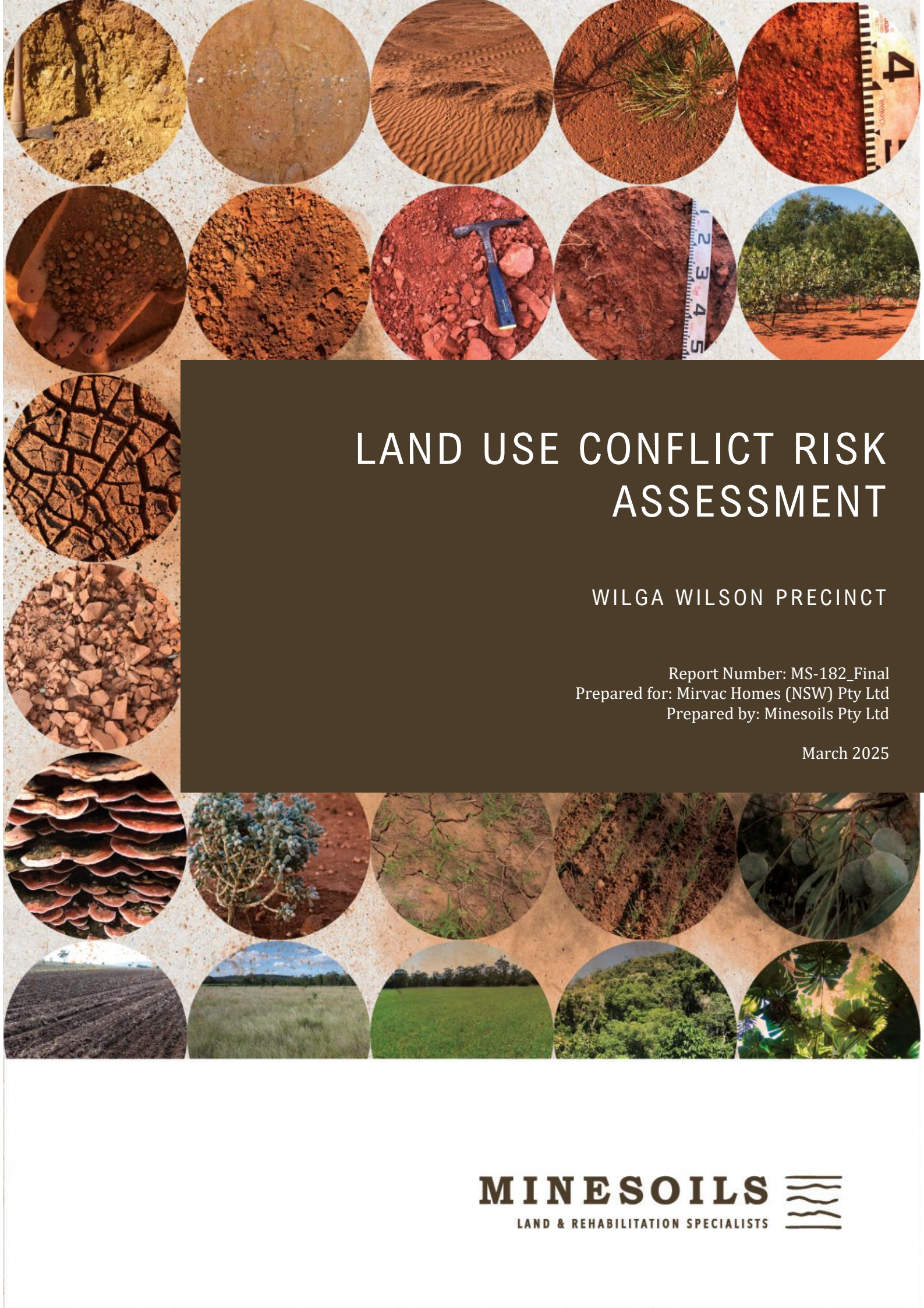




LAND USE CONFLICT RISK ASSESSMENT

WILGA WILSON PRECINCT

Report Number: MS-182_Final
Prepared for: Mirvac Homes (NSW) Pty Ltd
Prepared by: Minesoils Pty Ltd

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DOCUMENT CONTROL

Reference	Date	Prepared by	Approved
MS-182_ Draft 1	27 March 2025	Jake Iskenderian, Matt Hemingway	Matt Hemingway
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1. INTRODUCTION

1.1 OVERVIEW

Minesoils Pty Ltd (Minesoils) was engaged by Mirvac Homes (NSW) Pty Ltd (Mircvac) to conduct a land use conflict risk assessment (LUCRA) to support a Planning Proposal for the Wilga Wilson Precinct (herein referred to as 'the Project'), located in Ingleside, New South Wales (refer **Figure 1**).

1.2 THE PROJECT

The Project is understood to comprises the following elements:

- Provide approximately 536 dwellings
- Provide housing choices ranging from apartment living, detached residential dwellings and terrace houses
- Protect more than 6.8 Ha of conservation areas
- Provide more than 3500 sqm of Local Park

All the proposed works associated with the Project will be contained on land which lies within an area zoned as RU2 – Rural Landscape. The planning proposal will seek rezoning to C2 - Environmental Conservation. R3 - Medium Density Residential and RE1 - Public Recreation.

1.3 THE STUDY AREA

The study area is located in Northern Beaches Local Government Area (LGA), in the suburb of Ingleside, covering an area of approximately 28.8 ha. The study area is bounded by Powderworks Road to the east, Powderworks Road and Wilson Avenue to the north, Wilga Street to the south and a Golf Course to the west (refer **Figure 2**).

The Wilga Wilson Precinct consists of a mix of land uses and character. The study area is adjacent to two Golf Courses and within 1km proximity to Narrabeen and Warriewood to east and 1km to Mona Vale Road and the Baha'i Temple to the north.

The Study Area has been largely cleared in the past and has a history of limited livestock grazing, horticulture, light industrial use and residential use.

1.4 SCOPE OF WORK

The Minesoils scope of works is to address the following requirement requested by Northern Beaches council:

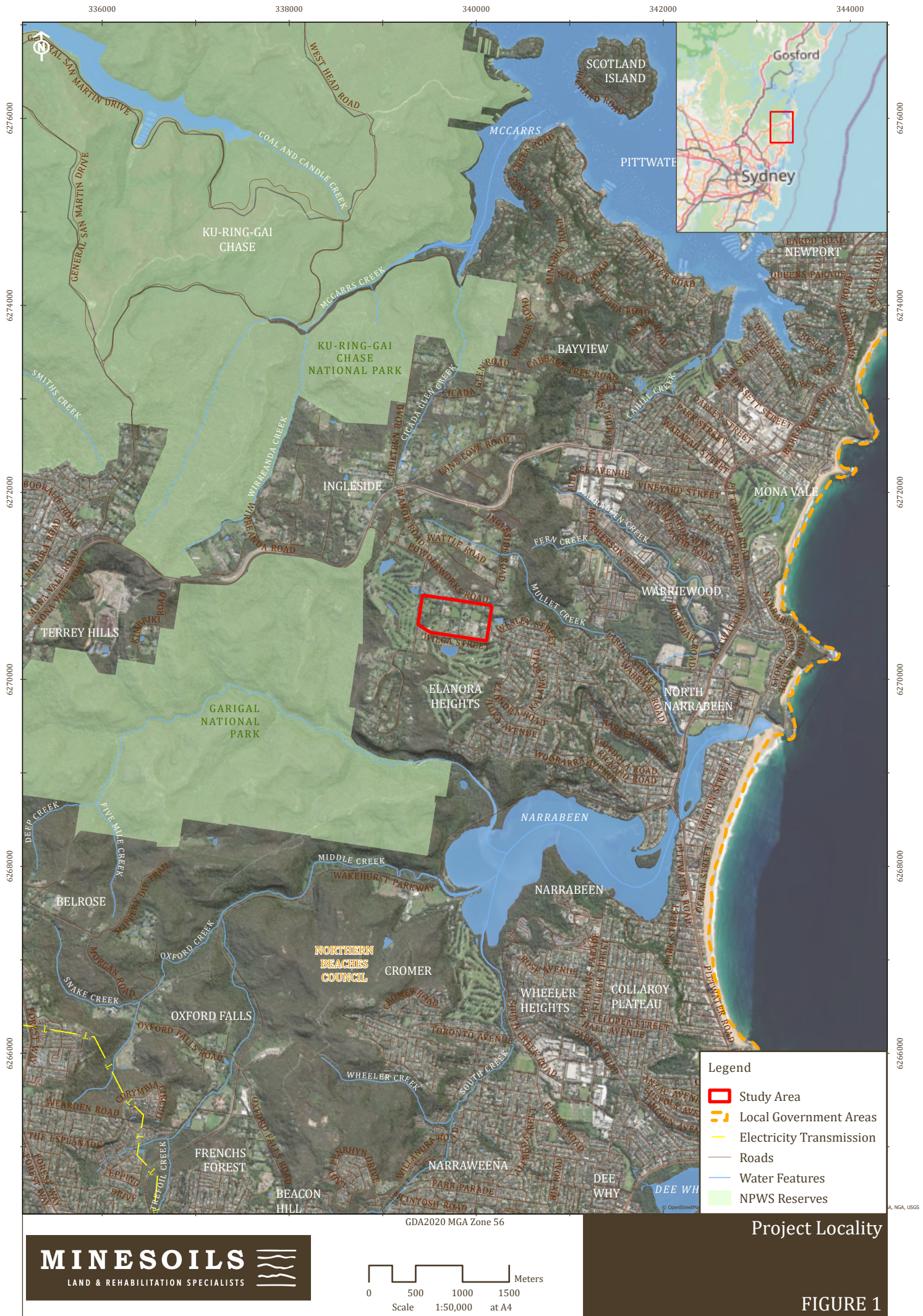
A Land Use Conflict Risk Assessment (LUCRA) is required as part of the planning proposal. The LUCRA must identify and assess the potential for land use conflict to occur between neighbouring land uses, include a biosecurity risk assessment with required mitigation measures if relevant and be undertaken with regard to the LUCRA Guide.

In addition, the NSW Department of Primary Industries and Regional Development, Agriculture and Biosecurity, also requested a LUCRA be undertaken, and that it be informed by the preparation of a biosecurity risk assessment.

The purpose of this report is to provide the findings of LUCRA undertaken in accordance with the NSW Department of Primary Industries (2011) *Land and Use Conflict Risk Assessment Guide* that considers any potential land use conflicts between the proposed land use and adjoining land uses. The full LUCRA is included as **Appendix 1**.

A biosecurity management risk assessment, which informs the LUCRA, was undertaken in accordance with the Australian Government Department of Agriculture, Fisheries and Forestry *Biosecurity Risk Management Template*, and the Department of Primary Industries (DPI) *NSW Biosecurity and Food Safety Strategy 2022-2030* (2022). The biosecurity management risk assessment is included as **Appendix 2**.





2 SITE CHARACTERISTICS AND LAND USE

2.1 STUDY AREA

The Study Area is currently zoned as RU2 Rural Landscape, and is made up of multiple lots with a variety of different uses including horticulture (refer **Figure 3**). The regional land use mapping presented in **Figure 3** uses latest available data dated to 2017, however the following Study Area description based on a site inspection undertaken by Minesoils in March 2025 is more accurate.

The Study Area was determined to be an erosionally stable landform with subtle undulations, and has been highly disturbed in the past by land clearing, with some remnant native vegetation retained in pockets within.

An unnamed watercourse (a 1st order stream) lies within the study area starting in the southwestern corner, joining another unnamed watercourse (a 2nd order stream) which runs through the study area starting from the northwestern corner and exiting through the eastern boundary, eventually joining up with Mullet Creek. Both creeks form part of the Narrabeen Lagoon Catchment Area.

Along the southern and eastern boundaries of the Study Area exists a number of commercial nurseries/horticultural premises. These premises make up approximately 9ha (~31%) of the site and manage/cultivate both native and exotic plant species, varying from small shrubs to large trees, including ornamental plants. A bee farm exists within one horticultural premise to the south and a small vegetable farm producing tomatoes, cucumbers and beans is situated in another premise to the east. Contained within some of these commercial premises are light industry, where areas are used as storage yards, and stocking landscape supplies e.g. sands and aggregates. Approximately 10ha (~35%) of the site is made up of managed vacant bushland/grassland. These are mainly situated within the eastern portion of the site and in some northern lots. A small portion of the site is made up of residential premises, including detached houses scattered throughout and a retirement village situated at the southeastern corner. To the north, a property used a storage facility containing boats, trailers and camper vans is situated on one lot. The Study Area is also home to a culturally significant landmark, a Church and Chapel, which is to be retained in the proposed development.

2.2 STUDY AREA SURROUNDS

The Study Area is bounded by Powderworks Road to the east, Powderworks Road and Wilson Avenue to the north, Wilga Street to the south and a golf course to the west, and is surrounded by a variety of land uses.

Immediately adjacent to the site to the north lands zoned RU2 Rural Landscape. These generally consist of light industry, nurseries/horticulture, residential and small business e.g. storage and removal. A council depot is also located to the immediate north of the Study Area, off Powderworks Road. To the northeast of the site are also lands zoned RU2 Rural Landscape, consisting of a dog day care and vacant managed land containing a water body. To the southeast are lands zoned R2 Low Density Residential containing short narrow residential lots. To the immediate south and west of the site are lands zoned RE2 Private Recreation consisting of the Elanora and Monash Country Club golf courses. Finally, to the southwest are lands zoned R5 Large Lot residential consisting of large rural residential properties with hobby stock.

Although the study area is bordered predominantly by golf courses and residential areas, it was observed intensive plant horticulture are being undertaken within the immediately adjacent lands to the north of the Study Area (as shown on **Figure 3**) and the wider locality. These consist of wholesale and commercial nurseries: New Leaf Nursery, Pittwater Nursery, PowderWorks Nursery and Indigo Native Nursery.

As shown on **Figure 3**, land use within the Study Area surrounds is broadly characterised as residential and farm infrastructure, services and other minimal use.





Plate 1: Wholesale nursery within study area containing large trees.



Plate 2: Wholesale nursery within study area containing shrubs and small trees.



Plate 3: Vegetable enterprise within study area.



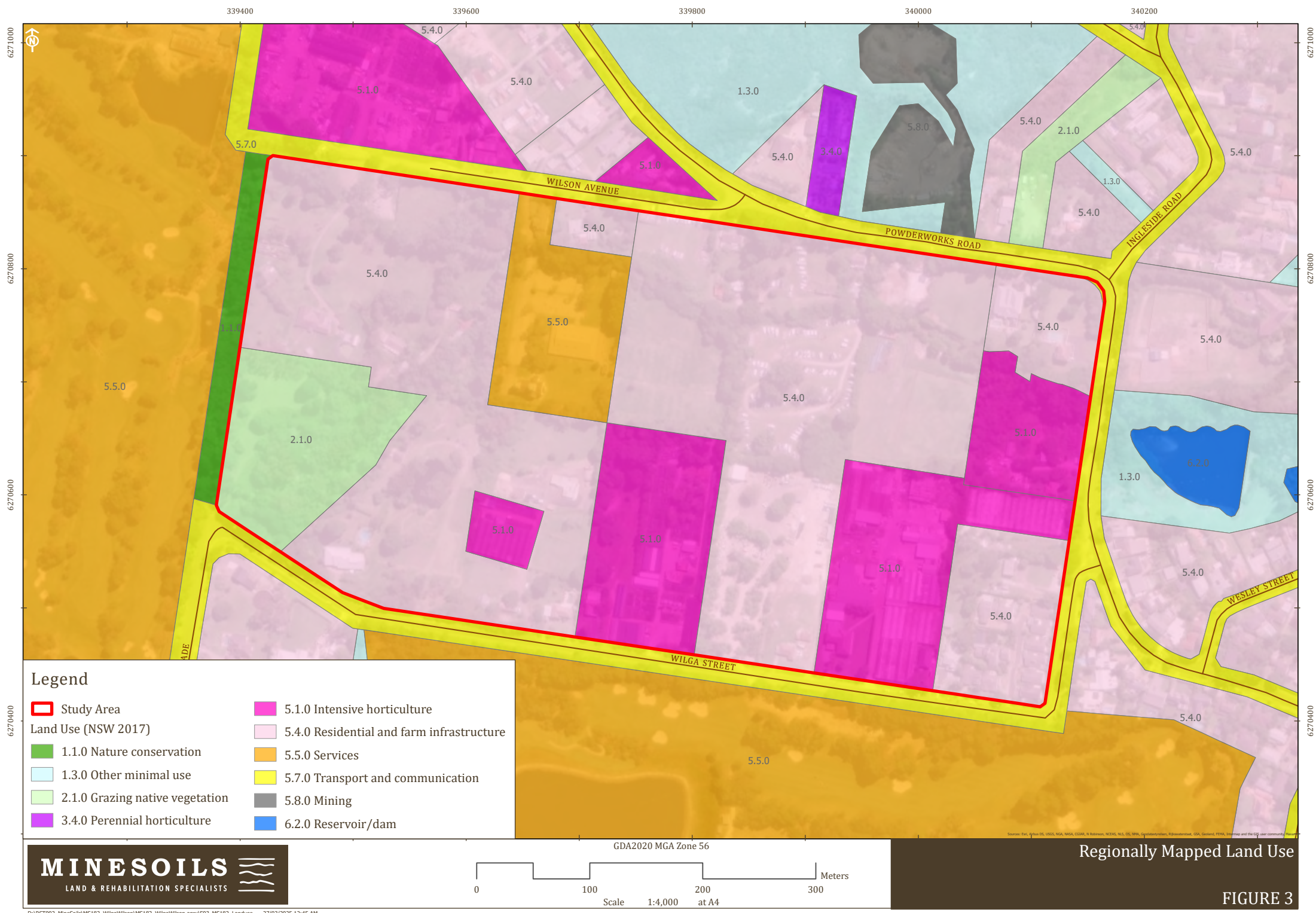
Plate 4: Managed vacant land within study area.



Plate 5: Property used for storage within study area.



Plate 6: Rural residential containing hobby stock within locality.



3 LAND USE CONFLICT RISK ASSESSMENT

3.1 OVERVIEW

A LUCRA is a system to identify and assess the potential for land use conflict to occur between neighbouring land uses. It helps land managers and consent authorities assess the possibility for and potential level of future land use conflict. LUCRA aims to:

- Accurately identify and address potential land use conflict issues and risk of occurrence before a new land use proceeds or a dispute arises.
- Objectively assess the effect of a proposed land use on neighbouring land uses.
- Increase the understanding of potential land use conflict to inform and complement development control and buffer requirements.
- Highlight or recommend strategies to help minimise the potential for land use conflicts to occur and contribute to the negotiation, proposal, implementation and evaluation of separation strategies.

Land use conflicts occur when one land user is perceived to infringe upon the rights or impact the values or amenity of another. In rural areas land use conflicts commonly occur between agricultural and residential uses. However, land use conflicts can also occur between different agricultural enterprises and other primary industries.

Rural amenity issues are the most common land use conflict issues, followed by environmental protection issues. Rural amenity issues include impacts to air quality due to agricultural and rural industry (odour, pesticides, dust, smoke and particulates); use and enjoyment of neighbouring land e.g., noise from machinery; and visual amenity associated with rural industry e.g., the use of netting, planting of monocultures and impacts on views.

Environmental protection issues include soil erosion leading to land and water pollution, clearing of native vegetation, and stock access to waterways.

Direct impacts from neighbouring land uses on farming operations can also cause conflict, such as: harassment of livestock from straying domestic animals; trespass; changes to storm water flows or water availability; and poor management of pest animals and weeds.

3.2 APPROACH

This LUCRA compares and contrasts the Project against adjoining/surrounding land uses and activities for real or perceived incompatibility and conflict issues based on the risks and impacts of the project, and the mitigation measures and controls available to the Project.

This LUCRA has been undertaken with due regard to and in accordance with the NSW Government - Department of Primary Industry's 'Land Use Conflict Risk Assessment Guide' (DPI, 2011).

Each potential conflict between the Project and adjacent land use, or wider locality, has been assessed and given a risk ranking based on a probability and consequence. Performance targets will be determined via management plans specified by the EIS (and relevant specialist assessments) and development consent conditions (if approved). Monitoring will be undertaken in accordance with those management plans. Performance targets presented within this LUCRA are indicative.

In addition, the current status of rural land use in the area is not considered likely to change during the life of the Project. For example, due to the location of the Project Area relative to major regional towns, it is considered unlikely that surrounding properties will undergo subdivision to accommodate residential or small-block rural developments. Accordingly, it is not expected that future changes to land use will occur that will generate new land use conflicts in addition to those identified.



3.3 METHODOLOGY

A risk ranking matrix (**Table 1**) provided by the DPI (2011) is used to rank the identified potential land use conflicts. The risk ranking matrix assesses the economic, social and environmental impacts according to the probability of occurrence and consequence of the impact.

Table 1: Risk Ranking Matrix

Consequence	Probability				
	A	B	C	D	E
Level 1	25	24	22	19	15
Level 2	23	21	18	14	10
Level 3	20	17	13	9	6
Level 4	16	12	8	5	3
Level 5	11	7	4	2	1

(Source: DPI, 2011)

The risk ranking matrix yields a risk ranking from 25 to 1. It covers each combination of five levels of ‘probability’ (a letter A to E as defined in **Table 2**) and 5 levels of ‘consequence’, (a number 1 to 5 as defined in **Table 3**) to identify the risk ranking of each impact. For example, an activity with a ‘probability’ of D and a ‘consequence’ of 3 yields a risk rank of 9. A rank of 25 is the highest magnitude of risk; a highly likely, very serious event. A rank of 1 represents the lowest magnitude of risk; an almost impossible, very low consequence event. Low risk is a ranking score of 10 or below.

Table 2: Probability Definitions

Level	Descriptor	Description
A	Almost Certain	Common or repeating occurrence.
B	Likely	Known to occur or it has happened.
C	Possible	Could occur or ‘I’ve heard of it happening.’
D	Unlikely	Could occur in some circumstances but not likely to occur.
E	Rare	Practically impossible or ‘I’ve never heard of it happening.’

(Source: DPI, 2011)



Table 3: Consequence Definitions

	Description	Example of Implications
Level 1		
Severe	- Severe and/or permanent damage to the environment - Irreversible - Severe impact on the community - Neighbours are in prolonged dispute and legal action involved	- Harm or death to animals, fish, birds or plants - Long term damage to soil or water - Odours so offensive some people are evacuated or leave voluntarily - Many public complaints and serious damage to Council's reputation - Contravenes Protection of the Environment & Operations Act and the conditions of Council's licences and permits. Almost certain prosecution under the POEO Act
Level 2		
Major	- Serious and/or long-term impact to the environment - Long-term management implications - Serious impact on the community - Neighbours are in serious dispute	- Water, soil or air impacted, possibly in the long term - Harm to animals, fish or birds or plants - Public complaints. Neighbour disputes occur. Impacts pass quickly - Contravenes the conditions of Council's licences, permits and the POEO Act - Likely prosecution
Level 3		
Moderate	- Moderate and/or medium-term impact to the environment and community - Some ongoing management implications - Neighbour disputes occur	- Water or soil known to be affected, probably in the short to medium-term (e.g. 1-5 years) - Management could include significant change of management needed for agricultural enterprises to continue
Level 4		
Minor	- Minor and/or short-term impact to the environment and community - Can be effectively managed as part of normal operations - Infrequent disputes between neighbours	- Theoretically could affect the environment or people but no impacts noticed - No complaints to Council - Does not affect the legal compliance status of Council
Level 5		
Negligible	- Very minor impact to the environment and community - Can be effectively managed as part of normal operations - Neighbour disputes unlikely	- No measurable or identifiable impact on the environment - No measurable impact on the community or impact is generally acceptable

(Source: DPI, 2011)



3.4 FINDINGS SUMMARY

The following land use conflict risk items were identified for the Project:

- Construction noise and vibration
- Construction air quality
- Construction traffic and access
- Livestock within locality
- Construction amenity
- Construction biosecurity
- Agriculture potential
- Water quality
- Waste management
- Flora and fauna
- Heritage values
- Visual amenity
- Traffic and access
- Noise
- Air quality
- Personnel
- Property values
- Light industry in locality

Within these risk item categories, 18 potential conflicts were considered as part of the LUCRA. The mitigation measures and controls outlined in this assessment reduce the level of risk for the majority of considered potential risks with complaints or conflict being managed within normal operations. However, a number of items of potential conflict remain a moderate risk for land use conflict. The moderate potential conflicts are summarised in **Table 4**. The full LUCRA is presented as **Appendix 1**.

Table 4: LUCRA Moderate Risk Items Summary

Potential Conflict	Conflict Risk
Construction biosecurity – land users in the locality may be concerned about weed, plant pest, plant disease or pest animal introduction from increased volume of vehicles and workers from out of area during construction and potential for spread to neighbouring rural lands.	Moderate
Visual amenity – stakeholders in the locality who wish to maintain views of the existing rural landscape may be concerned about the change in visual amenity resulting from the Project.	Moderate
Traffic and access – existing residents and land users in the locality may be concerned about an increase in traffic volume and impacts to accessibility on local roads as a result of the proposed development. This may cause conflict by increasing travel times and limiting access.	Moderate
Property values – existing landowners/users in the locality may be concerned about potential devaluation of properties due to the development.	Moderate



4 DISCUSSION

The LUCRA identifies four (4) potential conflicts remaining as a moderate risk. Each of the four (4) conflicts relate to immediate neighbours as well as the broader locality. Project design considerations and consultation undertaken to date has restricted the occurrence of any high conflict risk items.

Construction biosecurity is addressed by a detailed Biosecurity Management Risk Assessment included in **Appendix 2**. This assessment determined biosecurity risk as a result of the Project to be low due to the limited sensitive agricultural operations in proximity to the Study Area, the existing high volume of vehicles and people visiting the locality from out of the area (noting the existing direct and unrestricted exposure of wholesale and commercial nurseries to visitors), as well as the standard mitigation measures relating to biosecurity available to the Project. Nonetheless, despite the low risk biosecurity may remain a moderate risk of perceived land use conflict with stakeholders due to the presence of intensive plant horticulture (i.e., nurseries) to the north of the study area.

For the remainder of the moderate risk conflicts, these items would remain an accepted risk of land use conflict should the development proceed, noting that:

- The project will adhere to the DA conditions of consent which will ensure compliance with standard construction management and appropriate mitigation measures.
- Ongoing management of the site and consultation with stakeholders, including relevant authorities, will identify and address concerns as far as practical if they arise.

With these observations in mind, an acceptable level of land use conflict can be maintained by the Project with respect to the wider locality and community, and conflicts with immediate neighbours can be avoided or managed as part of standard Project operations.



5 REFERENCES

NSW Department of Primary Industries (2011) *Land and Use Conflict Risk Assessment Guide*.

NSW Department of Primary Industries (2022) *NSW Biosecurity and Food Safety Strategy 2022-2030*.



Appendix 1

Land Use Conflict Risk Assessment



Conflict Category	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Construction Noise and Vibration	Increased noise and vibration generated by construction activities and heavy vehicle movements may be perceived as nuisance to existing residential land users within the locality.	C	4	8	DA conditions of consent will ensure compliance with standard construction management and mitigation measures including hours of operations which is anticipated to reduce the risk of conflict related to noise impacts on neighbouring residents. Construction activities are short term. The noise impacts of the Powderworks Road reduces the acoustic amenity of adjoining properties and the public domain. Ongoing management of the site and consultation with stakeholders will identify and address concerns if they arise.	D	4	5	Construction, earthworks and the project development will be undertaken in accordance with conditions of consent. Any complaints from neighbours can be addressed within normal construction and on-going site operational management procedures.
Construction Air Quality	Residents and land users in the locality may be concerned that dust/odour generated by construction activities, as well as increased pollution from increased vehicle movements, may cause nuisance and/or have adverse health implications for existing residents within the locality.	C	4	8	DA conditions of consent will ensure compliance with standard construction management and mitigation measures including implementation of soil erosion and sedimentation control plans, traffic and waste management plans and hours of operations which is anticipated to reduce the risk of conflict related to nuisance dust/odour and vehicle and plant emissions impacts on neighbouring residents. Construction activities are short term. Ongoing management of the site and consultation by the site managers with stakeholders will identify and address concerns if they arise.	D	4	5	Construction, earthworks and the project development will be undertaken in accordance with conditions of consent. Any complaints from neighbours can be addressed within normal construction and on-going site operational management procedures.
Construction Traffic and Access	Residents and land users in the locality may be concerned about an increase in traffic volume and impacts to accessibility on local roads as a result of increased vehicle movements during construction activities. This may cause conflict by interacting with increasing travel times and limiting access.	C	4	8	DA conditions of consent will ensure compliance with standard construction management and appropriate mitigation measures including the traffic impact assessment. Liaison with relevant road authorities (ie. Council and Transport for NSW) regarding final design and road capacity will be undertaken. Level change southwest of the site is to be removed to avoid impacting vehicle access. Ongoing management of the site and consultation with stakeholders will identify and address concerns if they arise.	D	4	5	No complaints from land users in locality regarding impacts to transport activities or increased travel times.

Conflict Category	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Livestock within Locality	Land users in the locality may be concerned construction activity disturbances may affect livestock/hobby stock (i.e., horse) behaviour and/or breeding activities.	C	4	8	DA conditions of consent will ensure compliance with standard construction management and mitigation measures are implemented which is anticipated to reduce any potential risk of conflict related to noise, vibration and dust impacts on livestock in the locality. Construction activities are short term. Implementation of fencing will positively provide security for animals, and a separation buffer from the project. Ongoing management of the site and consultation with stakeholders by site managers will identify and address concerns if they arise.	D	4	5	Any complaints from neighbours regarding effects to livestock can be managed within normal construction and on-going site operational management procedures.
Construction Amenity	Stakeholders in the locality may be concerned about construction amenity issues affecting recreational land uses. E.g. Monash Country Club and Elanora Country Club golf courses.	C	4	8	DA conditions of consent will ensure compliance with standard construction management and mitigation measures are implemented which is anticipated to reduce any potential risk of impacts to amenity. Construction activities are short term. Ongoing management of the site and consultation by the site managers with stakeholders will identify and address concerns if they arise.	D	4	5	Construction, earthworks and the project development will be undertaken in accordance with conditions of consent. Any complaints from neighbours can be addressed within normal construction and on-going site operational management procedures.
Construction Biosecurity	Land users in the locality may be concerned about weed, plant pest, plant disease or pest animal introduction from increased volume of vehicles and workers from out of area during construction and potential for spread to neighbouring rural lands.	C	3	13	As per a Biosecurity Management Risk Assessment undertaken for the Project, the biosecurity risk resulting from the project is determined to be low due to the limited sensitive agricultural operations in proximity to the Study Area, the existing high volume of vehicles and people visiting the locality from out of the area (noting the existing direct and unrestricted exposure of wholesale and commercial nurseries to visitors), as well as the standard mitigation measures relating to biosecurity available to the Project. Construction activities are short term and the absence of sensitive agricultural operators in close proximity to the project suggest low risk. A biosecurity protocol which includes the mitigation measures outlined in the Biosecurity Management Risk Assessment. Ongoing management of the site and consultation by the site managers with stakeholders will identify and address concerns if they arise.	D	3	9	Construction, earthworks and the project development will be undertaken in accordance with conditions of consent. Any complaints from neighbours regarding weed spread or biosecurity can be addressed within normal construction and on-going site operational management procedures.

Conflict Category	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Agriculture Potential	Stakeholders may have concerns that the construction of the Project will alter and disturb existing soil properties, undermining the capability of the land for future agricultural production.	C	4	8	The project will remove horticultural land use consisting of nurseries with a very limited extent of fruit and vegetable production. The land and soil capability and current use of lands within the study area and its surroundings suggests a low potential of the study area being utilised for greater commercial agricultural pursuits. Agriculture in noted to be just one type of many possible rural land uses in the RU2 Rural Landscape zone. Concern about the removal of agricultural activity is predicted to be low.	D	4	5	Nil.
Water Quality	Residents and land users in the locality may be concerned about changes to water quality, quantity and surface water flows that may affect the Study Area and locality, including Mullet Creek, from surface disturbances during construction activities.	C	4	8	DA conditions of consent will ensure compliance with standard construction management and appropriate mitigation measures, including soil erosion and sedimentation controls, water sensitive urban design including stormwater basins and implementation of the water cycle management strategy to minimise impacts to watercourse health and quality. This will include ground stabilisation being maintained where possible and practical, and identifying and repairing active erosion. The development has incorporated the improvement and conservation of biodiversity along riparian corridors which will further reduce potential risks of off-site impacts. Compliance with mitigation measures is anticipated to reduce the risk of conflict related to watercourse health and quality. Implement all measures specified in an erosion and sediment control plan developed for the construction phase of the Project.	E	4	3	Construction, earthworks, the project development and on-going management will be undertaken in accordance with conditions of consent. Implementation of the project site, landscape plans and vegetation management plan. Effectiveness of mitigation measures will be measured as part of a construction management plan.
Waste Management	Residents and land users in the locality may be concerned that waste generated by the development may increase the presence of pest animals and/or vermin.	D	4	5	DA conditions of consent will ensure compliance with standard construction management and appropriate mitigation measures including waste management plans. The potential impacts as a result of increased waste generation from the development can be appropriately managed in accordance with Council’s controls and waste management procedures. Ongoing management of the site and consultation by the site managers with stakeholders will identify and address concerns if they arise.	E	4	3	Construction, earthworks, the project development and on-going management will be undertaken in accordance with conditions of consent. No complaints from land users in locality regarding increased waste or pest animals.

Conflict Category	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Flora and fauna	Stakeholders may be concerned about impacts to flora and fauna within the study area. E.g. impacts to existing vegetation along riparian corridors and pockets of remnant native vegetation throughout.	C	4	8	DA conditions of consent will ensure compliance with standard construction management and appropriate mitigation measures including flora and fauna management plans. Sensitive vegetation within southwest part of the site to be considered in the design of the buildings and road. In addition, the ecological value of site will be maintained through retention and protection of existing vegetation along the riparian corridor. Ongoing management of the site and consultation with stakeholders will identify and address concerns if they arise.	D	4	5	Construction, earthworks and the project development will be undertaken in accordance with conditions of consent. Maintain ecological value of site through retention and protection of existing vegetation along the riparian corridor.
Construction impacting heritage values	Stakeholders may be concerned about impacts to heritage items or values at the Study Area and locality. E.g. existing Church and Chapel.	C	4	8	An assessment of impacts to heritage will be undertaken, noting the existing Church and Chapel to be retained by the project. Compliance with mitigation measures is anticipated to reduce the risk of conflict related to culturally sensitive land and heritage. An unexpected finds procedure will be in place in the event a potential heritage item is discovered during construction works. Implement all measures specified in management plans and/or consent conditions.	D	4	5	Effectiveness of engagement will be measured as part of the construction management plan. Protect landmarks (i.e. the Chapel and Church), respecting their historical and cultural significance.
Visual Amenity	Stakeholders in the locality who wish to maintain views of the existing rural landscape may be concerned about the change in visual amenity resulting from the Project.	C	2	18	The study area has been subject to heavy disturbance and clearing in the past resulting in a range of current land uses with varied impairment to the historical visual amenity of rural land. Existing vegetation along the riparian corridors are to be improved and maintained as part of the proposed development with conservation areas established. Sensitive vegetation within southwest part of the site to be considered in the design of the buildings and road. Tree canopy cover will be maximised through the streetscape.	E	2	10	Construction, earthworks and the project development will be undertaken in accordance with conditions of consent. Implementation of the project site, landscape plans and vegetation management plan. Provide for the rehabilitation of riparian environments.

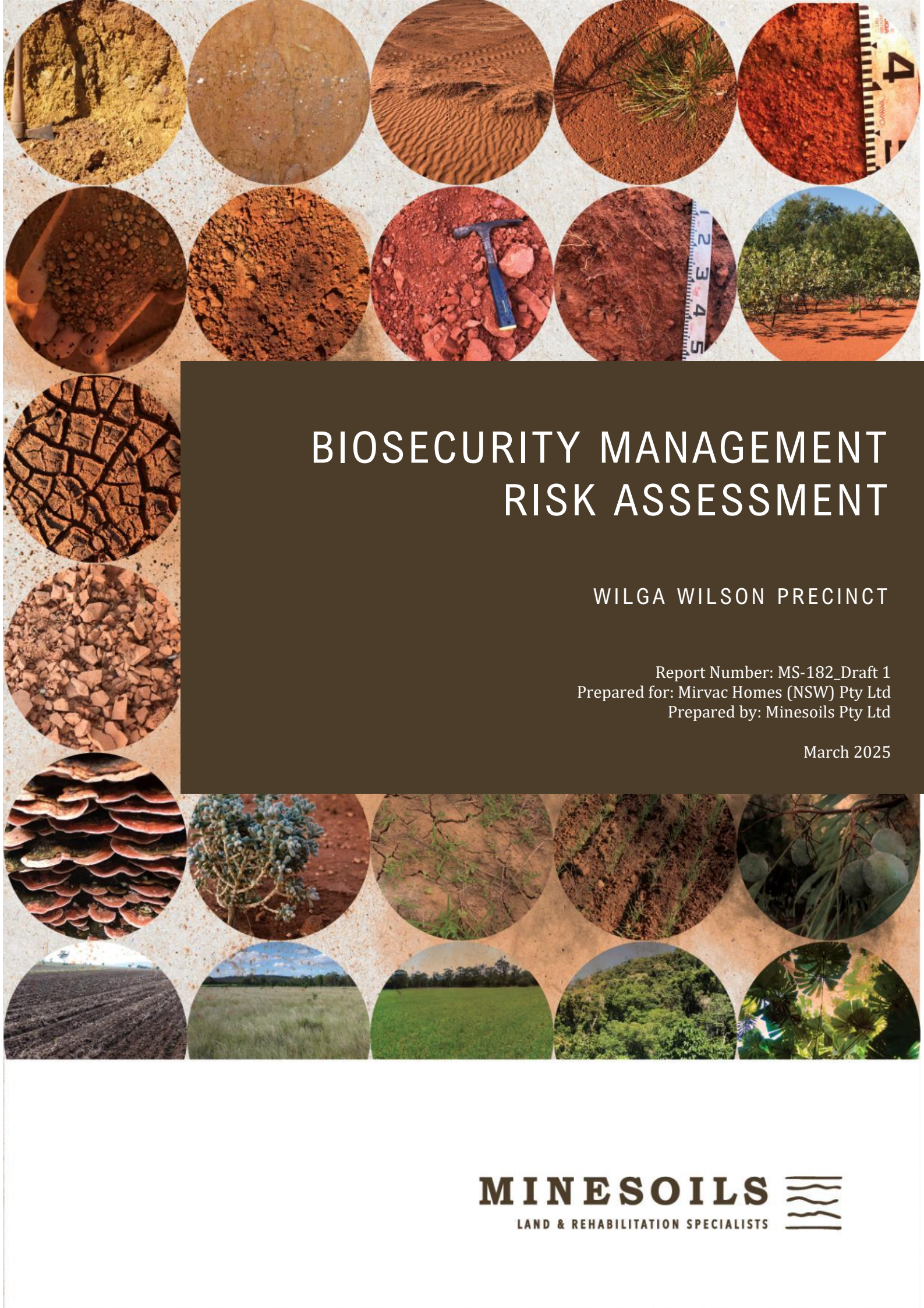
Conflict Category	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Traffic and access	Existing residents and land users in the locality may be concerned about an increase in traffic volume and impacts to accessibility on local roads as a result of the proposed development. This may cause conflict by increasing travel times and limiting access.	B	4	12	DA conditions of consent will ensure compliance with standard construction management and appropriate mitigation measures including the traffic impact assessment. Liaison with relevant road authorities (ie. Council and Transport for NSW) regarding final design and road capacity will be undertaken. Level change southwest of the site is to be removed to avoid impacting vehicle access. Ongoing management of the site and consultation with stakeholders will identify and address concerns if they arise.	C	4	8	Improve pedestrian and access movement along Powderworks Road with heavy traffic. Improve access by providing public transport stops. Establish clear access points from Powderworks Road to the North and East. Provide sufficient evacuation routes to ensure safety in the
Noise	Existing residents/land users in the locality may be concerned about an increase in nuisance noise generated from the proposed residential and recreational land uses.	D	3	9	The potential for nuisance noise impacts are determined to be consistent with the context of existing neighbouring development and mitigated by development design.	D	4	5	Nil.
Air Quality	Existing residents/land users in the locality may be concerned that dust generated by increased vehicle movements, as well as increased pollution from increased vehicle movements, has the potential to impact air quality and may have adverse health implications for residential land users within the locality.	D	3	9	The potential dust and pollution impacts are determined to be negligible in the context of existing residential development and land uses and mitigated by development design.	D	5	2	Nil.
Personnel	Existing landowners/users in the locality may be concerned that the change in land use may attract people to the area who may not otherwise visit the area, including workers. This may be perceived to adversely affect a resident’s security.	D	4	5	The potential impacts are determined to be appropriate in the context of existing land uses and residential development. Workforce behaviour will be managed through the implementation of the construction management plan, which will encourage positive workforce behaviour. Ongoing consultation with stakeholders will identify and address concerns if they arise.	E	4	3	Effectiveness of mitigation measures will be measured as part of a construction management plan.

Conflict Category	Potential Conflict Description	Initial Risk Rating			Risk Reduction Control	Final Risk Rating			Performance Target
		Probability	Consequence	Rating		Probability	Consequence	Rating	
Property Values	Existing landowners/users in the locality may be concerned about potential devaluation of properties due to the development.	C	3	13	The effect of the development on property values in the locality is unknown. Impacts to property values in the locality may be experienced for properties in proximity to development. The surrounding land is generally already developed and utilised for mixed uses.	D	3	9	Development be undertaken in accordance with conditions of consent and plans.
Light Industry in Locality	Residents of the proposed development may have concerns about nuisance dust as a result of land use in the surrounding locality. E.g. light industry to the northwest of the site.	D	3	9	The potential impacts are determined to be appropriate in the context of existing land uses and residential development om the locality. Project design has included measures to mitigate the impacts. Ongoing consultation with stakeholders will identify concerns if they arise.	E	3	6	No complaints from residents regarding nuisance dust.
Light Industry in Locality	Residents of the proposed development may have concerns about nuisance noise as a result of land use in the surrounding locality, including light industry.	D	3	9	The potential impacts are determined to be appropriate in the context of existing land uses and residential development in the loclaity. Project design has included measures to mitigate the impacts. Ongoing consultation with stakeholders will identify concerns if they arise.	E	3	6	No complaints from residents regarding nuisance noise.

Appendix 2

Biosecurity Management Risk Assessment





BIOSECURITY MANAGEMENT RISK ASSESSMENT

WILGA WILSON PRECINCT

Report Number: MS-182_Draft 1
Prepared for: Mirvac Homes (NSW) Pty Ltd
Prepared by: Minesoils Pty Ltd

March 2025

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DISCLAIMER

This report has been prepared by Minesoils Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Mirvac Homes (NSW) Pty Ltd. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from Minesoils. Minesoils disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared by	Approved
MS-182_Draft 1	27 March 2025	Maddie Whitten	Matt Hemingway
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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Minesoils Pty Ltd (Minesoils) was engaged by Mirvac Homes (NSW) Pty Ltd (Mircvac Homes (NSW)) to conduct a Biosecurity Management Risk Assessment to support a Planning Proposal for the Wilga Wilson Precinct (the Project) located in Ingleside, in the Northern Beaches of Sydney, New South Wales. (Refer **Figure 1**).

The Project, which is located in the Northern Beaches Local Government Area (LGA), covers an area of approximately 28.8 ha, and would provide approximately 536 dwellings including apartments, detached residential dwellings, and terrace houses. The Project would also protect more 6.8ha of conservation areas and provide 3500sqm of park land.

The Project area has been largely cleared in the past and has a history of limited livestock grazing, horticulture, light industrial use and residential use.

1.2 PURPOSE

Biosecurity is defined in the Draft NSW Biosecurity Strategy (Department of Industry and Investment, 2021) as *‘the protection of the economy, environment and community from pests, diseases and weeds’*, and it includes measures to prevent new pests, diseases and weeds from entering our country and becoming established. As such, it is vital for the health, wellbeing, and prosperity of the state. The economic impact of pest animals alone has been estimated at \$170 million in NSW annually, and in 2018 the Centre for Invasive Species Solutions estimated that the total annual cost of weeds in NSW ranged from \$1.67 billion to \$1.9 billion per annum (McLeod, 2018).

The purpose of this Biosecurity Management Risk Assessment is to determine the biosecurity risks associated with the Project and detail the steps that will be taken onsite to manage and mitigate these risks. It is anticipated that this Biosecurity Management Risk Assessment will form the basis of a construction biosecurity protocols following approval of the Project, which will be based on the risks and mitigation measures identified through this risk assessment, and include any biosecurity commitments required under the Conditions of Approval.

Biosecurity was identified a potentials risk of the Project by the Northern Beaches Council and the Department of Primary industries, noting the presence of agriculture occurring the vicinity of the Project area, which that generally consisting of intensive plant horticulture in the form of wholesale and commercial plant nurseries.

1.3 LEGISLATION

The key piece of relevant legislation in NSW relating to biosecurity is the *Biosecurity Act 2015*, which commenced in mid-2017, with the aim to provide a framework for the prevention, elimination, and minimisation of biosecurity risks.

There are also three key strategies relevant to biosecurity in NSW, being:

- The *NSW Biosecurity Strategy 2013-2021*, whose vision is that biosecurity is a shared responsibility between government, industry and the community;
- The *NSW Biosecurity and Food Safety Strategy 2022-2030* which aims to protect the economy, the environment, and the community from biosecurity related risks; and
- The Department of Agriculture and Water Resources *Australian Pest Animal Strategy 2017 to 2027*, which provides national guidance on best practice vertebrate pest animal management.

This Biosecurity Management Risk Assessment has been undertaken to ensure that the biosecurity risks of the Project are identified and consequently managed in accordance with the requirements and objectives of both the *Biosecurity Act 2015* , and the above strategies as they apply to NSW.



1.4 ASSESSMENT APPROACH

This risk assessment has been undertaken in accordance with the Australian Government Department of Agriculture, Fisheries and Forestry *Biosecurity Risk Management Template*, and the Department of Primary Industries (DPI) *NSW Biosecurity and Food Safety Strategy 2022-2030* (2022).

1.5 REPORT STRUCTURE

This report is structured as follows:

- Section 1** Introduction – outlines the Project and presents the purpose of this report.
- Section 2** Regional Biosecurity Risks – outlines the key biosecurity risks for the Project, including pest animals, weeds, and disease.
- Section 3** Mitigation Measures – describes the measures used to mitigate the biosecurity risks of the Project.
- Section 4** Biosecurity Risk Assessment – evaluates the biosecurity risks of the Project, taking account of the likelihood and consequence of each risk occurring.
- Section 5** Summary
- Section 6** References



2 REGIONAL BIOSECURITY RISKS

Biosecurity management focuses on three main risk areas: pest animals, weeds, and disease. To determine the biosecurity risks across NSW the state is split into regions, and each region has its own strategic management plan developed by the NSW Local Land Services (LLS). These strategies are crucial in understanding the biosecurity risks that occur in the broader region in order to better predict the risks that may affect the Project area. Further, these strategies provide the biosecurity objectives and expected management practices for the weed and pest animals of the region. The Greater Sydney Regional Strategic Pest Animal Management Plan, and the Greater Sydney Regional Strategic Weed Management Plan by the LLS are used to inform the below sections which detail the biosecurity risks that apply to the Project.

2.1 PEST SPECIES

2.1.1 GREATER SYDNEY REGIONAL STRATEGIC PEST ANIMAL MANAGEMENT PLAN

The Project is located within the Northern Beaches Council LGA which falls within the Greater Sydney Region of NSW, and as such is covered under the Greater Sydney Regional Strategic Pest Animal Management Plan 20124-2028, developed by the NSW LLS, which provides a strategic regional approach to improving the coordination and delivery of pest animal management activities for terrestrial vertebrate and freshwater aquatic pest species (LLS, 2024).

2.1.2 KEY REGIONAL PEST ANIMAL SPECIES

Under the *NSW Biosecurity Act 2015*, pest animals are not defined by species. That is, a pest species can be considered any species (other than native species) that presents a biosecurity threat. Pest animals are a significant social, economic and environmental burden, negatively impacting on the State's agriculture, biodiversity, natural and built environments, public health and productivity.

The priority vertebrate pest species which exist regionally and therefore may pose a threat to the Project area are:

- Feral pig;
- Feral deer;
- Feral cat;
- Wild dog;
- Red fox;
- Feral goat; and
- Wild rabbit.

Each of these pest species has its own program for management within the Greater Sydney Regional Strategic Pest Animal Management Plan 2024-2028, which describes the impacts and distribution of each species, the expectations of land managers, and the strategic objectives for management. The cane toad is also included within the plan as a priority pest species although they are not yet established within the region, with a focus on prevention of the establishment of a breeding population.

There are also several feral birds in the region which may occur in the Project area.

2.2 WEEDS

2.2.1 GREATER SYDNEY REGIONAL STRATEGIC WEED MANAGEMENT PLAN

The Greater Sydney Regional Strategic Weed Management Plan 2023-2027 was developed by the Greater Sydney LLS and focuses on managing weeds to improve the region's biosecurity. It provides the key weed risks for the region and lists the priority weed species, as supplied in **Section 2.2.2**.



2.2.2 KEY REGIONAL WEED RISKS

The physical characteristics of weeds allows them to be easily introduced, spread, and become established. Weeds pose a significant threat to primary production, ecosystem biodiversity, and conservation efforts, by:

- Invading crops and pasture, reducing crop yields and the carrying capacity of agricultural land.
- Impacting the survival and evolutionary development of native species, populations and ecological communities and therefore reducing biodiversity.
- Reducing the quantity and quality of agricultural, horticultural and forestry products.
- Changing the structure and function of terrestrial and aquatic ecosystems and degrading the ecosystem services that they provide.
- Poisoning livestock and domesticated animals.
- Reducing the quality of water and waterways, affecting natural flows and aquatic habitats.
- Changing natural bushfire patterns, and the frequency and intensity of fires.
- Degrading natural areas that they are not suitable for nature conservation and/or eco-tourism.
- Impacting important infrastructure such as water supply dams, railway corridors and roadways.

Application of the NSW weed risk management system provides four management categories and their objectives to characterise weeds within the state. These management categories are defined in **Table 1**, and the priority weeds for the Greater Sydney region, and which therefore are considered a risk of occurring on or in the vicinity of the Project, are listed below in **Table 2**.

Table 1: Defining Regional Weed Management Categories

Management Category	Objective	Characteristics of weeds in this category
Prevention	To prevent the weed species arriving and establishing in the region.	Weeds currently not found in the region, that pose a significant biosecurity risk and prevention of the biosecurity risk posed by these weeds is a reasonably practicable objective.
Eradication	To permanently remove the species and its propagules from the region OR to destroy infestations to reduce the extent of the weed in the region with the aim of local eradication.	Weeds are present in limited abundance in the region. Elimination of the biosecurity risk posed by these weeds is a reasonably practicable objective
Containment	To prevent the ongoing spread of the species in all or part of the region.	These weeds are widely distributed in parts of the region. While broad scale elimination is not practicable, minimisation of the biosecurity risk posed by these weeds is reasonably practicable.
Asset protection	To prevent the spread of weeds to key sites/assets of high economic, environmental and social value, or to reduce their impact on these sites if spread has already occurred.	These weeds are widely distributed in some areas of the region. Their spread should be minimised to protect priority regional assets.



Table 2: Priority Weeds of the Greater Sydney Region

Common Name	Scientific name	Regional Management Priority
African olive	<i>Olea europaea subsp. cuspidata</i>	Containment
Alligator weed	<i>Alternanthera philoxeroides</i>	Asset protection
Asparagus fern	<i>Asparagus virgatus</i>	Containment
Black willow	<i>Salix nigra</i>	Containment
Cabomba	<i>Cabomba caroliniana</i>	Asset protection
Cat's claw creeper	<i>Dolichandra unguis-cati</i>	Asset protection
Chinese knotweed	<i>Persicaria chinensis</i>	Eradication
Climbing asparagus	<i>Asparagus africanus</i>	Eradication
Coral creeper	<i>Barleria repens</i>	Eradication
East Indian hygrophila	<i>Hygrophila polysperma</i>	Prevention
Giant devil's fig	<i>Solanum chrysotrichum</i>	Eradication
Giant rats tail grass	<i>Sporobolus pyramidalis</i>	Prevention
Giant reed	<i>Arundo donax</i>	Asset protection
Glory lily	<i>Gloriosa superba</i>	Eradication
Gorse	<i>Ulex europaeus</i>	Containment
Green cestrum	<i>Cestrum parqui</i>	Asset protection
Grey sallow	<i>Salix cinerea</i>	Eradication
Groundsel bush	<i>Baccharis halimifolia</i>	Eradication
Holly-leaved senecio	<i>Senecio glastifolius</i>	Containment
Horsetails	<i>Equisetum spp.</i>	Containment
Hygrophila	<i>Hygrophila costata</i>	Eradication
Hymenachne	<i>Hymenachne amplexicaulis</i>	Prevention
Kei apple	<i>Dovyalis caffra</i>	Eradication
Kidney leaf mud plantain	<i>Heteranthera reniformis</i>	Eradication
Kudzu	<i>Pueraria lobata</i>	Eradication



Common Name	Scientific name	Regional Management Priority
Leaf cactus	<i>Pereskia aculeata</i>	Eradication
Ludwigia	<i>Ludwigia peruviana</i>	Asset protection
Ming fern	<i>Asparagus macowanii</i> var. <i>Zuluensis</i>	Eradication
Mysore thorn	<i>Caesalpinia decapetala</i>	Prevention
Nodding thistle	<i>Carduus nutans</i>	Eradication
Pampas grass	<i>Cortaderia species</i>	Asset protection
Salvinia	<i>Salvinia molesta</i>	Asset protection
Scotch/English Broom	<i>Cytisus scoparius</i>	Asset protection
Sea spurge	<i>Euphorbia paralias</i>	Eradication
Senegal tea	<i>Gymnocoronis spilanthoides</i>	Containment
Serrated tussock	<i>Nassella trichotoma</i>	Containment
Sicilian sea lavender	<i>Limonium hyblaenum</i>	Eradication
Sicklethorn	<i>Asparagus falcatus</i>	Containment
Singapore daisy	<i>Sphagneticola trilobata</i>	Asset protection
Skunk vine	<i>Paederia foetida</i>	Eradication
Spanish broom	<i>Spartium junceum</i>	Prevention
Tiger pear	<i>Opuntia aurantiaca</i>	Containment
Water hyacinth	<i>Eichhornia crassipes</i>	Asset protection
Water lettuce	<i>Pistia stratiotes</i>	Prevention
Water poppy	<i>Hydrocleys nymphoides</i>	Containment
Water star grass	<i>Heteranthera zosterifolia</i>	Prevention
White blackberry/Mysore raspberry	<i>Rubus niveus</i>	Prevention

2.3 DISEASE

For the semi-rural setting of the Project, the biosecurity risks related to disease primarily involve plant diseases and zoonotic diseases (diseases that can be transmitted from animals to humans or other animals). The surrounding land uses, particularly horticulture and hobby farming, have potential to contribute to the presence of various diseases that may affect both plants and livestock. Understanding these risks is crucial to mitigating potential negative impacts on the environment, health, and agricultural activities.



2.3.1 KEY PLANT DISEASE RISKS

The Project is located in an area with a strong horticultural presence, primarily consisting of wholesale and commercial plant nurseries, and also neighbours two golf courses. These land uses increase the likelihood of plant diseases being present in the area and are also vulnerable to plant disease spread from the Project area.

The potential plant disease risks associated with the Project can be grouped into the following categories:

- **Fungal Diseases:** These are among the most common plant diseases and can affect a wide range of plants, especially in areas where horticulture is practiced. Common fungal diseases include:
 - **Powdery Mildew:** Affects a variety of plants, including ornamentals, vegetables, and fruit trees. It is typically spread by wind and water and can thrive in humid conditions.
 - **Root Rot Diseases:** Caused by various fungal pathogens (e.g., *Phytophthora* spp.), these diseases can infect crops, trees, and other vegetation, leading to poor plant growth or death. These pathogens can be introduced through infected soil or plant material.
- **Bacterial Diseases:** Bacteria are another significant threat to plants, particularly in horticultural businesses such as nurseries. Common bacterial plant diseases include:
 - **Fire Blight:** Affects fruit trees, particularly apples and pears, and is spread by insects, rain, and contaminated equipment.
 - **Bacterial Wilt:** Caused by species such as *Ralstonia solanacearum*, this disease affects a range of crops and can cause significant yield losses. It is typically spread through infected water, soil, and plant material.
- **Viral Diseases:** These diseases can severely affect plant health and agricultural productivity. Some of the most concerning plant viruses in NSW include:
 - **Citrus Canker:** A viral disease affecting citrus crops, which can spread rapidly through infected plant material or by wind and rain.
 - **Tomato Spotted Wilt Virus:** This virus affects a range of crops, especially tomatoes and other vegetables, and is spread by small insects.
- **Weed Pathogens:** Weeds in the area could also be carriers of plant diseases that could spread to cultivated crops or native plants in conservation areas. For example:
 - **Cucumber Mosaic Virus:** This virus can be carried by aphids and spread between weed species and cultivated plants.

2.3.2 KEY ANIMAL DISEASE RISKS

Although there is no intensive or large-scale agriculture undertaken in the Project locality, there are large rural residential properties containing hobby stock, and therefore a risk of disease transmission between pest animals and domesticated animals, particularly horses.

- **Zoonotic Diseases (Diseases Transferred from Animals to Humans or Other Animals):**
 - **Lyme Disease:** Transmitted primarily by ticks (specifically the *Ixodes scapularis* species), Lyme disease is a significant concern in rural areas where tick populations thrive. Lyme disease can be transmitted to horses, dogs, and humans. Infected animals can act as reservoirs, spreading the bacteria (*Borrelia burgdorferi*) to humans and other animals.



- **Toxoplasmosis:** This parasitic infection is transmitted through the faeces of infected cats (including feral cats), and it can affect horses, livestock, and humans. Toxoplasmosis can cause serious health issues in both animals and humans, including neurological problems in horses.
- **Diseases Transmitted by Pest Animals to Domesticated Animals:**
 - **Leptospirosis:** This bacterial infection, caused by the *Leptospira* species, is typically spread by rats, feral pigs, and other pest animals. Horses, livestock, and humans are susceptible to infection through exposure to contaminated water or soil. Leptospirosis can lead to liver and kidney damage and is a concern near wet or swampy areas.
 - **Hendra Virus:** Although rarer, the Hendra virus, carried by flying foxes (bats), poses a risk to horses, especially in rural and semi-rural settings. Transmission occurs when infected bat saliva, urine, or faeces contaminate pastures or water, which are then ingested. Hendra virus can be fatal to horses and has potential human health implications.
 - **Foot and Mouth Disease:** This disease is carried by feral pigs, and could be transmitted to livestock or humans, though this is more commonly a concern for larger agricultural operations.



3 MITIGATION MEASURES

Biosecurity measures are crucial for safeguarding the health and productivity of horticultural and agricultural operations, as well as protecting the broader environment and public health. By implementing biosecurity protocols, it is possible to prevent the introduction and spread of pests, diseases, and invasive species that can devastate plants, livestock, and ecosystems. This is particularly important where movement of goods, people, and wildlife can facilitate the rapid spread of pathogens and pests into new areas.

Effective biosecurity measures encompass a range of practices, including strict quarantine procedures, hygiene protocols, controlled access to site, and monitoring and surveillance systems. Investing in biosecurity not only reduces the risk of economic losses due to diseases but also promotes sustainable practices by minimizing the need for chemical interventions and preserving biodiversity. Effective management of biosecurity in conservation areas and parklands is essential for maintaining resilience, mitigating risks, and fostering a healthy and sustainable ecosystems.

The following sections provide mitigation measures to address the risks identified in **Section 2**. These mitigation measures will provide the basis of the construction biosecurity management protocols to be developed for the Project, following its approval.

3.1 PEST MANAGEMENT

The *Australian Pest Animal Strategy 2017–2027* (Invasive Plants and Animals Committee 2016) provides eight principles that underpin effective pest animal management, as listed below.

1. Prevention and early intervention to avoid the establishment of new pest animal species is generally more cost-effective than ongoing management of established populations.
2. Pest animal management is a shared responsibility between landholders, community, industry and government.
3. Management of mobile pest animals requires a coordinated approach across a range of scales and land tenures.
4. Management of established pest animals should focus on the protection of priority assets (for example the conservation area with the Project are) but also usually requires a 'buffer' management area around the asset to account for pest animal mobility.
5. Pest animal management should be based on actual rather than perceived impacts and should be supported by monitoring to measure whether impact reduction targets are being achieved.
6. Best practice pest animal management balances efficacy, target specificity, safety, humaneness, community perceptions, efficiency, logistics and emergency needs.
7. Best practice pest animal management integrates a range of control techniques (including commercial use where appropriate), considers interactions between species (such as rabbits and foxes) and accounts for seasonal conditions and animal welfare.
8. The cost of pest animal management should be borne by those who create the risk and those who benefit from its management. Governments may co-invest where there is a net public benefit from any such intervention.

The development would consider biosecurity management of pest animals in line with these 8 principals, and in accordance with the management programs provided in the most recent version of the Greater Sydney Regional Strategic Pest Animal Management Plan.



The controlling of feral animals would be undertaken in line with the following processes:

1. Monitor the abundance of feral animals.
2. Identify suitable control methods for target species (e.g. trapping and/or baiting for European Rabbits and European Red Foxes).
3. Implement the selected control methods on the target species.
4. Re-monitor the abundance of feral animals to evaluate the effectiveness of the control methods.
5. Follow-up control where previous control has been sub-optimal.

The control of feral animals is intended to be adaptive and will be informed/reviewed based on monitoring.

3.2 WEED MANAGEMENT

Weed species could be inadvertently brought onto the Project area with imported materials, machinery, or allowed to invade naturally through removal or damage of current vegetation, or a change in land management.

Weeds in general would be managed across the Project through a series of control measures, including:

- Monitoring programs and routine inspections would be undertaken to identify potential weed infestations.
- An ongoing effort to identify and eliminate (spray) existing weed populations on-site over the life of the Project. Where necessary, selective herbicides may be used to target specific weed species while minimizing harm to neighbouring businesses and the environment.
- Cleaning machinery and vehicles, and checking clothing and equipment for weed seeds or weed fragments prior to site access.
- Vehicle washdown facilities on site for use by both site vehicles, and visitors prior to access to the Project area.
- Education and training provided to employees and contractors during the induction process including weed identification, prevention strategies, and integrated weed management practices.

The spread of declared noxious weeds will be prevented by using the measures above. The monitoring and control of weed populations using herbicides within the Project will significantly reduce weed infestations. Weed control, if required, will be undertaken in a manner to minimise soil disturbance. Any use of herbicides will be carried out in accordance with the regulatory requirements, and with the mandatory management requirements of each weed as listed in the most recent version of the Greater Sydney Regional Strategic Weed Management Plan available through the LLS. Records will be maintained of weed infestations and control programs will be implemented according to best management practice for the weed species concerned.

3.3 DISEASE MANAGEMENT

Managing the spread of disease both on the Project site and spreading offsite (e.g. through wind or pest animal transmission) is crucial for protecting native wildlife, the environment, biodiversity, and personnel on site, and especially relevant in the context of the wholesale and commercial nurseries within the locality.

- **Controlled access to site:** Controlled access limits biosecurity risk by reducing the potential for introduction and spread of diseases from external source. This will be achieved on the Project area by controlling who can access site, maintaining an access log for all visitors, reducing transmission routes by limiting access to one main entry and exit point whenever possible, and promoting awareness of biosecurity issues for site visitors through signage at the site entry, and induction requirements prior to site access. Limit the entry of non-project related vehicles, machinery, and equipment into areas of the Project area beyond the specified delivery areas. There will also be a designated parking area for vehicles visiting the site. All visitors will be required to park their vehicles inside the designated parking areas. Any vehicle requiring access to site will be washed prior to entry.



- **Vehicle wash down facilities:** Wash down facilities will be available on site and available for use for all Project and non-project related vehicles. All contractors will be required to utilise the washdown facilities prior to driving on site to limit the spread of soil-borne diseases.
- **Waste management facilities:** Waste management facilities will be provided on site, and emptied regularly to avoid garbage attracting vermin and flies, which can carry diseases.
- **Site Maintenance:** The Project area will be maintained in a clean and tidy state to minimize areas where disease-causing organisms can thrive. This includes removing standing water, clearing away debris, providing for the regular removal of waste, and performing regular site maintenance.
- **Training and inductions:** All workers and visitors will be subject to a site induction process prior to entering the Project area, which will determine their biosecurity risk prior to being granted access to the Project area. This process will consider the potential for visitors to have been previously exposed to a disease and the subsequent potential for them to introduce a disease on the Project area. The induction will also be used to communicate the biosecurity risks and associated mitigation obligations expected of all staff/contractors/visitors to site. Regular training and awareness of biosecurity risks and measures will be provided for staff in annual tool-box talks.

3.4 RESPONSIBILITIES

The *Australian Pest Animal Strategy 2017–2027* (Invasive Plants and Animals Committee 2016) lists the following biosecurity responsibilities for landholders (public and private):

- Detect and report new pest animal occurrences.
- Control and manage established pest animals to mitigate, as necessary, the impacts on their own assets, or as required by regulation.
- Take reasonable steps to minimise the impacts of established pest animals on other landholders, particularly through participation in programs of collective industry or community-led action, and on people and the broader environment.
- Cooperate with and plan pest animal management activities jointly with neighbours, as well as state, territory and local governments, within a landscape scale/cross-tenure approach.
- Apply knowledge and skills to improve pest animal management and understand the need to use multiple approaches (e.g. chemical, physical, and biological) to prevent pest animals from adapting to existing controls.

The developer will be ultimately responsible for managing, monitoring, and implementing the biosecurity management activities of the Project in line with these responsibilities, including:

- Reviewing and updating this Biosecurity Management Risk Assessment, and the subsequent construction biodiversity protocols once developed, to ensure both documents remain current and are correctly applied.
- Delivery of biosecurity training and information to Project personnel and any relevant contractors accessing the Project area, through use of inductions, toolbox talks, pre-start meetings etc.
- Recording and reporting on biosecurity matter or incidents as they relate to the Project.

3.5 TRAINING

All project personnel would be made aware of the importance of biosecurity on site, and their role in maintaining biosecurity integrity. This training will primarily be delivered through onsite induction training undertaken prior to work onsite.

The construction biosecurity protocols will facilitate on-going initiatives to maintain biosecurity awareness, including maintaining signage on site and tool-box talks to reiterate the responsibilities of all personnel associated with the Project.



3.6 AUDITING AND REPORTING

Construction managers will audit the risk assessment process on site following any biosecurity incidents.

A summary of any required monitoring or operational data related to biosecurity will be recorded and reported to the local council or regulator, as requested.

Incident notification and reporting will be provided to the Mid Coast Council as soon as reasonably practical. It is considered an incident when material harm to the environment has been caused or threatens to cause harm to the environment. In the event of an emergency, in addition to notification of the Mid Coast Council, reporting will also be made to the following agencies as necessary:

- Emergency animal diseases - Hotline - 1800 675 888 (24 hours)
- Emergency plant pest reporting - Hotline - 1800 084 881
- Aquatic pests and diseases - Hotline - (02) 4916 3877 (recorded 24 hour hotline)
- Local Land Services - To report locusts and agricultural damage in natural disasters call 1300 795 299

Internal incident reporting and record keeping will also be undertaken, including:

- Supply chain inspection reports
- Records of disposal of biosecurity waste
- Records of treatments (e.g. fumigation treatment certificates)
- Training records
- Audit outcome records
- Key performance indicators and compliance records
- Processes implemented to mitigate additional and ongoing contamination events
- Processes for managing non-conformities and corrective action.

3.7 CONTINGENCY PLANNING

In the event that the above mitigation measures for biosecurity fail, contingency planning is imperative to promptly address any potential risks and maintain the biosecurity integrity of the Project and neighbouring properties as much as practicable. A more detailed contingency plan will be developed as part of the Construction biosecurity management protocols to be developed for the Project if approved, however it will build on the following commitments:

- Staff will be trained to recognise, report, and where possible limit the spread of priority invasive species and pest animals in the region.
- In the event of an outbreak or discovery of a priority invasive species or pest animal increased surveillance and monitoring measures will be implemented to detect and isolate affected areas wherever possible.
- Implementation of emergency control measures such as quarantine procedures or intensified pest and weed management strategies, as advised by the Greater Sydney LLS.
- A notification protocol will be established to promptly notify relevant authorities and stakeholders, ensuring coordinated efforts in managing the situation.

Regular review and refinement of the contingency plan based on lessons learned from incidents are essential to continuously improve biosecurity resilience and minimize disruptions to operations and environmental health. Through proactive contingency planning, the project can effectively mitigate the impact of biosecurity failures and maintain its commitment to responsible operational practices and biodiversity preservation.



4 BIOSECURITY RISK ASSESSMENT

Risk assessment is an important element of biosecurity management, allowing risks to be summarised as the combination of a hazard, the likelihood of the hazard causing damages, and the consequence or consequences of those damages. In order to correctly assess the risks to the Project, each hazard identified will also need to be considered in terms of the odds of that event happening, to determine a likelihood rating. Combining likelihood and consequence provides a risk rating.

Table 5 below is based on the Risk Assessment template provided by Animal Health Australia. It is intended that this risk assessment template is redone at each stage of the development, and at each time that changes are made to the size or operation of the Project. An updated Risk Assessment should also be undertaken through the investigation process following any biosecurity incident onsite. The risk assessment template should be included in a Biosecurity Management Plan prepared for the Project, if approved. It should be noted that a number of the risks included in **Table 5** are associated with livestock through the use of agrisolar, which may be implemented on the Project area.

The ranking system used in the risk assessment provides a rating based on the likelihood of the potential risk plus it's consequence, as illustrated in **Table 4**.

Table 4: Risk ranking system.

		CONSEQUENCE				
		negligible	low	moderate	high	very high
LIKELIHOOD	very high	moderate	moderate	high	very high	very high
	high	low	moderate	moderate	high	very high
	moderate	low	low	moderate	high	high
	low	negligible	low	moderate	moderate	high
	negligible	negligible	low	low	moderate	moderate



Table 5: Biosecurity Risk Assessment

Potential Risk	Negligible	Low	Moderate	High	Very High	Controls
INVASIVE SPECIES						
Weeds						
New weeds occur as a result of a change in land use (i.e. clearing of groundcover in early stages of construction), and go undetected	☐	☒	☐	☐	☐	- Monitoring/inspections for weed infestations - Weed spraying undertaken as necessary
Existing weeds are promoted by ground disturbance activates associated with Project construction	☐	☒	☐	☐	☐	- Monitoring/inspections for weed infestations - Weed spraying undertaken as necessary
A new weed is introduced to the property during construction due to increased volume of new personnel, vehicles and materials	☐	☒	☐	☐	☐	- Monitoring/inspections for weed infestations - Weed spraying undertaken as necessary
Weeds are transported from the Project Area to neighbouring properties on contractor vehicles/equipment during construction activities	☐	☒	☐	☐	☐	Contractors are required to use wash down facilities before exiting the Project area where visible soil or vegetation is apparent
Bare earth following clearing susceptible to establishment of blown in weed seeds	☐	☒	☐	☐	☐	- Monitoring/inspections for weed infestations - Weed spraying undertaken as necessary
Chemical use for weed control or vegetation removal during construction creates a residue issue for nearby horticulture and golf courses	☐	☒	☐	☐	☐	- Suitable trained contractors - Chemicals used only in accordance with the Safety Data Sheet and applied only at the specified rates - Records kept of all areas sprayed for weeds
Construction in or around water ways, including the unnamed streams of the Project area, allows for the spread aquatic weeds.	☐	☒	☐	☐	☐	- Regular inspections and maintenance of stormwater systems for aquatic weeds during construction - Monitor water sources in the Project area to prevent the spread of invasive aquatic species



Potential Risk	Negligible	Low	Moderate	High	Very High	Controls
Vertebrate Pests						
Changes to the presence of vermin, feral animals or wildlife as a result of the development cause injury to hobby stock in the locality	☒	☐	☐	☐	☐	- Pest animal monitoring undertaken to determine increases in pest activity during construction. - Appropriate control practices undertaken as required (baiting, trapping, etc.)
Changes to the presence of vermin, feral animals or wildlife as a result of the development impact horticultural operations in the locality	☐	☐	☒	☐	☐	
Vermin, feral animals or wildlife introduce a disease to the property during construction	☒	☐	☐	☐	☐	
Areas of the Project that are restored with new vegetation may attract pest species that take advantage of newly established habitats	☐	☒	☐	☐	☐	
Invertebrate Pests						
Pest insects introduce a disease to the property and surrounds	☐	☒	☐	☐	☐	- Appropriate waste management facilities in place, with waste regularly collected - Regular maintenance to keep site in a clean and tidy state - Use pest control measures like fencing, baiting, and habitat management to deter pest species from settling in newly established vegetation.
Areas of the Project that are restored with new vegetation may attract pest species that take advantage of newly established habitats	☐	☒	☐	☐	☐	
PEOPLE, VEHICLES AND EQUIPMENT						
Visitors and Workers						
A new weed, pest species or disease is introduced to the property during construction due to increased volume of new personnel, vehicles and materials	☐	☐	☒	☐	☐	- Entry/exit procedures - Visitor risk assessment - Biosecurity protocols - Utilise contractors from the region where practicable



Potential Risk	Negligible	Low	Moderate	High	Very High	Controls
Visitors/workers do not comply with entry/exit procedures and the biosecurity protocol	☐	☒	☐	☐	☐	
TRAIN, PLAN, AND RECORD						
Training						
Project personnel are unable to fulfil their biosecurity responsibilities in carrying out their role	☐	☒	☐	☐	☐	• Provide access to training for Project personnel • Project personnel qualification register • Training log • Biosecurity protocols • Utilise contractors from the region where practicable • Regular review of LLS biosecurity risk status for the region
Project personnel are unable to recognise a new endemic or emergency disease, pest or weed	☐	☒	☐	☐	☐	
Project personnel do not know what to do in the event of a biosecurity emergency	☐	☒	☐	☐	☐	
Project personnel are unable to fulfil their Workplace Health and Safety responsibilities with regards to zoonotic diseases	☐	☒	☐	☐	☐	
Record Keeping						
The Project is unable to trace visitor movements in the event of a disease, pest or weed outbreak	☐	☒	☐	☐	☐	• Construction personal logs/ records • Visitor risk assessments
BIOSECURITY RISK TO LOCALITY						
New weeds, pest species or diseases that occur as a result of a change of land use, or which are introduced to the Project Area as part of Project activities (i.e. construction), spread to neighbouring properties, including horticultural enterprises	☐	☐	☒	☐	☐	• Engagement with community and horticulture enterprises within the locality • Monitoring/inspections for weed infestations • Monitoring/inspections for plant disease indicators • Weed and disease elimination undertaken as necessary • Pest animal monitoring undertaken to determine increases in pest activity • Appropriate control practices undertaken as required (baiting,



Potential Risk	Negligible	Low	Moderate	High	Very High	Controls
						trapping, shooting, etc.) - Secure fencing - Minimise sharing or lending of equipment - Vehicle wash-down facilities - Regular training to ensure staff understand their responsibilities. - Regular review of LLS biosecurity risk status for the region
Soil-borne diseases/pathogens transferred to neighbouring properties on machinery/equipment	☐	☒	☐	☐	☐	- Minimise sharing or lending of equipment with neighbours - Vehicle wash-down facilities - Utilise contractors from the region where practicable
Soil erosion resulting from construction causes the spread of soil borne and plant diseases, as well as weeds, to spread to downstream areas	☐	☐	☒	☐	☐	Implement erosion control measures and design such as silt fences, mulch, and soil stabilizers during and after construction.
Waste from construction activities (e.g., packaging, materials, and vegetation debris) harbor pests, weeds, or pathogens that then spread to the surrounding environment or neighbouring properties.	☐	☒	☐	☐	☐	- Ensure that waste management protocols are followed strictly - Regular inspections of waste management facilities
The introduction of certain plant species during landscaping could unintentionally change local habitats, making them more conducive to certain pests and diseases, such as ticks or mosquitoes, or plant diseases, which could spread to the surrounding locality	☐	☐	☒	☐	☐	- Specialist selection of plant species that are not conducive to supporting pest species or plant disease - Monitoring of newly landscaped areas and habitats during the establishment phase.



5 DISCUSSION

Based on a review of the likely pest, weed, and disease risks, and a consideration of the available mitigation measures available to be implemented by the Project, the biosecurity risk assessment undertaken determined that risks to the Project area, locality and wider region are generally low, with some moderate risks existing that would require strict adherence to controls. These key moderate risks are summarised as follows:

- New weeds, pest species or diseases that occur as a result of a change of land use, or which are introduced to the Project area as part of Project activities (i.e. construction), spread to neighbouring properties, including horticultural enterprises
- Changes to the presence of vermin, feral animals or wildlife as a result of the development impact horticultural operations in the locality
- Soil erosion resulting from construction causes the spread of soil borne and plant diseases, as well as weeds, to spread to downstream areas
- The introduction of certain plant species during landscaping could unintentionally change local habitats, making them more conducive to certain pests and diseases, such as ticks or mosquitoes, or plant diseases, which could spread to the surrounding locality

Overall, the Project does not pose a material additional biosecurity risk to the current horticultural or other agricultural operations in the locality, due to:

1. The limited sensitive horticultural operations in proximity to the Project area, that being three wholesale nurseries and one commercial nursery.
2. The existing high volume of vehicles, machinery and people visiting the locality from out of the area (noting the existing direct and unrestricted exposure of wholesale and commercial nurseries to customers, suppliers, tradesmen, equipment and machinery, etc)
3. The standard mitigation measures relating to biosecurity available to the Project as listed in **Table 5**.

The mitigation measures included in this assessment, especially those relating to the key moderate risks listed above, should form the basis of biosecurity protocols to be included in the developments planning, design and construction.



6 REFERENCES

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