ENVIRONMENTAL SCOPING DOCUMENT

Proposal name:	**Great Southern Landfill at Allawuna Farm Lots 4869, 5931, 9926 and 26934 Great Southern Highway, St Ronans**
Proponent:	**Alkina Holdings Pty Ltd**
Assessment number:	**2204**
Location:	**80 km east of Perth**
Local Government Area:	**Shire of York**
Public review period:	**Environmental Review Document – 5 weeks**

1. Introduction

The above Proposal is being assessed by the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986* (EP Act).

The purpose of the Environmental Scoping Document (ESD) is to define the form, content, timing and procedure of the environmental review, required by s. 40(3) of the EP Act. This draft ESD has been prepared by the EPA in consultation with the proponent, decision-making authorities and interested agencies consistent with the EPA's *Procedures Manual*.

Form

The EPA requires that the form of the report on the environmental review required under s. 40 (Environmental Review Document, ERD) is according to the Environmental Review Document template.

Content

The EPA requires that the environmental review includes the content outlined in sections 2 to 6 of this ESD.

Timing

Table 1 sets out the timeline for the assessment of the Proposal agreed between the EPA and the proponent.

Table 1 Assessment timeline

Key assessment milestones	Completion Date
EPA approves Environmental Scoping Document	29 August 2019
Proponent submits first draft Environmental Review Document (ERD)	7 November 2019
EPA provides comment on first draft ERD *(6 weeks from receipt of ERD)*	19 December 2019
Proponent submits revised draft ERD	9 January 2020
EPA authorises release of ERD for public review *(2 weeks from EPA approval of ERD)*	23 January 2020
Proponent releases ERD for public review for 5 weeks	23 January 2020
Close of public review period	27 February 2020
Proponent provides Summary of Submissions *(3 weeks from close of public review period)*	19 March 2020
Proponent provides Response to Submissions	16 April 2020
EPA reviews the Response to Submissions *(4 weeks from receipt of Response to Submissions)*	14 May 2020
EPA prepares draft assessment report and completes assessment *(6 weeks from EPA accepting Response to Submissions)*	25 June 2020
EPA finalises assessment report (including two weeks consultation on draft conditions) and gives report to Minister *(6 weeks from completion of assessment)*	6 August 2020

Procedure

The EPA requires the proponent to undertake the environmental review according to the procedures in the *Administrative Procedures* and the *Procedures Manual*, including requirements for public review.

This draft ESD is not required to be released for public review. The ESD will be available on the EPA website (www.epa.wa.gov.au) upon endorsement and must be appended to the ERD.

2. The proposal

On 27 December 2012, the Proposal (known then as the Allawuna Landfill) was referred to the EPA under section 38 of the EP Act by a third party. On 8 July 2013, the EPA determined not to assess the Proposal under Part IV of the EP Act. This decision was subject to 31 appeals, which were all dismissed by the previous Minister for Environment.

Since this determination, new information on emerging issues for landfills in southern Western Australia has become available. This includes the increase in feral animals that are attracted to landfills, and the subsequent impact these feral animals have on nearby native fauna; and the need for more rigorous study requirements to understand the hydrogeological aspects of landfills. In light of this new information, on 28 March 2019, the Minister for Environment directed the EPA to assess the Proposal. The EPA has developed this ESD considering these emerging issues but has also taken into account the site-specific factors such as surficial geology and location to sensitive receptors.

The EPA sought public comment on the level of assessment for the proposal from 10 to 17 April 2019. The EPA decided that the assessment of the proposal is to be undertaken by way of a Public Environmental Review, with a five-week public review period, and the EPA shall prepare the ESD. The Proposal will be assessed in accordance with the procedures set out in the EPA's Administrative Procedures and sections 40 to 48 of the EP Act shall apply to the reassessment.

The subject of this ESD is a Proposal by Alkina Holdings Pty Ltd to construct and operate the Great Southern Landfill (the Proposal), located on Allawuna Farm lots 4869, 5931, 9926 and 26934 Great Southern Highway, St Ronans. The regional location of the proposal is shown in Figure 1.

The landfill would receive 150,000 to 250,000 tonnes per annum of Class II or III waste, with a lifetime capacity of approximately 5.6 million cubic metres. The cells for the landfill would be developed in stages, with the construction of up to seven cells. The Proposal is for the construction of landfill cells and associated infrastructure including stormwater dam, leachate ponds, retention pond, sediment management structure, upgrade to the intersection of the site access road and Great Southern Highway, access road to the landfill, dual lane creek crossing over Thirteen Mile Brook and administration facilities.

The development envelope encompassing the physical elements of the Proposal is shown in Figure 2. The key characteristics of the proposal are set out in Tables 2 and 3. The key proposal characteristics may change as a result of the findings of studies and investigations conducted and the application of the mitigation hierarchy by the proponent.

The EPA determined the preliminary key environmental factors to be included in this ESD are:

- Flora and Vegetation
- Terrestrial Fauna
- Terrestrial Environmental Quality
- Inland Waters

- Social Surroundings.

These are discussed further in Section 4 below.

Table 2 Summary of the proposal

Proposal title	Great Southern Landfill at Allawuna Farm Lots 4869, 5931, 9926 and 26934 Great Southern Highway, St Ronans
Proponent name	Alkina Holdings Pty Ltd
Short description	Construction and operation of a landfill and associated infrastructure for receiving Class II or III waste of 150,000 to 250,000 tonnes per annum. The landfill is located approximately 80 kilometres east of Perth.

Table 3 Location and proposed extent of physical and operational elements

Element	**Location**	**Proposed extent**
Physical elements		
Landfill cells and supporting infrastructure (stormwater dam, leachate ponds, retention pond, sediment management structure, office)	Figure 2	Clearing of no more than 50 hectares (ha) of mostly cleared farmland within the 1500 ha development envelope

3. Preliminary key environmental factors and required work

The preliminary key environmental factors for the environmental review are:

1. Flora and Vegetation
2. Terrestrial Fauna
3. Terrestrial Environmental Quality
4. Inland Waters
5. Social Surroundings.

Table 4 outlines the work required for each preliminary key environmental factor and contains the following elements for each factor:

- **EPA factor** and **EPA objective** for that factor.
- **Relevant activities** – the Proposal activities that may have a significant impact on that factor.
- **Potential impacts and risks** to that factor.
- **Required work** for that factor.
- **Relevant policy and guidance** – EPA (and other) guidance and policy relevant to the assessment.

Table 4 Preliminary key environmental factors and required work

Flora and Vegetation	
EPA objective	To protect flora and vegetation so that biological diversity and ecological integrity are maintained.
Relevant activities	Clearing of scattered remnant vegetation, which includes scattered Marri, Wandoo, Flooded Gum and Sheoak trees for the landfill and associated infrastructure.
Potential impacts and risks	Loss of habitat for Carnaby's, Baudin's and Forest Red-tailed black cockatoos and potential impact of clearing on surface water quality and/or flows.
Required work	1. Identify and characterise the flora and vegetation within the development envelope in accordance with the requirements of EPA Guidance. This shall include: a. review of available survey reports, relevant databases and spatial data b. identification of significant flora species, vegetation units, vegetation condition and habitat c. review of the significance of the flora and vegetation d. figures showing the location of significant flora species, vegetation units in relation to the indicative footprint. Biodiversity survey reports submitted should be accompanied by an electronic appendix known as the Index of Biodiversity Surveys for Assessments (IBSA) data package. 2. Assess the direct, indirect and cumulative impacts on significant flora and vegetation. 3. Demonstrate that the Proposal has addressed the mitigation hierarchy. This includes demonstrating that the Proposal has been designed to avoid and minimise impacts on flora and vegetation and the placement of infrastructure and the landfill has had regard to existing cleared areas. 4. Identify management measures to ensure impacts are not greater than predicted. 5. Discuss the closure and rehabilitation measures to be implemented, and outcomes/objectives to be achieved. 6. Determine and quantify any significant residual impacts by applying the Residual Impact Significance Model (page 11) and WA Offset Template (Appendix 1) in the WA Environmental Offsets Guidelines (2014). 7. Where significant residual impacts remain, propose an offsets package that is consistent with the WA Environmental Offsets Policy and Guidelines. Spatial data defining the area of significant residual

	impacts for each environmental value should also be provided (e.g. vegetation type, vegetation condition, specific fauna species habitat). 8. Demonstrate and document in the ERD how the EPA's objective for this factor can be met.
Relevant policy and guidance	***EPA Policy and Guidance*** Statement of Environmental Principles, Factors and Objectives (EPA 2018) Environmental Factor Guideline: Flora and Vegetation (EPA 2016) Technical Guidance: Flora and vegetation surveys for environmental impact assessment (EPA 2016) Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA) (EPA 2018) Guidance Statement No. 6: Rehabilitation of Terrestrial Ecosystems (EPA 2006) ***Other policy and guidance*** WA Environmental Offsets Policy (Government of Western Australia 2011) WA Environmental Offsets Guidelines (Government of Western Australia 2014)

Terrestrial Fauna	
EPA objective	To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.
Relevant activities	• Clearing of native vegetation for the landfill and associated infrastructure. • Operation of the landfill.
Potential impacts and risks	Clearing of native vegetation may impact on habitat for Carnaby's, Baudin's and Forest Red-tailed black cockatoos. The operation of the landfill may attract feral animals to the area, which in turn may impact on the native fauna that reside in the surrounding conservation reserves.
Required work	9. Identify and characterise the terrestrial fauna in accordance with the requirements of Technical Guidance on Terrestrial Fauna Surveys for Environmental Impact Assessment (EPA 2016). This shall include: a. review of available survey reports, relevant databases and spatial data b. identification of significant fauna species and habitat c. figures showing the location of significant fauna species and habitat in relation to the indicative footprint d. baseline feral animal survey.

	Biodiversity survey reports submitted should be accompanied by an electronic appendix known as IBSA data package. 10. Assess the potential for increased feral animal activity and likely impacts as a result of the Proposal. 11. Identify the extent of direct, indirect and cumulative impacts on significant terrestrial fauna species and habitat on and surrounding the development envelope. 12. Demonstrate that the Proposal has addressed the mitigation hierarchy. 13. Identify management measures to ensure impacts are not greater than predicted. This shall include preparation of an Environmental Management Plan for feral animals. The Plan shall include a description of the best practice management measures to: a. prevent feral animals from entering the site b. minimise the number of feral animals attracted to the site c. eradicate, where practicable, feral animals within the development envelope. The Plan shall specify environmental objectives, management targets, management actions, monitoring and reporting measures. 14. Discuss the closure and rehabilitation measures to be implemented, and outcomes/objectives to be achieved. 15. Determine and quantify any significant residual impacts by applying the Residual Impact Significance Model (page 11) and WA Offset Template (Appendix 1) in the WA Environmental Offsets Guidelines (2014). 16. Where significant residual impacts remain, propose an offsets package that is consistent with the WA Environmental Offsets Policy and Guidelines. Spatial data defining the area of significant residual impacts for each environmental value should also be provided (e.g. vegetation type, vegetation condition, specific fauna species habitat). 17. Demonstrate and document in the ERD how the EPA's objective for this factor can be met.
Relevant policy and guidance	***EPA Policy and Guidance*** Statement of Environmental Principles, Factors and Objectives (EPA 2018) Environmental Factor Guideline: Terrestrial Fauna (EPA 2016) Technical Guidance: Terrestrial Fauna Surveys (EPA 2016) Technical Guidance: Sampling methods for terrestrial vertebrate fauna (EPA 2016) Technical Guidance: Sampling of short range endemic invertebrate fauna (EPA 2016)

	Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA) (EPA 2018) Instructions on how to prepare *Environmental Protection Act 1986* Part IV Environmental Management Plans (EPA 2018) ***Other policy and guidance*** WA Environmental Offsets Policy (Government of Western Australia 2011) WA Environmental Offsets Guidelines (Government of Western Australia 2014)

Terrestrial Environmental Quality	
EPA objective	To maintain the quality of land and soils so that environmental values are protected.
Relevant activities	Excavation for the landfill, installation of basal lining system, acceptance of waste to the landfill, leachate storage and the operation of machinery.
Potential impacts and risks	Contamination of soil may occur from: • leachate seepage from the landfill and evaporation ponds, and overtopping of the ponds. • hydrocarbon and chemical spills from equipment and machinery.
Required work	18. Characterise the baseline geology and geotechnical attributes at the site. 19. Demonstrate conformance with recognised design criteria for containment cell design. The design of cells shall ensure long term encapsulation of waste that reduces risk to the environment and environmental values to an acceptable level. 20. Provide a Stability Risk Assessment to determine the potential stability risks and engineering requirements for the landfill. 21. Identify the direct and indirect impacts of the Proposal on the land and soil within and surrounding the development envelope. 22. Demonstrate that the Proposal has addressed the mitigation hierarchy. 23. Identify management measures to ensure residual impacts are not greater than predicted. This shall include measures to: a. manage leachate from the landfill and evaporation ponds b. manage hydrocarbon and chemical spills from equipment and machinery c. minimise impacts on the land and soil from the Proposal.

	24. Provide a comprehensive water balance for the operation of landfill cells and wastewater ponds for a range of climatic conditions on at least a monthly basis using a suitable methodology to demonstrate that leachate from the facility can be adequately managed without discharge to the environment. 25. Discuss the closure and rehabilitation measures to be implemented, and outcomes/objectives to be achieved. 26. Determine and quantify any significant residual impacts by applying the Residual Impact Significance Model (page 11) and WA Offset Template (Appendix 1) in the WA Environmental Offsets Guidelines (2014). 27. Where significant residual impacts remain, propose an offsets package that is consistent with the WA Environmental Offsets Policy and Guidelines. Spatial data defining the area of significant residual impacts for each environmental value should also be provided (e.g. vegetation type, vegetation condition, specific fauna species habitat). 28. Demonstrate and document in the ERD how the EPA's objective for this factor can be met.
Relevant policy and guidance	***EPA Policy and Guidance*** Statement of Environmental Principles, Factors and Objectives (EPA 2018) Environmental Factor Guideline: Terrestrial Environmental Quality (EPA 2016) ***Other policy and guidance*** Best Practice Environmental Management: Siting, Design, Operation and Rehabilitation of Landfills (EPA Victoria 2015)

Inland Waters	
EPA objective	To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.
Relevant activities	Clearing and excavation for the landfill, and acceptance of waste into the landfill.
Potential impacts and risks	Clearing and excavation may cause disturbance to subsurface flows and groundwater regimes. Acceptance of waste into the landfill may impact on groundwater quality from seepage of leachate. Contamination of groundwater has the potential to impact surrounding environmental values and reduce the beneficial uses of groundwater.

	The establishment of the landfill may disrupt surface water flows in and around the site. Changes in hydrological regimes may also indirectly impact aquatic biota, flora and vegetation and terrestrial fauna. Nearby surface waters and creek lines, including Thirteen Mile Brook, may be contaminated from surface water flows from the landfill. Flood risk associated with surface water interruption and infrastructure placement. The landfill may be at risk from seismic activity.
Required work	29. Identify and characterise baseline surface, hydrological and hydrogeological regimes and the sites geological characteristics, both in a local and regional context, including but not limited to water levels, water chemistry, stream and groundwater flows and flood patterns. This shall include: a. review of available technical reports b. hydrogeological investigation and hydrogeological risk assessment c. a desktop geochemical risk characterisation of the waste material to be placed within the landfill, based on available data and accepted characterisation techniques. d. risk assessment using a technique determined in consultation with the Department of Water and Environmental Regulation to determine potential impacts to nearby sensitive receptors e. provide information to demonstrate a conceptual understanding of the surface and groundwater systems, including the extent of the seasonal connectivity between surface and groundwater systems, and demonstrate that any migration of seepage from the site will not have a detrimental impact on these sensitive receptors. f. determine the direction and rate of groundwater flow from the site and the location(s) where groundwater flow from the site is discharged to the surface environment using appropriate hydrogeological and geochemical techniques 30. Provide details of the baseline water quality beneath the site. 31. Identify the direct and indirect impacts of the Proposal on inland waters within and surrounding the development envelope. This includes an assessment of the risk to the stability of the landfill posed by seismic activity. 32. Demonstrate that the Proposal has addressed the mitigation hierarchy. 33. Identify management measures to ensure impacts are not greater than predicted. This shall include provision of management plans for surface water and groundwater, including leachate management.

	34. Discuss the closure and rehabilitation measures to be implemented, and outcomes/objectives to be achieved. 35. Demonstrate the effectiveness and appropriateness of contingency actions through a fit for purpose numerical groundwater flow and solute transport simulation model. 36. Prepare a Contingency Action Plan to prevent contaminated water from migrating into surrounding aquifers. The Plan should outline the outcomes/objectives, management, monitoring, trigger/threshold and contingency actions to ensure potential impacts (direct and indirect) are managed. 37. Determine and quantify any significant residual impacts by applying the Residual Impact Significance Model (page 11) and WA Offset Template (Appendix 1) in the WA Environmental Offsets Guidelines (2014). 38. Where significant residual impacts remain, propose an offsets package that is consistent with the WA Environmental Offsets Policy and Guidelines. Spatial data defining the area of significant residual impacts for each environmental value should also be provided (e.g. vegetation type, vegetation condition, specific fauna species habitat). 39. Demonstrate and document in the ERD how the EPA's objective for this factor can be met.
Relevant policy and guidance	***EPA Policy and Guidance*** Statement of Environmental Principles, Factors and Objectives (EPA 2018) Environmental Factor Guideline: Inland Waters (EPA 2018) Instructions on how to prepare *Environmental Protection Act 1986* Part IV Environmental Management Plans (EPA 2018) ***Other policy and guidance*** Best Practice Environmental Management: Siting, Design, Operation and Rehabilitation of Landfills (EPA Victoria 2015) Australian Groundwater Modelling Guidelines, Waterlines report (National Water Commission 2012) Department of Water and Environmental Regulation: Guidance Statement: Risk Assessments (February 2017)
Peer Review	40. Commission an independent peer review of the hydrogeological and geological information and characterisation and commit to any works arising from the peer review in the ERD. This peer reviewer is required to be a qualified and experienced hydrogeologist with expertise in determining the location and magnitude of interactions of surface water and groundwater flow systems. Include the peer review report in the ERD.

Social Surroundings	
EPA objective	To protect social surroundings from significant harm.
Relevant activities	Clearing and excavation for the landfill, and acceptance of waste for the landfill.
Potential impacts and risks	Construction and operation of the landfill may generate noise and dust. Operation of the landfill may generate odours and a local visual impact.
Required work	41. Characterise the social aspects on and surrounding the site through a Due Diligence Assessment. 42. Characterise the heritage and cultural values of the indicative footprint, and any other areas that may be indirectly impacted to identify sites of significance and their relevance within a wider regional context. 43. Compare the site attributes with relevant separation distances to ensure it meets the recommended buffer distances. 44. Provide a Traffic Impact Assessment. 45. Provide a Tourism Impact Assessment. 46. Provide a risk assessment to identify potential impacts to agriculture and aquaculture within the region in consultation with the local land holders and the Department of Primary Industries and Regional Development (Agriculture and Food Division). 47. Provide a Landfill Gas Risk Assessment and Management Plan. 48. Provide an Odour Impact Assessment in accordance with the Air Quality Modelling Guidance Notes (Department of Environment 2006) to determine potential impacts to nearby sensitive receptors. 49. Provide a Noise Impact Assessment to identify potential impacts to sensitive noise receptors, including a map showing the location of noise sensitive premises. 50. Provide a visual impact assessment for before and after the Proposal activities to assess the impacts of the Proposal on visual amenity in accordance with the *Visual Landscape Planning in Western Australia: a manual for evaluation, assessment, siting and design* (Western Australian Planning Commission 2007). 51. Determine the proposed management, monitoring and mitigation methods to minimise impacts on social surroundings as a result of the Proposal.

	52. Outline the outcomes/objectives, management, monitoring, trigger and contingency actions to ensure potential impacts (direct and indirect) are managed. 53. Demonstrate and document in the ERD how the EPA's objective for this factor can be met.
Relevant policy and guidance	***EPA Policy and Guidance*** Statement of Environmental Principles, Factors and Objectives (EPA 2018) Environmental Factor Guideline: Social Surroundings (EPA 2016) Guidance Statement No.3 – Separation Distance Between Industrial and Sensitive Land Uses (2015) Instructions on how to prepare *Environmental Protection Act 1986* Part IV Environmental Management Plans (EPA 2018) ***Other policy and guidance*** Air Quality Modelling Guidance Notes (Department of Environment 2006) Visual Landscape Planning in Western Australia: a manual for evaluation, assessment, siting and design (Western Australian Planning Commission 2007) Traffic Impact Assessment Guidelines (WAPC 2016)

4. Other environmental factors or matters

The EPA has identified the following other environmental factors or matters relevant to the Proposal that must be addressed during the environmental review and discussed in the ERD:

1. Air quality

   It is likely that the Proposal would generate greenhouse gas emissions. To understand the potential impacts to air quality the following works are required:

   - detailed description (including estimating emissions) of the potential impacts to air quality as a result of greenhouse gas emissions generated by the decomposition of landfill material.
   - best management practices that may be incorporated into the design of the landfill to avoid or minimise the release of greenhouse gas emissions from the site.

It is also important that the proponent be aware that other factors or matters may be identified during the course of the environmental review that were not apparent at the time that this ESD was prepared. If this situation arises, the proponent must consult with the EPA to determine whether these factors and/or matters are to be addressed in the ERD, and if so, to what extent.

5. Stakeholder consultation

The proponent must consult with stakeholders who are affected by, or are interested in the proposal. This includes:

- decision-making authorities (see section 6)
- other relevant state government agencies and local government authorities
- environmental non-government organisations
- individuals and groups of the York community, including the Avon Valley Residents Association
- surrounding residents.

The proponent must document the following in the ERD:

- identified stakeholders
- the stakeholder consultation undertaken and the outcomes, including decision-making authorities' specific regulatory approvals and any adjustments to the Proposal as a result of consultation
- future plans for consultation.

6. Decision-making authorities

At this stage, the EPA has identified the authorities listed in Table 5 as decision-making authorities (DMAs) for the Proposal. Additional DMAs may be identified during the course of the assessment.

Table 5 Decision-making authorities

Decision-making authority	Relevant legislation
1. Minister for Water	*Rights in Water and Irrigation Act 1914*
2. Chief Executive Officer, Department of Biodiversity, Conservation and Attractions	*Biodiversity Conservation Act 2016*
3. Chief Executive Officer, Department of Water and Environmental Regulation	*Environmental Protection Act 1986*
4. Chief Executive Officer, Shire of York	*Planning and Development Act 2005*

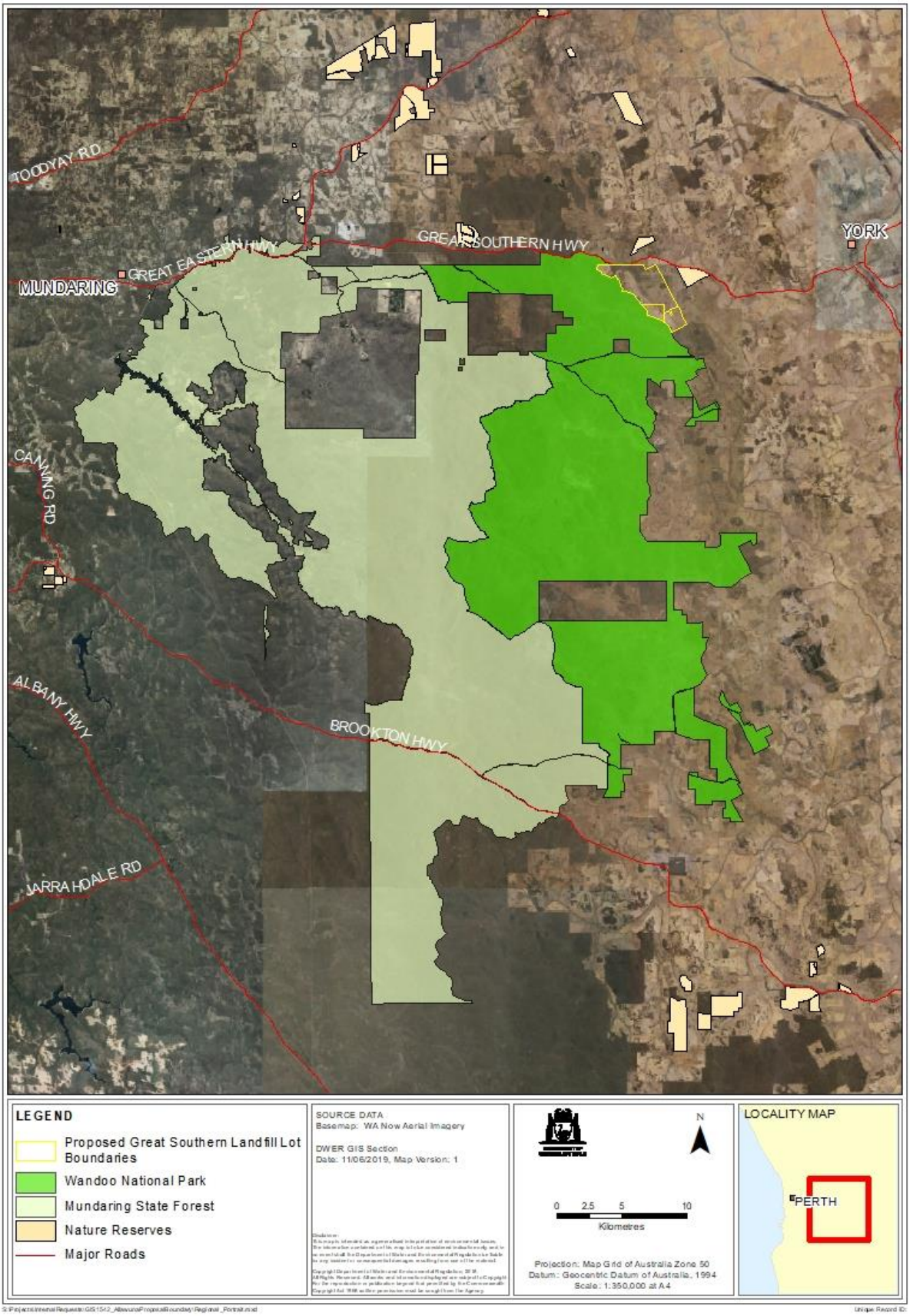

Figure 1 – Regional location

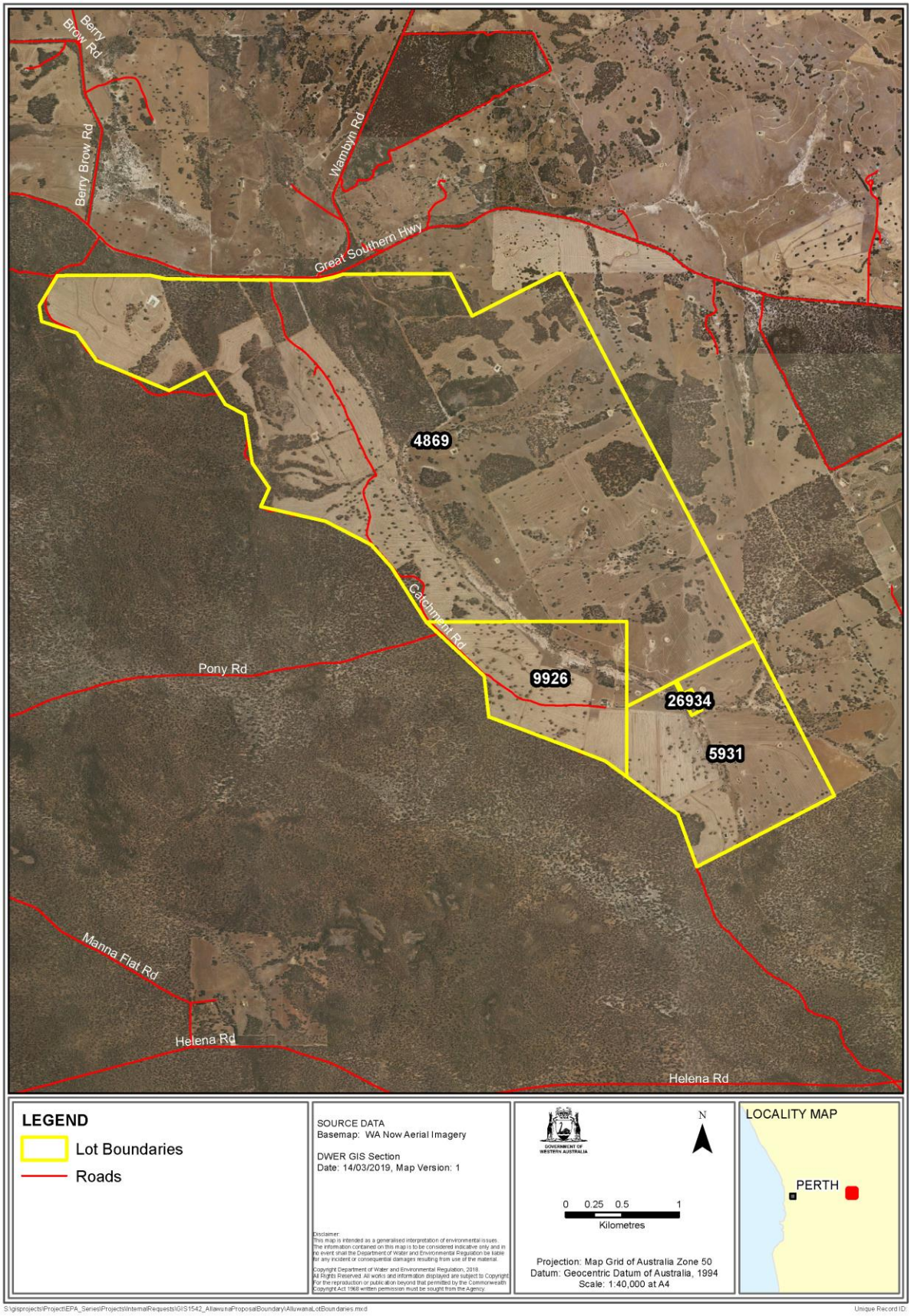

Figure 2 – Development envelope and indicative footprint