

SUBJECT

Ipswich West Housing Plan
Project (Western Growth Corridor
Draft Structure Plan)

DATE

31/03/2026

PROJECT NUMBER

30250700

TO

Ipswich City Council

OUR REF

30250700-GC-004-01-Ipswich Western Corridor
Civil Technical Review

NAMES

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1. Introduction

Ipswich City Council (ICC) have appointed Arcadis to undertake an initial environmental constraints and potential approvals assessment for a housing plan project in Ipswich Western Corridor. This memo identifies the potential environmental constraints and approval triggers based on the current proposed project location and associated townships in Ipswich. The proposed future housing development plan is located within the Rosewood, Thagoona and Walloon townships, as shown in the housing plan area footprint mapped in Figure 0-1.

This memo is an environmental technical review prepared to outline the existing environmental factors which may have the potential to be impacted by the proposed development, recommendations for further assessment work to identify potential approvals required, as well as identification of areas within these townships where there are no or very limited environmental constraints, possible constraints and further works required, and where there would be likely approvals and indicative application process times. Due to the size of the proposed development, this assessment has divided the total area into smaller areas, as shown in Section 3, where an environmental constraints assessment has been undertaken with recommendations for sections of the proposed development to better understand environmental risk across the development.

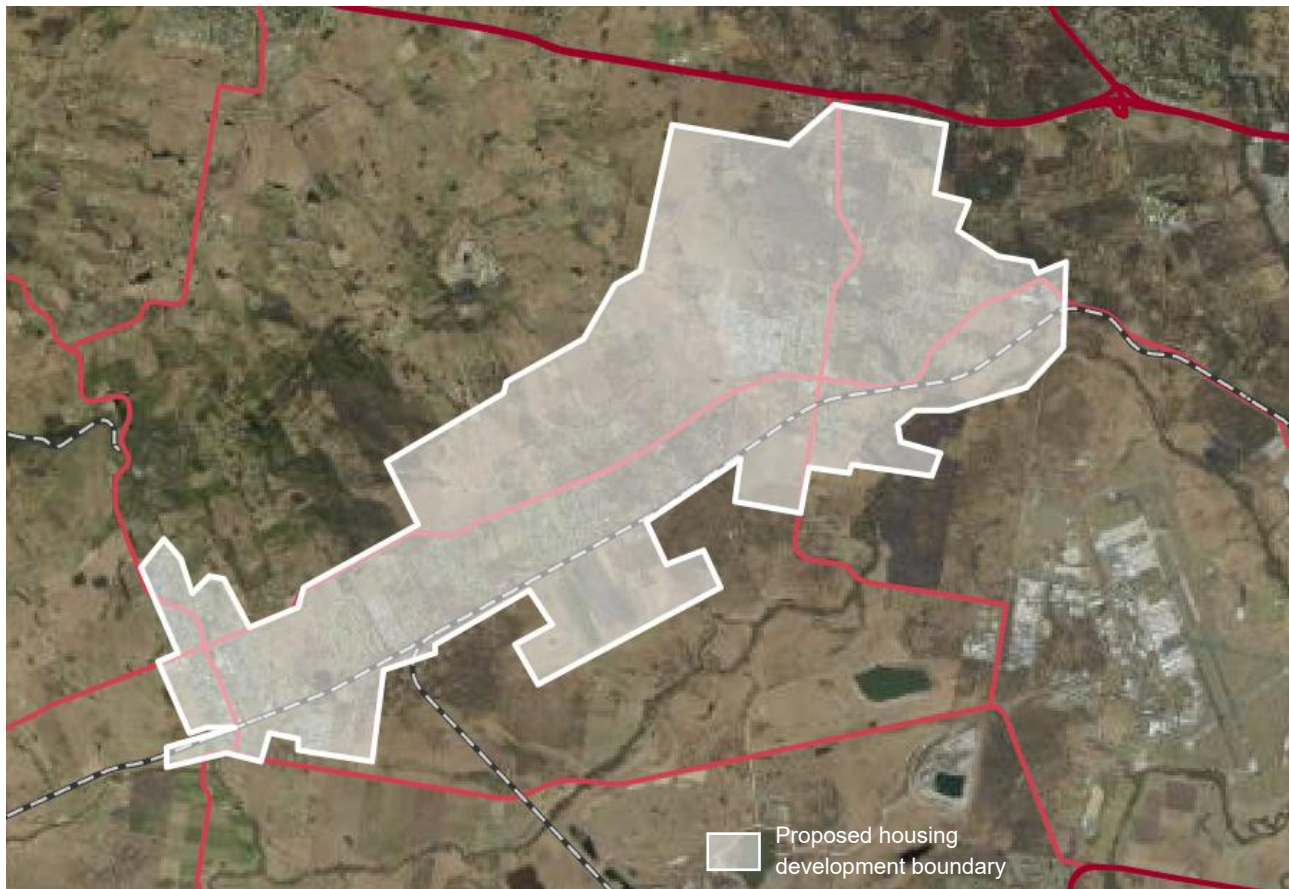


Figure 0-1: Proposed Ipswich Housing Development Plan Boundary

The mapping will be broken down into sections based on land parcel and lot and plan location.

2. Potential Environmental Constraints and Approvals

Desktop searches for potential environmental constraints and approval triggers were conducted using the following tools and databases:

- Australian Government Department of Agriculture, Water, and Environment's *Protected Matters Search Tool (PMST)*;
- Queensland Government's *Queensland Globe* spatial database
- Queensland Government Department of Environment and Science *Protected Plants Flora Survey Trigger Map*
- Queensland Government's *Queensland Heritage Register*
- Queensland Government Department of Aboriginal and Torres Strait Islander Partnerships *Aboriginal and Torres Strait Islander Cultural Heritage Database and Register*
- Ipswich City Council Planning Scheme, 2024 and associated mapping layers.

The outcomes of these searches have been provided below. The advice provided in this memo must be used to inform planning considerations, concept design, and proposed construction methodologies; however, it is not to be considered complete and must be reassessed as part of a more comprehensive environment and approvals assessment during the concept and detailed design stages of the planning development.

Federal Environmental Triggers

A search of the desk-based tool PMST was conducted using an area search with a 10-kilometer buffer applied around the total area proposed for the housing plan. A protected matters report was generated which identified the potential presence of numerous Matters of National Environmental Significance within or adjacent to the housing plan location area and buffer zone. These are summarised below:

- Wetlands of International Importance (Ramsar) – Morton Bay Ramsar site within 30-40km of Ramsar (unlikely to impact).
- Listed Threatened Ecological Communities (TECs) – Eight TECs either known to occur or many occur within the feature area.
- Listed Threatened Species – 63 species (numerous likely to be present and may need to be confirmed through fauna and habitat field surveys).
- Listed Migratory Species - 13 species (numerous likely to be present and may need to be confirmed through fauna and habitat field surveys).

There are several Listed Threatened and Migratory Species and TECs that are highly likely to occur in the proposed development area which therefore may be significantly impacted by the development. It is important, therefore, that this is confirmed through targeted flora, fauna, and suitable habitat field surveys, where required. If a residual impact assessment confirms that the impact on these species would be significant, a referral under the *EPBC Act* would be required.

State Environmental Triggers

The area, shown in Figure 0-1, has been mapped, using desk-based resources, for potential State environmental and heritage triggers. From this, the following environmental aspects, potential approvals required and recommendations, outlined in Table 1, have been identified.

Memo

Table 1: Summary of environmental trigger, constraints and potential approval requirements and recommendations

Environmental Trigger	Constraints	Approval Type	Recommendations
Protected plants	The proposed development intersects areas mapped for protected plants (see Figure 1-1 in Appendix A). The flora survey trigger map identifies high-risk areas where threatened or near threatened native plants are present or likely to be present.	Protected Plants Clearing Permit may be required under the <i>Nature Conservation Act, 1992</i> if there is to be any clearing impact on critically endangered, endangered, vulnerable or near threatened plants.	Ground truthing flora surveys will be required for all areas where the proposed development will be impacting and clearing mapped areas of protected plants. This will require a flora survey to be undertaken by a suitably qualified person who meets the qualifications, experience and skills set outlined in the flora survey guideline. Where possible it is recommended that disturbance and clearing is avoided in mapped areas of protected plants and to minimise overall vegetation clearing. Table 2 below outlines areas of the proposed development which are likely and not likely to contain protected plants.
Essential habitat map	The proposed development intersects areas mapped essential habitat (see Figure 1-2 in Appendix A).	A development approval for native vegetation clearing may be required if the development significantly impacts areas of verified essential habitat and is not exempt under the <i>Vegetation Management Act, 1999</i> and the <i>Planning Act, 2016</i> .	Ground truthing ecology surveys to map and verify areas of essential habitat will be required to determine where there is an impact to essential habitat. These must be undertaken by a suitably qualified ecologist. If the development is to have a significant impact on areas of confirmed essential habitat, then a development approval is likely to be required. Where possible it is recommended that disturbance and clearing is avoided in mapped areas of essential habitat and to minimise overall native vegetation clearing.

Regional Ecosystems	The proposed development intersects various regional ecosystems (REs) (see Figure 1-3 in Appendix A) which include: • RE 12.3.10a (endangered – dominant vegetation) – (<i>Eucalyptus populnea</i> woodland on alluvial plains). • RE 12.3.18 (endangered – dominant vegetation) – (<i>Melaleuca irbyana</i> low open forest on alluvial plains). • RE 12.3.19 (endangered – dominant vegetation) - (<i>Eucalyptus moluccana</i> and/or <i>Eucalyptus tereticornis</i> and <i>E. crebra</i> open forest to woodland, with a sparse to mid-dense understorey of <i>Melaleuca irbyana</i> on alluvial plains). • RE 12.3.3 (endangered – dominant vegetation) - (<i>Eucalyptus tereticornis</i> woodland on Quaternary alluvium). • RE (compiled) 12.3.3/12.3.3a/12.3.3d (endangered – dominant vegetation). • RE 12.3.3d (endangered – dominant vegetation). • RE 12.3.7 (Least Concern) <i>Eucalyptus tereticornis</i>, <i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i> +/- <i>Melaleuca</i> spp. fringing woodland) • RE 12.9-10.11 (Endangered – dominant vegetation) – (<i>Melaleuca irbyana</i> low open forest on sedimentary rocks).	A development approval for native vegetation clearing may be required if the development significantly impacts areas of verified regional ecosystem habitat and is not exempt under the <i>Vegetation Management Act, 1999</i> and the <i>Planning Act, 2016</i>.	Extensive field surveys targeting specific plants, habitats, and fauna species (wet and dry season, night and day) should be conducted to verify the presence/absence of these species and habitats. If the development is to have a significant impact on areas of confirmed native vegetation, then a development approval for native vegetation will be required. Table 2 below outlines areas which are likely and not likely to contain regional ecosystem habitat.
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	- RE 12.9-10.3 (Of concern) – (Eucalyptus moluccana open forest on sedimentary rocks). - RE 12.9-10.6 (Endangered – dominant vegetation) – (Acacia harpophylla open forest on sedimentary rocks). - RE 12.9-10.7 (Of concern) – (Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp. and E. melanophloia woodland on sedimentary rocks).		
Vegetation Management	The proposed development intersects areas mapped as regulated vegetation management (RVM): - Category C – high value regrowth - Category B – remnant vegetation. (see Figure 1-4 in Appendix A)	A development approval for native vegetation clearing may be required if the development significantly impacts areas of verified native vegetation and is not exempt under the <i>Vegetation Management Act, 1999</i> and the <i>Planning Act, 2016</i>.	Extensive field surveys targeting specific plants, habitats, and fauna species (wet and dry season, night and day) should be conducted to verify and ground truth the mapped remnant habitat and high value regrowth. If the development involves clearing of these areas it is likely to have a significant impact on the confirmed native vegetation areas. In this case a development approval for native vegetation will be required. The rest of the proposed development site is RVM Category X which is exempt from requiring a development application under the <i>Vegetation Management Act, 1999</i>. Table 2 below outlines areas which are likely and not likely to contain mapped areas of RVM category B or C.
Koala Habitat	The proposed development intersects mapped core koala habitat areas (see Figure 1-5 in Appendix A).	The proposed development may be subject to a development approval for development in	Field surveys targeting koalas should be carried out to determine the current population status and carrying capacity of the area to be cleared. An

		southeast Queensland koala habitat area. The project may be considered accepted development or exempt under the Accepted Development Vegetation Clearing Codes (<i>Planning Act, 2016</i>) and, if this is the case, may be exempt from approval. However, it is possible that Koala offsets may be required regardless of any exemption.	impact assessment to determine the likely impact of clearing on the koala population, is required to inform both Federal and State approvals. It is recommended to avoid, where possible, disturbing areas of core Koala habitat. Table 2 below shows areas likely and not likely to contain mapped areas of koala habitat.
Local Flying Fox roosts of the Ipswich region.	The proposed development intersects with various local Flying Fox roost sites within the Rosewood and Walloon townships. Figure 1-6 in Appendix A outlines the Flying Fox roosts within the proposed development plan boundary, identified by Ipswich City Council.	All species of Flying Foxes are protected under the <i>EPBC Act</i> and the <i>Nature Conservation Act, 1992</i> and therefore if any species have the potential to be harmed, become reduced numbers or killed during activities related to the proposed development, a development approval is likely to be required.	If Ipswich City Council wishes to undertake roost management, this must comply with the <i>Nature Conservation (Wildlife Management) Regulation, 2006</i> 'Code of Practice – Ecologically sustainable management of flying fox roosts'. Local governments have an as-of right authority under the <i>Nature Conservation Act 1992</i>, to manage flying-fox roosts in Urban Flying-Fox Management Areas (UFFMA) within each local government area. Furthermore, all persons are able to undertake low management activities for flying foxes in accordance with the 'Code of Practice— Low impact activities at flying-fox roosts'. A flying fox roost management permit may be required when undertaking management activities. All management activities must be compliant with the relevant codes of practice outlined by the Department of Environment, Tourism, Science and Innovation (DETSI) and in accordance with the relevant environmental legislation.

Matters of State Environmental Significance (MSES)	The proposed development intersects the following MSES: • MSES regulated vegetation (100m from wetland) • MSES regulated vegetation (essential habitat) • MSES regulated vegetation (Category C – endangered or of concern) • MSES regulated vegetation (Category B – endangered or of concern) • MSES wildlife habitat (SEQ koala habitat – core) • MSES wildlife habitat (special least concern) • MSES wildlife habitat (endangered or vulnerable) • MSES regulated vegetation (defined watercourse).	A development approval for native vegetation clearing may be required if the development significantly impacts areas of verified native vegetation, waterways or flora and fauna habitats and is not exempt under the <i>Vegetation Management Act, 1999</i> and the <i>Planning Act, 2016</i>.	Extensive field surveys targeting specific plants, habitats, and fauna species (wet and dry season, night and day) should be conducted to verify and ground truth the mapped MSES areas. It is recommended to avoid where possible, clearing areas of regulated vegetation and wildlife habitat.
Queensland Waterways for waterway barrier works	The proposed development intersects mapped Queensland waterways important for fish passage. It intersects various waterways categorised with different level of impacts including (See Figure 1-7 in Appendix A): • Green – Low impact waterway for waterway barrier works • Amber – Moderate impact waterway for waterway barrier works • Red – High impact waterway for waterway barrier works.	A development approval is likely to be required where any works within a waterway mapped are considered waterway barrier works. The development approval will be lodged to the Department of Primary Industries (DPI) under the <i>Fisheries Act 1994</i> and <i>Planning Act 2016</i>, unless the works fall under accepted development by adhering to the acceptable design requirements for operational work that is	Consideration needs to be given to how the waterways will be impacted by the works associated with the development. It is recommended that where possible, works should avoid occurring within the bed or banks of mapped waterways. Any waterway crossings will need to be designed in accordance with the accepted development codes for waterway barrier works, and the requirements stipulated in State Code 18 – Constructing or Raising Waterway Barrier Works in Fish Habitats.

	Purple – Major impact waterway for waterway barrier works.	constructing or raising waterway barrier works.	Table 2 below shows areas which contain mapped areas of mapped as Queensland waterways important for fish passage.
Biosecurity	The site falls within the following biosecurity zones: - Sugar cane pest Biosecurity zone 4 and 5 - Papaya ringspot Biosecurity zone 1 - Southern banana Biosecurity zone - State grape phylloxera risk zone - Fire ant biosecurity zones 1 and 2.	For the sugar cane pest, papaya ringspot, southern banana and state grape phylloxera biosecurity zones, a biosecurity permit will be required if there is any movement of soil, machinery or other material out of or between the biosecurity zones. For movement of soils, machinery or other material between the fire ant biosecurity zones, a biosecurity instrument permit will be required.	Avoid and minimise movement of soil, machinery or any material between biosecurity zones where possible. If required, ensure management plans and permits are in place for capturing and regulating all movement of material during construction.
Land Management	The proposed development does not fall within land mapped as having the potential to contain acid sulfate soils (ASS). The proposed development may be within the contaminated land register (CLR) or the environmental management register (EMR).	A soil disposal permit will be required if within the CLR or EMR to dispose and transport any soil offsite.	A geotechnical study can confirm the presence of ASS. ASS should always form part of the construction environmental management plan prior to construction and a geotechnical investigation should be undertaken as part of detailed design. It is recommended that a management plan is in place for any potential unexpected findings of ASS during construction works. Follow advice and recommendations from the geotechnical studies for scope of works and methodologies.

			Include a waste management plan as part of the construction management plans.
Transport	The proposed development intersects several state-controlled roads. A railway line runs through the proposed development overall footprint. (see Figure 1-8 in Appendix A)	A development approval is likely to be required if works cross or interfere with the state-controlled road and railway line during construction or operation. The works may be exempt depending on the scope of works and overall footprint.	It is recommended to avoid working within the state-controlled road and rail line where possible and to continue communications with the department for main roads and transport (TMR). Table 2 below outlines areas which intersect with the state-controlled road or railway line.

3. Likelihood of Environmental Constraints and Approvals by Mapped Sections

Table 2: Summary of divided polygons within the proposed area and their associated environmental risk

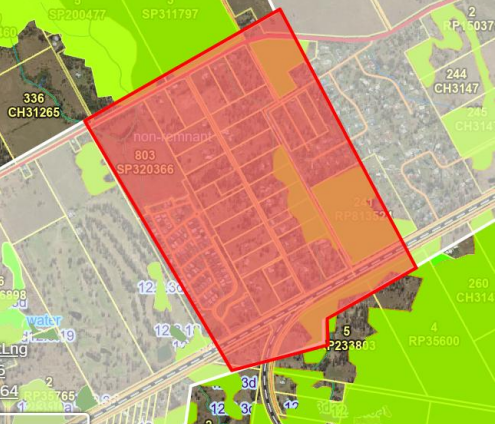
Township	Area of Township	Mapped Polygon	Land Parcels	Potential Environmental Constraints	Overall Environmental Risk and Impact on Proposed Development
Rosewood	Built up predominately residential land use area at the west of Rosewood township within the proposed development footprint. The section is bordered by the Showgrounds Lane to the east and the edge of the proposed mapped footprint to the west.	Polygon within Rosewood approximately 242 hectares (ha). 	This area is predominately residential and there are approximately 1200 land parcels in this section.	This section of Rosewood is predominately residential and built-up land use, the potential environmental constraints here are: - The edge of the footprint intersects slightly with a section of mapped remnant Category B endangered (dominant) regional ecosystem vegetation on the west side of the polygon. This section is also mapped as a high-risk area for protected plants. - Identified area for flying fox roosts within land parcel 560CC1556. - State mapped waterway important for fish passage (Moderate impact) crossing from the northeast to the southwest (open space area) of the mapped polygon.	This section of Rosewood has a relatively low environmental risk. Firstly, it is recommended that the mapped section of endangered remnant habitat to the west of the polygon, potentially containing protected plants, is avoided during development to avoid any development approval for this section. All potential management of flying fox roosting sites must be done in accordance with <i>Nature Conservation Act, 1992</i> and as per the 'Code of Practice – Ecologically sustainable management of flying fox roosts'. If inappropriate management is proposed based on proposed

				• State mapped waterway important for fish passage (Low impact) crossing land parcel 2SP165090 and joining up with the moderate impact waterway (mentioned above) in the northeast of the mapped polygon. • State mapped waterway important for fish passage (Low impact) crossing land parcel 20RP848336, joining the mapped railway line before continuing down out of the proposed development plan footprint in the southeast corner. • State mapped waterway important for fish passage (High impact) crossing land parcel 638SP157096 at the southeast section of the mapped polygon and overall footprint. • Rosewood-Marburg, Rosewood-Warrill, Ipswich-Rosewood, Rosewood-Laidley and Karrabin-Rosewood State-controlled roads mapped within this polygon.	development, then a development approval may be required. An approval may be required for working constructing and operating in the mapped waterways if the scope of works and conditions of the development do not comply with accepted development requirements outlined by DPI. The proposed development will need approval for working within the State-controlled roads which will need to be assessed by the State Assessment and Referral Agency (SARA), TMR and Queensland Rail (QR), under the <i>Planning Act, 2016</i> and the <i>Planning Regulation, 2017</i>. The proposed development will need to ensure it adheres to the local framework assessable development which can be found in the Ipswich Plan 2025.
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				- The railway line runs along the south end of this mapped polygon and Rosewood Station is also within this section. - This polygon is within the Local Area Framework – Area 26 Rosewood.	However overall, the environmental risk is low outside these few areas of potential approval and this section is likely to be able to be developed without a lengthy approvals process.
Rosewood	Low density residential and recreational open space land use zone. The polygon borders the polygon above on the west side, the edge of the proposed development footprint (north and south) and the edge of the residential area (along Alexis and Phillip Street) on the east side.	Polygon within Rosewood approximately 248 ha.	This area is a low density residential and recreational space area and there are approximately 320 land parcels in this section.	This section of Rosewood is less densely populated and contains areas of green space. The potential environmental constraints in this area are: - Six small sections of MSES regulated vegetation (100m from wetland). 11 small, fragmented sections of endangered (dominant) regional ecosystem, category B remnant vegetation. - Eight mapped high-risk areas for protected plants, mostly small sections exempt one larger section south of the railway line. - Approximately 11 small sections mapped as core Koala habitat area, mostly small, fragmented sections	This section of Rosewood has a moderate environmental risk. To the west of Hospital Road there is limited environmental risk (just one low impact waterway) and from an environmental perspective, development will be approved within these land parcels without a lengthy approvals process. However, where there are mapped areas of protected plants, koala habitat and endangered regional ecosystems with remnant vegetation, it is likely that a development approval will be required to develop and clear within these areas if verified during ground truthing survey assessment

				exempt one larger section south of the railway line. • State mapped waterway important for fish passage (Moderate impact) crossing the railway line and land parcel 2RP118313 in the southeast corner of the polygon. • State mapped waterway important for fish passage (Low impact) running down the northwest corner. • Karrabin-Rosewood State-controlled road mapped at the edge of the polygon (it is the border of the proposed development footprint in this section). • The railway line runs along the south end of this mapped polygon. • This polygon is within the Local Area Framework – Area 26 Rosewood. It should be noted that the majority of the mapped environmental constraints outlined above are fragmented and are within the middle section of this polygon or towards the east edge as shown in the map.	work. Without knowing the proposed scope of works and design plan for the development it is to be determined whether this will require a development approval for all the mapped sections as some are very small and fragmented and may not be field verified as viable protected habitat and native vegetation areas. To assess this, ground truthing and extensive ecological field surveys targeting specific habitats, flora and fauna species (wet and dry season, night and day), should be conducted to verify the presence/absence of the identified habitats, flora and fauna. An approval may be required for working constructing and operating in the mapped waterways if the scope of works and conditions of the development do not comply with accepted development requirements outlined by DPI.
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				The west is clear and zoned as low density residential.	If any work is occurring within the state-controlled road, an approval will be required which will need to be assessed by SARA, TMR and QR. The proposed development will need to ensure it adheres to the local framework assessable development which can be found in the Ipswich Plan 2025. Overall, it is recommended that, where possible, remnant endangered vegetation, core koala habitat and protected plants is not cleared. Some development in this area will be able to go ahead without approvals process but the environmental constraints are quite fragmented in this area and will need further assessment once further information of design and construction processes is given.
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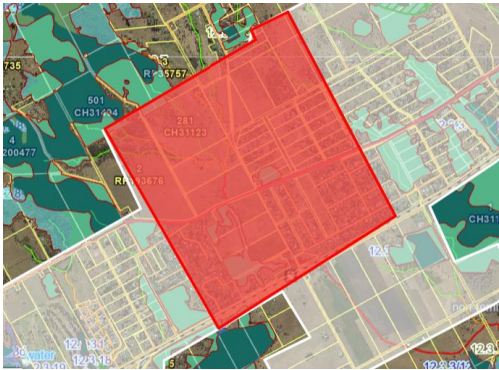
Rosewood	Predominately Emerging community land with some low density residential and environmental management land use zones. The polygon is bordered by the polygon above to the west, the edge of the proposed development footprint (north and south) and the edge of Rosewood township to the east.	Polygon within Rosewood approximately 140 ha. 	This area is an emerging community and low-density residential area and there are approximately 220 land parcels in this section.	This section of Rosewood is less densely populated with zoned areas of environmental management. The potential environmental constraints in this area are: • Mapped areas of core koala habitat, regulated vegetation Category C – high value regrowth and protected plants in the northeast corner of the polygon and a larger mapped area on either side of the railway line in the southeast corner. • State mapped waterway important for fish passage (Moderate impact) running from north to south of the polygon on the west side. • State mapped waterway important for fish passage (Low impact) in the northwest corner joining the moderate impact waterway above. • State mapped waterway important for fish passage (Low impact) running from north to south of the polygon on the east side. • Karrabin-Rosewood State-controlled road mapped	This section of Rosewood has a low to moderate environmental risk. There are large sections of this polygon where there is no environmental risk and from an environmental perspective. However, where there are mapped areas of protected plants and koala habitat and native vegetation, a development approval may be required to develop and clear within these areas. Without details of the proposed scope of works and design plan for the development it is to be determined whether this will require a development approval for all the mapped sections. In addition to this, ground truthing and extensive ecological field surveys targeting specific habitats, koala surveys and flora species, should be conducted to verify the presence/absence of the
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				along the edge of the polygon in the north coming down into the polygon in the northeast corner. • The railway line runs along the south end of this mapped polygon and joins another line heading south. • This polygon is within the Local Area Framework – Area 26 Rosewood.	identified habitats, flora and fauna. An approval may be required for working constructing and operating in the mapped waterways if the scope of works and conditions of the development do not comply with accepted development requirements outlined by DPI. Works will also need approval for working within the State-controlled road and the railway lines which will need to be assessed by SARA, TMR and QR. The proposed development will need to ensure it adheres to the local framework assessable development which can be found in the Ipswich Plan 2025. Overall, it is recommended that, where possible core koala habitat, native vegetation and protected plants verified areas are not cleared. Some development
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					in this area will be able to go ahead without approvals process, towards the centre and west of the polygon. However, the environmental constraints are quite fragmented towards the east and will need further assessment once further information of design, construction processes is given.
Thagoona	Predominately rural with some small patches of zoned environmental management land. The polygon borders the railway line in the north and the bottom of the proposed development footprint area within Thagoona township.	Polygon within Thagoona approximately 221 ha. 	This area is a rural area predominately with a few patches of environmental management land and very few residential buildings. There are approximately 27 land parcels in this section.	This section of Thagoona is relatively rural with small areas of environmental management zoned land. The potential environmental constraints in this area are: • Mapped area of protected plants, endangered regional ecosystem (Category B remnant vegetation), high value regrowth vegetation and core koala habitat on the east side of the polygon within land parcels 253CH3147, 252CH3147 and 280SP162941. • A small patch of koala habitat, high value regrowth and protected plants on the	This section of Thagoona has a relatively low environmental risk. There are predominately sections of this polygon where there is no environmental risk, and development will be approved within these land parcels from an environmental perspective. However, where there are mapped areas of protected plants, koala habitat and remnant native vegetation, it is likely that a development approval will be required to develop and clear within these areas.

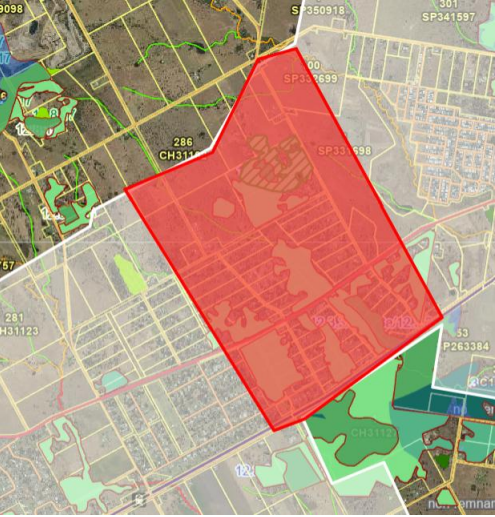
				west side within land parcel 1RP190542. • State mapped waterway important for fish passage (Low impact) crossing the following land parcels: 269CH3147, 253CH3147 and 254CH3147. • State mapped waterway important for fish passage (Moderate impact) joining up with the low impact waterway above. • State mapped waterway important for fish passage (High impact) running from north to south through the middle of the polygon through land parcels 2RP101143 and 266CH3147. • The railway line runs along the north boundary of this mapped polygon and Thagoona Station is also within this section. • This polygon is within the Local Area Framework – Area 24 Walloon and Thagoona.	Without details of the proposed scope of works and design plan for the development it is to be determined whether this will require a development approval for all the mapped sections. In addition to this, ground truthing and extensive ecological field surveys targeting specific habitats, flora and fauna species (wet and dry season, night and day), should be conducted to verify the presence/absence of the identified habitats, flora and fauna. An approval may be required for working constructing and operating in the mapped waterways if the scope of works and conditions of the development do not comply with accepted development requirements outlined by DPI. In particular, this polygon has a high impact waterway running through it which will need to be
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					considered during detailed design. Works will also need approval for working within the railway line and station which will need to be assessed by SARA and QR. The proposed development is also within the Local Framework - Area 24 Walloon and Thagoona which is proposing to facilitate growth through development of a large greenfield area between Walloon and Rosewood. Therefore, the proposed development will need to ensure it adheres to the local framework assessable development which can be found in the Ipswich Plan 2025. Overall, it is recommended that, where possible core koala habitat remnant vegetation and protected plant verified areas are avoided.
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					From an environmental perspective, development in this area will be able to go ahead outside of these patches of koala habitat, waterways, remnant vegetation and protected plant mapping.
Thagoona	Predominately emerging community with some small patches of zoned environmental management land. The polygon borders the railway line on the south side of the polygon, the edge of Thagoona township on the west and along land parcel 27RP165505 on the east of the polygon shown.	Polygon within Thagoona approximately 430 ha. 	This area is an emerging community zone with a few patches of environmental management land and very few residential buildings. There are approximately 300 land parcels in this section.	This section of Thagoona is an area identified as land for emerging community with small areas of environmental management zoned land. The potential environmental constraints in this area are: • Small, mapped area of core koala habitat, high value regrowth vegetation and protected plants, following the high impact waterway and within land parcels 245CH3147, 353CC595 and 10RP85362. • Mapped core koala habitat and protected plants in the northwest corner and a small patch within land parcel 230CH3147. • State mapped waterway important for fish passage (High impact) running from	This section of Thagoona has a relatively low environmental risk. There are large sections of this polygon which have been identified land for future development and there is no environmental risk, and development will be approved within these land parcels from an environmental perspective. However, where there are mapped areas of protected plants, koala habitat and native vegetation, there is the potential that a development approval will be required to develop and clear within these areas. Without details of the proposed scope of works and design plan for the

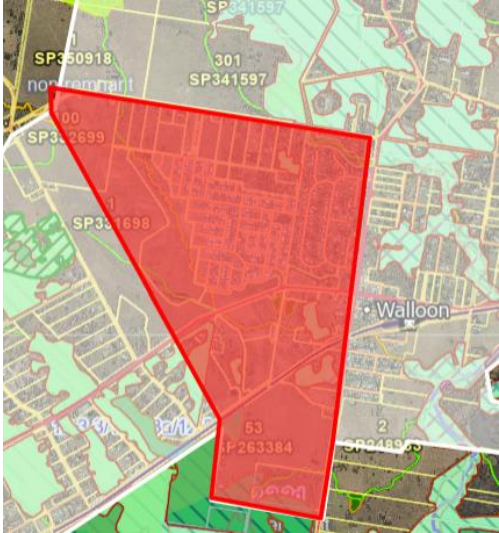
				north to south joining smaller tributaries in the northwest corner of the polygon. • State mapped waterway important for fish passage (Moderate impact) joining up with the high impact waterway above with a few tributaries in the northwest of the polygon. • State mapped waterway important for fish passage (Low impact) joining up with the high and moderate impact waterways above with a few tributaries in the northwest of the polygon. • State mapped waterway important for fish passage (Low impact) running north to south on the east side of the polygon. • Karrabin-Rosewood State-controlled road runs through the middle of the polygon. • The railway line runs along the south boundary of this mapped polygon and Thagoona Station is also within this section. • This polygon is within the Local Area Framework –	development it is to be determined whether this will require a development approval for all the mapped sections. In addition to this, ground truthing and extensive ecological field surveys targeting specific habitats, flora and fauna species (wet and dry season, night and day), should be conducted to verify the presence/absence of the identified habitats, flora and fauna. An approval may be required for working constructing and operating in the mapped waterways if the scope of works and conditions of the development do not comply with accepted development requirements outlined by DPI. Works will also need approval for working within the State-controlled road, railway line and station which will need to be
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				Area 24 Walloon and Thagoona.	assessed by SARA, TMR and QR. Overall, it is recommended that, where possible core koala habitat, native vegetation and protected plants areas are avoided. From an environmental perspective, development in this area will be able to go ahead outside of sections of verified koala habitat, waterways and protected plant species, if confirmed during field survey work, without approvals process.
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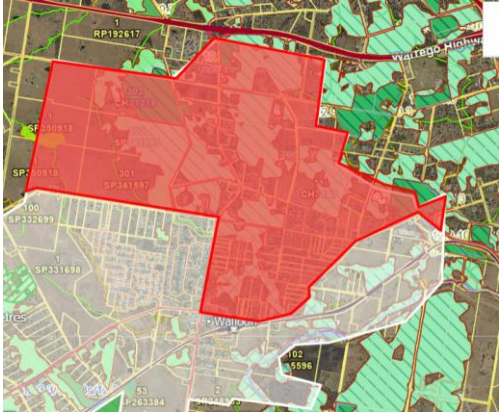
Thagoona	Predominately emerging community with strips of zoned environmental management land. The polygon borders the railway line on the south side of the polygon, the edge of Thagoona township on the east and the proposed development footprint in the north.	Polygon within Thagoona approximately 390 ha. 	This area is an emerging community zone with key patches of environmental management land and very few residential buildings. There are approximately 120 land parcels in this section.	This section of Thagoona is an area identified as land for emerging community with key areas of environmental management zoned land. The potential environmental constraints in this area are: • Karrabin Rosewood Reserve and Banyula Road Reserve contain mapped areas of protected plants, core koala habitat area and high value regrowth vegetation. • Pindari Drive Reserve contains mapped areas of protected plants, core koala habitat area and high value regrowth vegetation. • Evans Road Reserve contain mapped areas of protected plants, core koala habitat area, endangered (dominant) remnant vegetation and high value regrowth vegetation. • Mapped vegetation management wetlands map, endangered (dominant) remnant vegetation, core koala habitat and protected plants within land parcel 1RP210196.	This section of Thagoona has a relatively high environmental risk. There are sections of this polygon which have been identified as being land for emerging community and there is no environmental risk, and development will be approved within these land parcels from an environmental perspective. However, there are also substantial patches of the land which are mapped areas of protected plants, Koala habitat, remnant and native vegetation and it is likely that a development approval will be required to develop and clear within these areas. Without details of the proposed scope of works and design plan for the development it is to be determined whether this will require a development approval for all the mapped sections. In addition to this, ground truthing and extensive
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				• Core koala habitat, protected plants and high value regrowth vegetation are mapped within 2RP210196, 323SP121093 and 21SP313102. • State mapped waterway important for fish passage (Low impact) running from north to south in the centre of the polygon (through Karrabin Rosewood and Banyula Road Reserves). • State mapped waterway important for fish passage (Low impact) on the western edge and captured in the polygon above (through Pindari Drive and Evans Road Reserves). • State mapped waterway important for fish passage (Low impact) in the northeast corner of this polygon and joining up with a moderate impact waterway outside the polygon and within the Walloon township. • Karrabin-Rosewood State-controlled road runs through the middle of the polygon.	ecological field surveys targeting specific habitats, flora and fauna species (wet and dry season, night and day), should be conducted to verify the presence/absence of the identified habitats, flora and fauna. An approval may be required for working constructing and operating in the mapped waterways if the scope of works and conditions of the development do not comply with accepted development requirements outlined by DPI. Works will also need approval for working within the State-controlled roads and railway line which will need to be assessed by SARA, TMR and QR. Overall, it is recommended that, where possible, remnant vegetation (particularly within Evans Road Reserve which is a part of a larger area of endangered remnant
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				• The railway line runs along the south boundary of this mapped polygon. • This polygon is within the Local Area Framework – Area 24 Walloon and Thagoona.	vegetation), core koala habitat, native vegetation and protected plants mapped areas are not cleared during the proposed development. From an environmental perspective, development in this area will be able to go ahead outside of these patches of remnant vegetation, koala habitat, waterways and protected plant species, if confirmed during field survey work, without approvals process. However, there will be substantial portions of the area that will require development approval if significant impact due to any clearing occurs.
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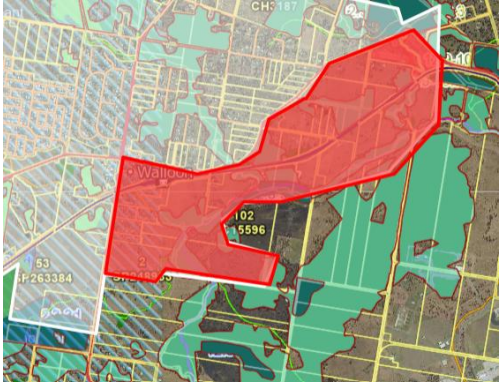
Walloon	This area has a range of land use zones, predominantly, emerging community with some small patches of rural and low density residential areas and zoned environmental management land. The polygon borders Thagoona township on the west, following Haigslea-Amberley Road to the east and the edge of the proposed development polygon to the north and south.	Polygon within Walloon approximately 380 ha. 	This area is a low residential and emerging community area with patches of environmental management land. There are approximately 1000 land parcels in this section (predominantly in the residential section in the centre of the polygon).	This section of Walloon is a low-density rural area and an area of emerging community. The potential environmental constraints in this area are: • Very small fragmented mapped areas of core Koala habitat, essential habitat, high value regrowth vegetation and protected plants trigger map, throughout the polygon as shown in the map in column 2. • Small section of endangered (dominant) category B remnant vegetation and core koala habitat in the south of the polygon within land parcels 53SP263384 and 39C15593. • State mapped waterway important for fish passage (Moderate impact) running from north to south in the centre of the polygon. • State mapped waterway important for fish passage (Low impact) on the western edge and captured in the polygon above.	This section of Walloon has a low to moderate environmental risk. There are large sections of this polygon where there is no environmental risk, and development will be approved within these land parcels from an environmental perspective. However, there are many smaller fragmented areas of mapped protected plants, koala habitat and native vegetation which will require ground truthing surveys and assessment work to verify the presence/absence of the identified habitats, flora and fauna. Without details of the proposed scope of works and design plan for the development it is to be determined whether this will require a development approval for all the mapped sections. An approval may be required for working constructing and operating
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				• Three State mapped waterways important for fish passage (Low impact) join the moderate impact waterway as tributaries within this polygon. • State mapped waterway important for fish passage (Low impact) within land parcel 39C15593 in the south of the polygon. • State mapped waterway important for fish passage (Low impact) in the east corner within land parcel 999RP197574. • Karrabin-Rosewood State-controlled road runs through the middle of the polygon and Haigslea-Amberley State-controlled road borders the polygon. • The railway line runs along the north boundary of this mapped polygon. • This polygon is within the Local Area Framework – Area 24 Walloon and Thagoona.	in the mapped waterways if the scope of works and conditions of the development do not comply with accepted development requirements outlined by DPI. Works will also need approval for working within the State-controlled roads and the railway line which will need to be assessed by SARA, TMR and QR. Overall, it is recommended that, where possible core koala habitat, remnant vegetation, high value regrowth vegetation and protected plants area, is not cleared. Some development in this area will be able to go ahead without approvals process but the environmental constraints are quite fragmented in this area and will need further assessment once further information of design, construction processes is given.
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Walloon	This area has a range of land use zones, predominantly, emerging community, rural and low density residential with some zoned areas environmental management and conservation areas. The polygon borders the edge of the proposed development footprint in the north, the edge of the previous polygon and the Karrabin-Rosewood Road in the south.	Polygon within Walloon approximately 840 ha. 	This area is a low residential, rural and emerging community area. There are approximately 230 land parcels in this section	This section of Walloon has been identified as a low-density, rural area and an area of emerging community. The potential environmental constraints in this area are: • A substantial area of the polygon is mapped for core koala habitat, essential habitat, high value regrowth from land parcel 379RP176912 down to 6SP137175 and all the vegetated area in between. • A large portion of the land parcel 302CH31218 is mapped as of concern (dominant) Category B remnant vegetation • Small sections of the following land parcels also have mapped areas of protected plants: 379RP176912, 302CH31218, 303SP341597, 301SP341597 and 70RP138359. • State mapped waterway important for fish passage (Moderate impact) running from north to south in the west of the polygon.	This section of Walloon has a moderate to high environmental risk. There are sections of this polygon which have been identified as being land for emerging community where there is no environmental risk, and development will be approved within these land parcels from an environmental perspective. However, there are also substantial patches of the land which are mapped areas of protected plants, koala habitat, remnant vegetation, high value regrowth vegetation and it is likely that a development approval will be required to develop and clear within these areas. Without details of the proposed scope of works and design plan for the development it is to be determined whether this will require a development approval for all the mapped sections.
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				• Two State mapped waterways important for fish passage (Low impact) on the western edge which join to the moderate waterway in the northern section of the polygon. • State mapped waterway important for fish passage (Moderate impact) in the east of the polygon which joins a low impact waterway which crosses the centre of the polygon. • State mapped waterway important for fish passage (Low impact) in the northeast corner of the polygon. • Known area for flying fox roosts within land parcel 20RP125600 and 50RP125627. • The following State-controlled roads are within this polygon: Haigslea-Amberley Road. Kerrabin Rosewood Road and Queen Street • The railway line runs along the north boundary of this mapped polygon and Walloon Station is also within this section.	All potential management of flying fox roosting sites must be done in accordance with <i>Nature Conservation Act, 1992</i> and as per the 'Code of Practice – Ecologically sustainable management of flying fox roosts'. If inappropriate management occurs based on the proposed development, then a development approval may be required. In addition to this, ground truthing and extensive ecological field surveys targeting specific habitats, flora and fauna species (wet and dry season, night and day), should be conducted to verify the presence/absence of the identified habitats, flora and fauna. An approval may be required for working constructing and operating in the mapped waterways if the scope of works and conditions of the development do not comply with accepted development
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				This polygon is within the Local Area Framework – Area 24 Walloon and Thagoona.	requirements outlined by DPI. Works will also need approval for working within the State-controlled roads and railway line and station which will need to be assessed by SARA, TMR and QR. Overall, it is recommended that, where possible, core koala habitat, remnant vegetation and protected plants mapped areas are not cleared during the proposed development. From an environmental perspective, development in this area will be able to go ahead without approvals outside of these patches of koala habitat, remnant vegetation waterways and protected plant species, if confirmed during field survey work. However, there will be substantial sections of the area that will require development approval if any clearing occurs.
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Walloon	This area has a range of land use zones, predominantly recreational and open space, and zoned environmental management land with some low-density residential areas also. The polygon borders the edge of the proposed development footprint in the south, the edge of the previous polygon and the and the Karrabin-Rosewood Road in the north.	Polygon within Walloon approximately 294 ha. 	There are approximately 200 land parcels in this section	This section of Walloon has been identified as an area for recreation and open space and an area environmental management land use, The potential environmental constraints in this area are: • Connected areas of the polygon are mapped along the riparian corridor of the main waterway - Bremer River and its tributaries for core koala habitat, essential habitat and high value regrowth. • There is also a small section of the riparian corridor which is remnant of concern and endangered (dominant) Category B vegetation with land parcels 102C125596, 2RP8278, 3RP8279, 3RP8280 and 103C15596. • Small fragmented mapped areas of core koala habitat, essential habitat and high value regrowth within other smaller patches of vegetation throughout the polygon. • State mapped waterway important for fish passage (Major impact) runs west to	This section of Walloon has a relatively high environmental risk. There are small sections of this polygon which have been identified as being recreational and open space land use and there is no environmental risk, and development will be approved within these land parcels from an environmental perspective. However, there are also large sections of the land which are mapped areas of koala habitat, remnant vegetation, high value regrowth, essential habitat along the Bremer river and associated riparian corridor, and it is likely that a development approval will be required to develop and clear within these areas. Without details of the proposed scope of works and design plan for the development it is to be determined whether this will require a development
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				east of the polygon – Bremer River. • State mapped waterway important for fish passage (Low impact) is a tributary of the major waterway in the southwest of the polygon within land parcel 2SP248933. • State mapped waterway important for fish passage (Moderate impact) which joins the Bremer River and crosses land parcel 1SP242735. • State mapped waterway important for fish passage (Moderate impact) which joins the Bremer River and crosses land parcels 2RP187100 and 2RP8278. • State mapped waterway important for fish passage (High impact) in the east of the polygon, crossing land parcels 1RP42425 and 2RP42425 likely tributary of the Bremer River. • Karrabin Rosewood State-controlled road is mapped bordering north of the polygon	approval for all the mapped sections. In addition to this, ground truthing and extensive ecological field surveys targeting specific habitats, flora and fauna species (wet and dry season, night and day), should be conducted to verify the presence/absence of the identified habitats, flora and fauna. An approval is likely required for working constructing and operating in the mapped waterways (in particular any works associated with the riverbed and banks of the Bremer river), if the scope of works and conditions of the development do not comply with accepted development requirements outlined by DPI. Works will also need approval for working within the State-controlled roads and railway line and station which will need to be
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				• The railway line runs along the mapped polygon and Walloon Station is also within this section. • This polygon is within the Local Area Framework – Area 24 Walloon and Thagoona.	assessed by SARA, TMR and QR. Overall, it is recommended that, where possible core koala habitat, native remnant vegetation, works within riverbed and associated banks of major waterway and tributaries are not cleared during the proposed development. From an environmental perspective, development and clearing within areas of koala habitat, waterways, high value regrowth and remnant vegetation associated with the Bremer River and riparian corridor, will require a development approval. However, there will be sections of this polygon that will not require a development approval outside these areas.
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4. Summary of Approvals, Permits and Additional Assessments Re quired

EPBC Referrals

Ground truthing and extensive fauna, flora and habitat surveys will be required to verify species and habitats which could potentially lead to an *EPBC* referral. If there is any proposed impact to Matters of National Environmental Significance (MNES) an *EPBC Act* self-assessment of significance of impacts will need to be undertaken by a suitably qualified person, to determine whether significant impacts are likely to happen as a result of the development and whether an *EPBC* referral submission is required. In general, allow 8-12 months to receive a decision for the assessment approach and up to 2+ years for controlled action approval.

Therefore, during detail design it is advised that the development and associated impact should avoid and minimise its environmental impact to avoid triggering and requiring a *EPBC* referral. This can be done by ensuring that environmental specialists are involved in the process from option assessments to detailed design stages to flag any likely triggers that may require an *EPBC* referral.

Waterways for Fish Passage

For any proposed operation, alterations to alignment, clearing and construction works associated with Queensland mapped waterways, a pre-lodgement meeting will need to be undertaken with SARA to confirm whether the proposed development will trigger the requirement for a development approval. For each separate waterway impacted by the proposed development either a separate pre-lodgement application will be required, or the waterways can be outlined separately in the one pre-lodgement application. This will need to include as much detail as possible on the proposed development design, methodology and proposed management and mitigation measures to inform DPI and help them make a decision. Where the development is not projected to impact any waterways, the pre-lodgement application must make it clear that the proposed development will adhere to the Accepted Development Requirements (ADR) under the *Planning Act, 2016* and the *Fisheries Act, 1994*.

Where a development approval application is required, which is likely for this proposed development due to the number of waterways that intersect the project, environmental supporting documentation will need to be prepared which will outline how the proposed development is likely to impact the waterways and the management and mitigation measures that will be put in place. This will be assessed by SARA against the performance outcomes or acceptable outcomes within the State Development Assessment Provisions (SDAP) State Code 18 - Constructing or raising waterway barrier works in fish habitats, under the *Planning Act, 2016*. As much detail will be required as possible including detailed design on all waterway barriers, proposed management measures, detailed drawings on how the proposed development will intersect with the waterways and the total impact footprint where it impacts the waterways and sent to SARA where it will be assessed by DPI.

A development approval process once all information is received and collated can take up to 3-6 months to complete, however this project may take longer as it is intersecting many waterways and may have a significant impact on these.

Koala Habitat

For any proposed development within a koala habitat area, extensive ground truthing surveys will be required to confirm likelihood of koala habitat. If any clearing is required within confirmed koala habitat areas and does not meet exemptions or accepted development requirements then a development approval will be required under the *Planning Act, 2016* and *Nature Conservation (Koala) Conservation Plan 2017* for significant residual impact on koala habitats.

At this point in the proposed development, it is unknown whether the works will fall under exempt development or whether the area will be under the allowed total area of koala habitat clearing. An ecological impact assessment will need to be undertaken which will include reporting on koala habitat field surveys and the significance of impact using the total construction and operation footprint plus study area buffer. Due to the nature of the land use, there is the potential that some of the desk-based mapped koala habitat areas outlined above will fall under exemptions for clearing as the area is very small with limited corridor movement. However, there are also areas that are important for linking koala habitat north and south of the proposed development. In particular, the middle section where the proposed development runs between the Stirling Road Reserve to the north and the Bremer River to the south, it is recommended that connectivity measures are put in place to ensure that safe koala movement can occur minimising fragmentation of between connected patches. This would involve including retrofit ledges to some of the culverts and fauna corridors across the road and railway lines. Furthermore, this is in line with the performance outcome 3.2, in the Local Framework – Area 26 Rosewood, which states development should conserve and enhance areas of vegetation, wildlife habitat and linkages particularly along the Bremer River and Western Creek to the south of Rosewood.

If a development approval is required for any sections of koala habitat clearing it will be assessed against the performance outcomes or acceptable outcomes within the SDAP State code 25 - Development in southeast Queensland koala habitat areas, under the *Planning Act, 2016*. These performance outcomes include ensuring that unacceptable impact on koala habitat does not occur and that connectivity and safe koala habitat is maintained. In addition to ensuring the total koala habitat clearing area is minimised and maintaining connectivity, management measures will also be likely to require offsets, where clearing cannot be avoided, to ensure that the residual impact is not significant.

If a development approval is required for any sections of koala habitat clearing it will be assessed against the performance outcomes or acceptable outcomes within the SDAP State code 25 - Development in southeast Queensland koala habitat areas, under the *Planning Act, 2016*. A development approval for this application is likely to take at least 3-6 months and it is recommended that one combining environmental document is pulled together outlining all the environmental impacts, required development approvals, management measures and significance of impact.

Native Vegetation

All proposed development and associated clearing within native and remnant vegetation, protected plants or wildlife habitat, will need to ensure that extensive ground truthing surveys are undertaken to confirm presence of habitats, protected flora species and native vegetation based on desk-based resources. Clearing within verified areas of native vegetation and protected plants will need to either meet exemptions, or accepted development requirements, otherwise a development approval will be required under the *Planning Act, 2016* and the *Vegetation Management Act, 1999*.

At this point in the project and the information known about the proposed development, it is unknown what the impact will be on native vegetation and therefore further information will be required for a more detailed environmental impact assessment. An ecological assessment will need to be produced, once field work is complete, outlining significance of impact on protected plants, habitats and native vegetation and will use the

total construction and operation footprint plus study areas buffer. As part of the ecological surveys, a flora survey will need to be undertaken by a suitably qualified person who meets the qualifications, experience and skills set out in the flora survey guideline (*Nature Conservation Act, 1999*). If protected plants are going to be impacted, then a protected plants permit will need to be obtained in addition to the development approval under the *Nature Conservation Act, 1999*. Clearing will need to be done within 12 months from the flora survey assessment.

If a development approval is required for any sections of vegetation clearing it will be assessed against the performance outcomes or acceptable outcomes within the SDAP State code 16 – Native vegetation clearing, under the *Planning Act, 2016*. This application will need to detail how the development is avoiding native vegetation where possible, and where not possible that management and mitigation measures have been put in place to minimise the impact to native vegetation. A development approval for this application is likely to take at least 3-6 months and, as outlined above, it is recommended that one combining environmental document is pulled together outlining all the environmental impacts, required development approvals, management measures and significance of impact.

State Controlled Roads and Railway Lines

The proposed development intersects various state-controlled roads, railway lines and stations and therefore it is likely that a development approval will be required for development in a state-controlled road and railway environments, under the *Planning Act, 2016* and the *Planning Regulation, 2017*. SARA, as the referral agency, will need to assess the development against the State Code 1 – Development in a state-controlled road environment and State Code 2 – Development in a railway environment, to ensure the safety and efficiency of the existing and future state transport corridors and infrastructure. If a development approval is required TMR and QR will assess these under the *Planning Act, 2016* and the *Planning Regulation, 2017*.

Anywhere where the proposed development has the potential to impact existing or future state transport corridor and infrastructure, it will need to be assessed by SARA and a development approval will be required. The supporting documentation will need to include the State Code 1 and State Code 2 forms outlining how the proposed development will not impact structural integrity of infrastructure, increase likelihood or frequency of accidents or fatalities, the state's ability to plan, construct, maintain, upgrade or operate railway corridors or impact function efficiency.

A development approval for both application is likely to take at least 3-6 months to complete once all relevant information is pulled together for SARA to assess. It is recommended that the supporting documentation is combined in one document for both these triggers under the *Planning Act, 2016*. This will need to include details on how the proposed development will intersect the state-controlled road corridors and how it will be built around the current and future infrastructure.

Other Permits

During construction, if there is any movement of soil, machinery or other material out of or between the biosecurity zones, it is likely that a biosecurity permit or biosecurity instrument permit will be required for each the five biosecurity zones that the proposed development intersects with.

If the proposed development falls within the CLR or the EMR then a soil disposal permit will be required for the transport of any material from the site. This will detail the soil removal process, volume, transport and treatment and/or disposal process and associated management measures.

A flying fox roost management permit (FFRMP) may be required if Ipswich City Council want to undertake management actions at a roost site outside of an urban flying fox management area as determined by the *Nature Conservation (Wildlife Management) Regulations 2006*, or if the management actions are outside the scope of the code of practice.

Local Council Frameworks

The proposed development intersects the Local Framework – Area 26 Rosewood and Area 24 Walloon and Thagoona. These frameworks outline the assessable development and associated performance outcomes for the specific areas within Ipswich which will need to be addressed and adhered to as part of the overall project design and development.

Yours sincerely,

Bethany Lilly

Senior Environmental Consultant – Environmental Planning and Management

Appendix A

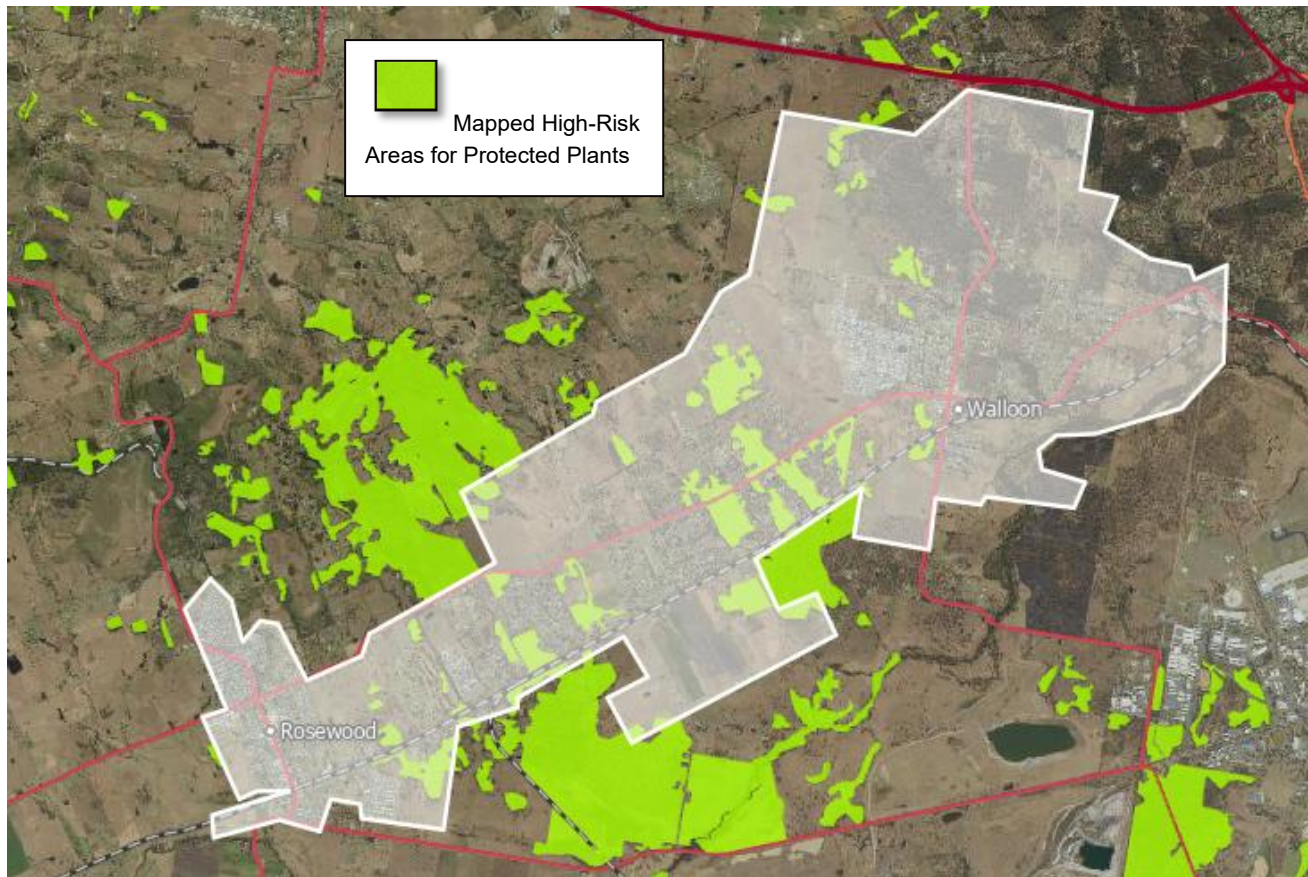


Figure 1-1: Proposed Development Site with Mapped High-Risk Areas for Protected Plants

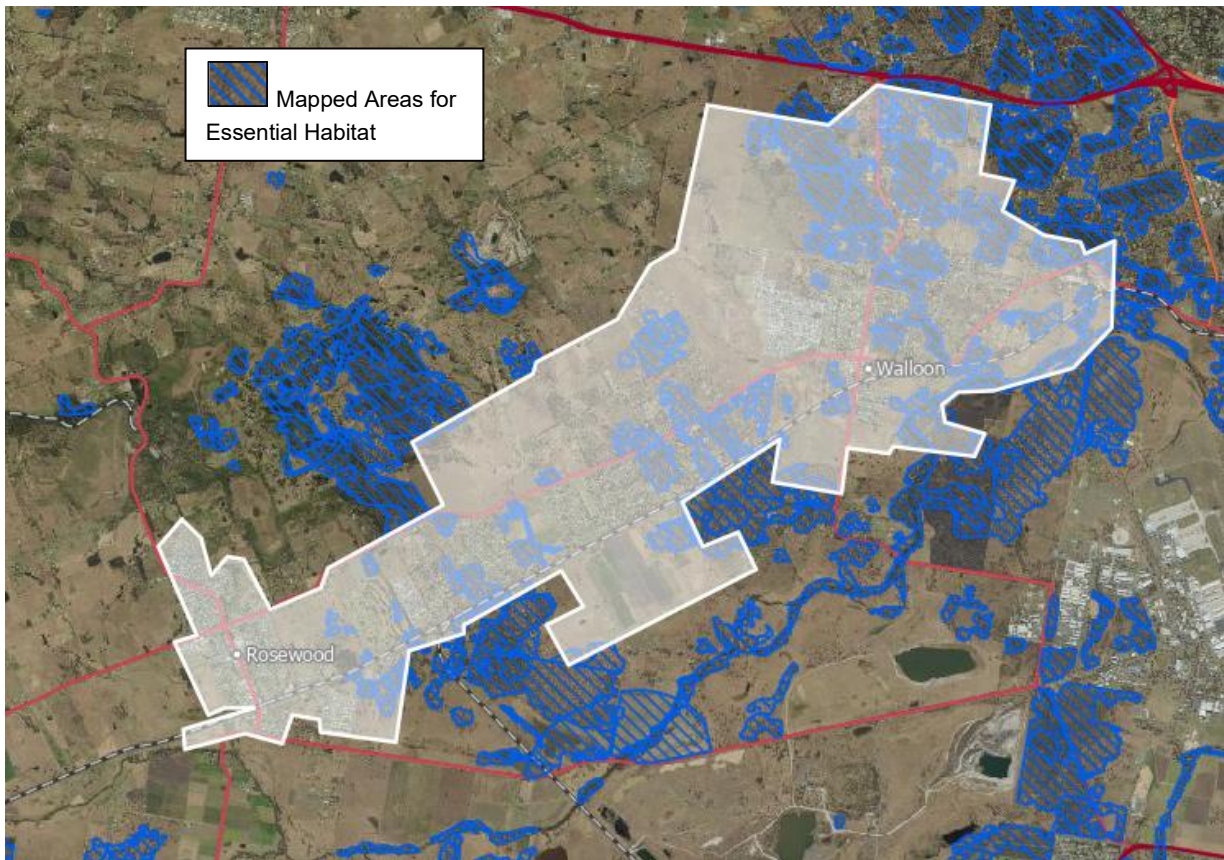


Figure 1-2: Proposed Development Site with Essential Habitat Mapping

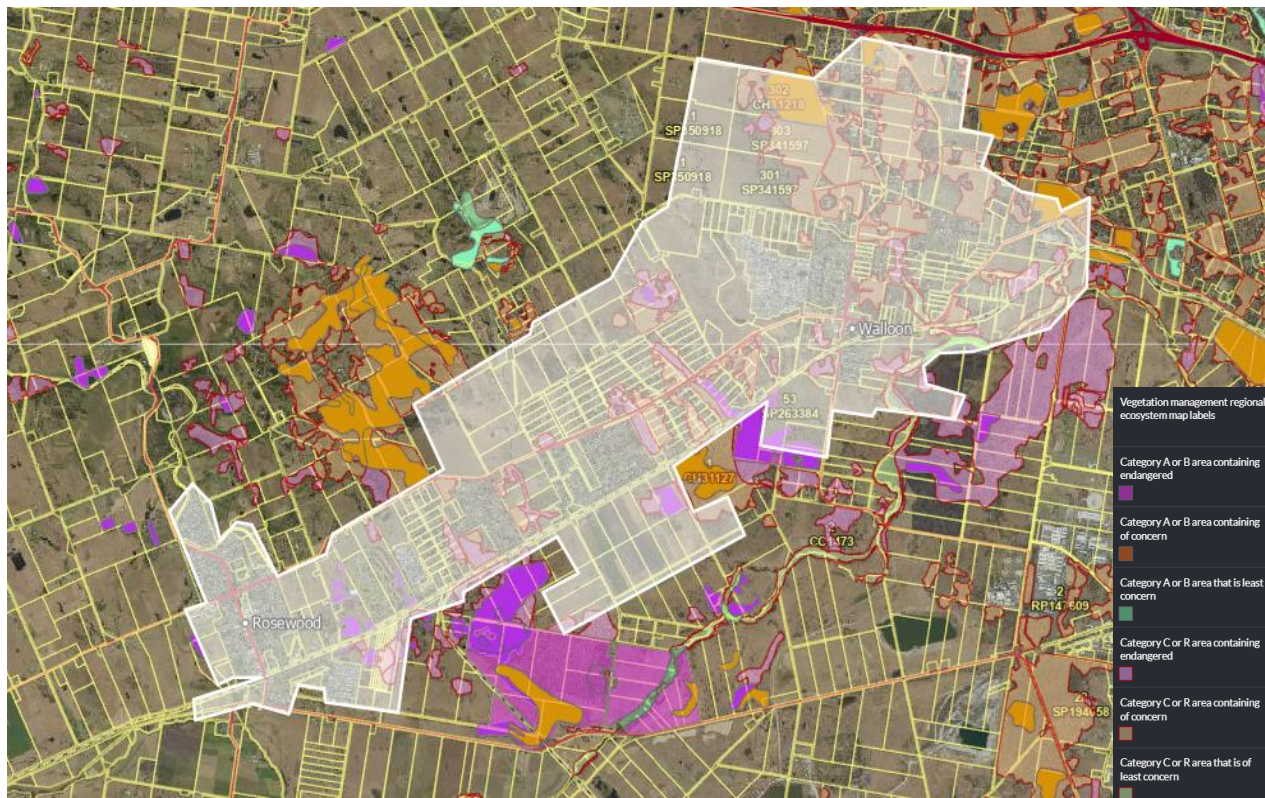


Figure 1-3: Proposed Development Site with Regional Ecosystem Mapping

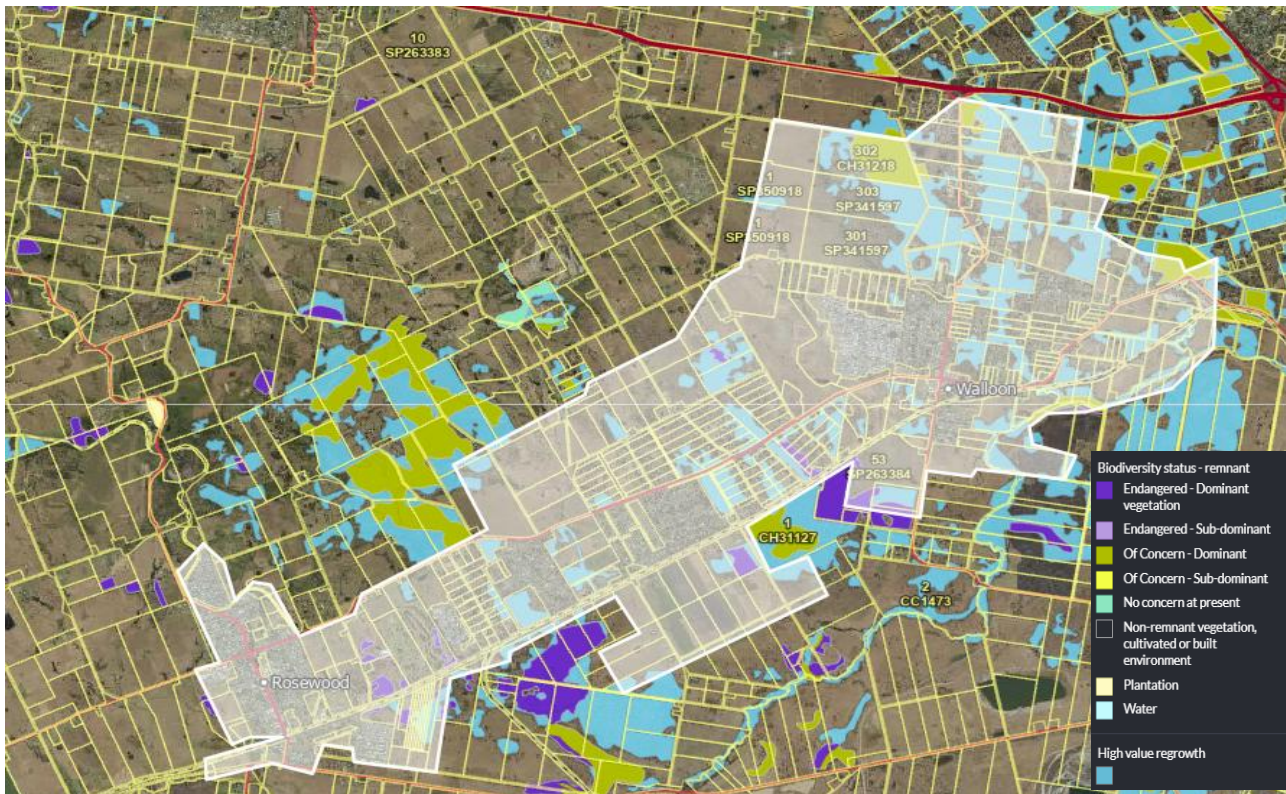


Figure 1-4: Proposed Development Site and Remnant Vegetation and High Value Regrowth

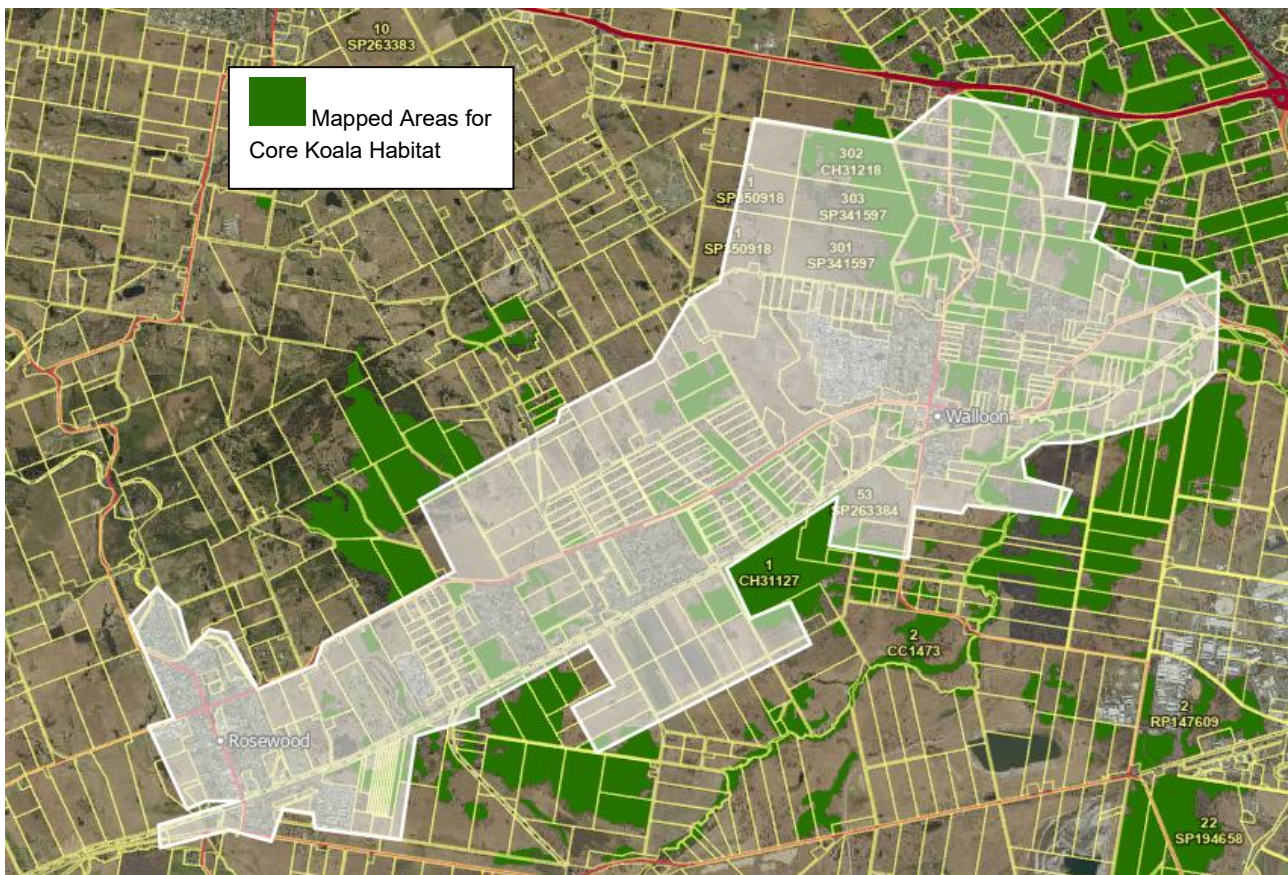


Figure 1-5: Proposed Development Site and Mapped Core Koala Habitat Areas

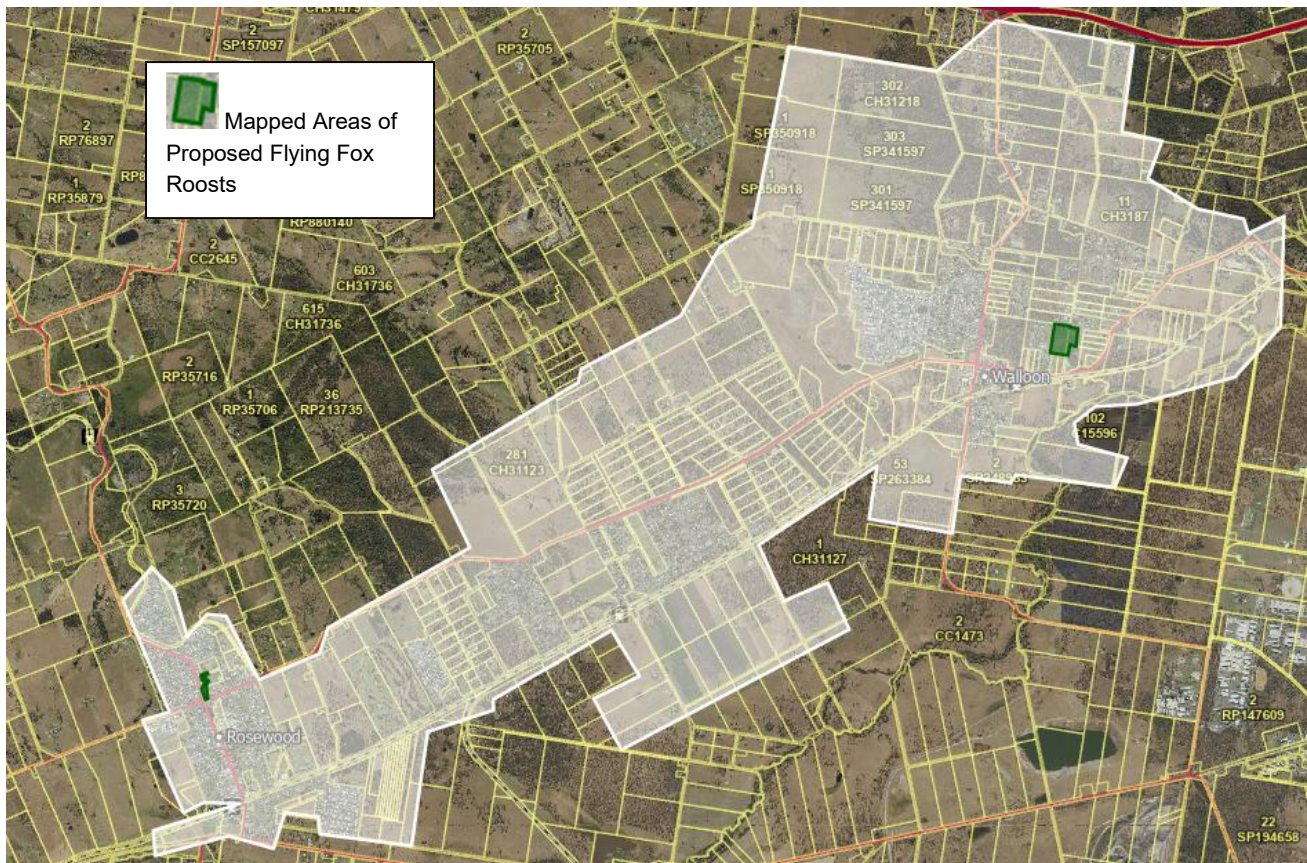


Figure 1-6: Proposed Development Site and Mapped Proposed Flying Fox Roost Sites

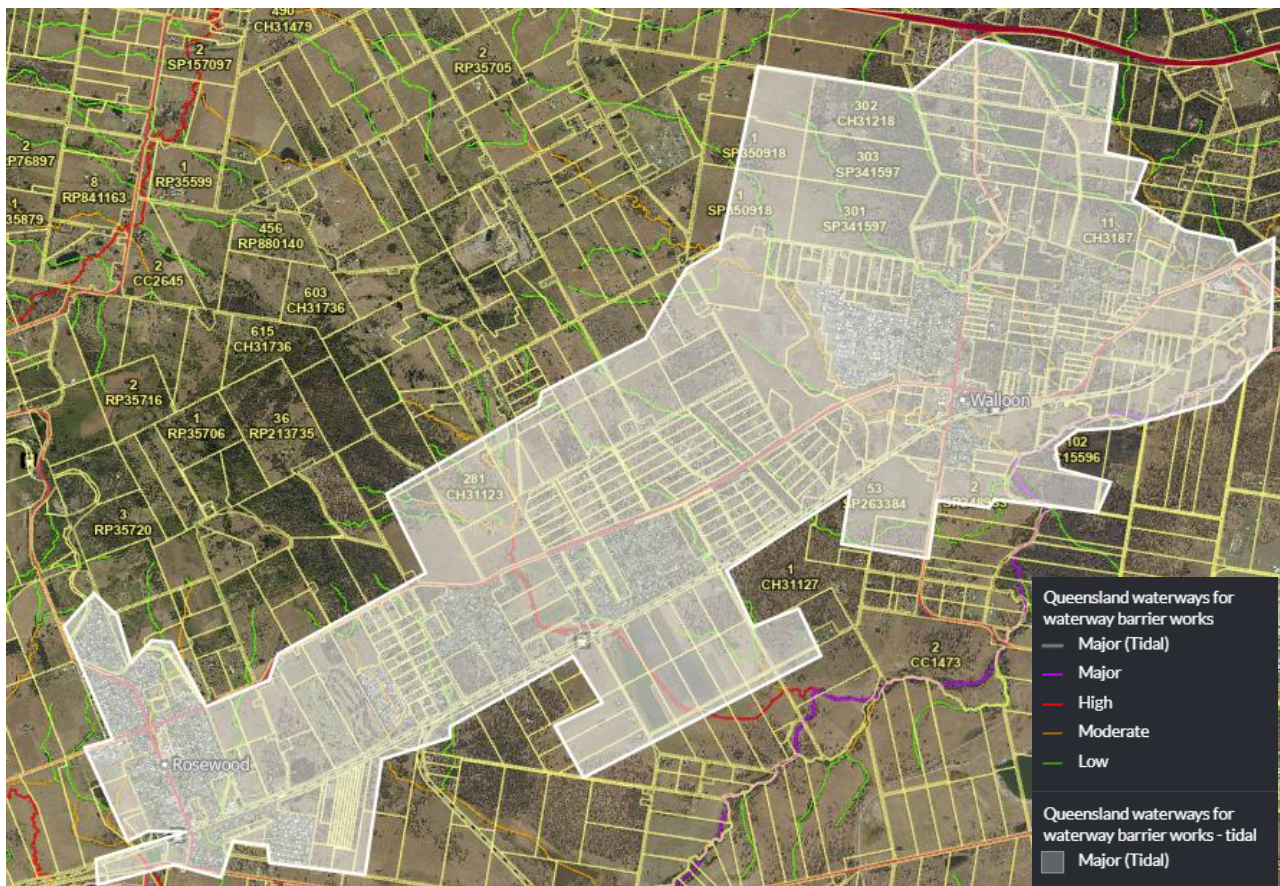


Figure 1-7: Proposed Development Site and Mapped Queensland Waterways for Waterway Barrier Works

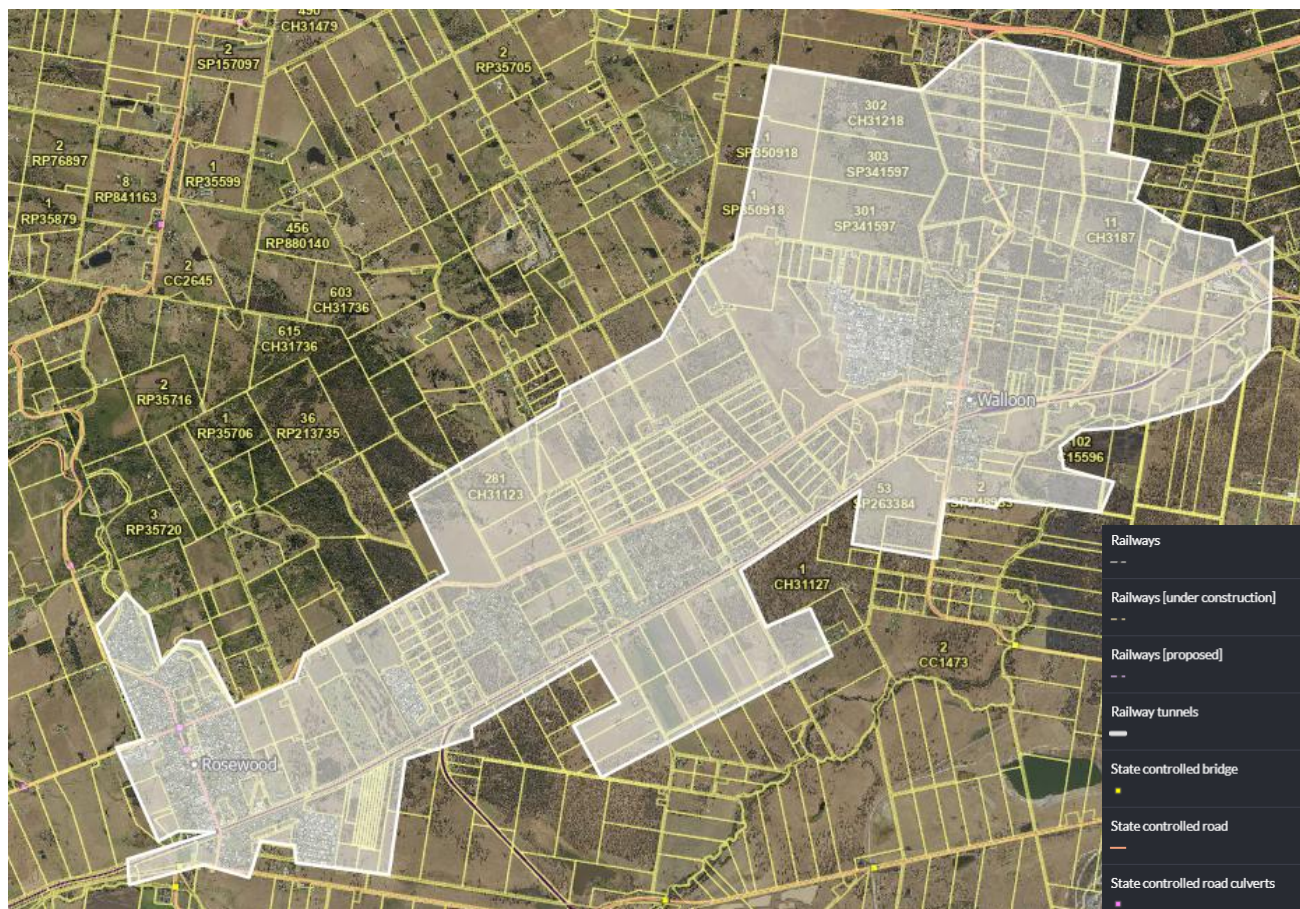


Figure 1-8: Proposed Development Site and Mapped State-Controlled Roads and Railway Lines