

Referral Document

Garden Street Extension, Southern River

City of Gosnells

10-11-2022

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Garden Street Extension, Southern River –

Referral Document

1 The proposal

1.1 Proposal information

Proposal name: Garden Street Extension, Southern River

Type of proposal: Refer a proposal

Proposal description

The City of Gosnells proposes to extend Garden Street between Harpenden Street and Holmes Street in Southern River, which will involve the construction of an 840 m section of a dual carriageway (two lanes each direction). The Proposal is located predominantly within the suburb of Southern River, approximately 17 km south-east of Perth Central Business District (CBD). This Proposal will facilitate the eventual connection of Garden Street to Tonkin Highway within the existing 'Other Regional Roads' Metropolitan Region Scheme (MRS). This strategic road connection will ease predicted significant traffic congestion. The Proposal has been designed to minimise the impact on flora and fauna and will only require clearing of no more than 2.04 ha of native vegetation.

1.2 Referrer information

Who referred the proposal: City of Gosnells

Name of the referrer: Rachel Fitzgerald (Environmental Officer)

Contact details

2120 Albany Highway
Gosnells Western Australia 6990
Australia
Phone: (08) 9397 3000
Email: council@gosnells.wa.gov.au

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1.3 Proponent information

Name of the proponent/s: City of Gosnells

ABN/ACN No.: 18374412891

Contact details

2120 Albany Highway

Gosnells Western Australia 6990

Australia

Phone: (08) 9397 3000

Email: council@gosnells.wa.gov.au

1.4 Proposal Elements

Element 1: road construction (sealed or unsealed)-3101

- **Maximum Extent:** The Proposal comprises a 2.65 ha Development Envelope (Figure 1 of the Referral Supporting Document). Clearing no more than 2.04 ha of native vegetation is proposed, which includes: 2.04 ha of low to very high quality black cockatoo foraging habitat; 1.3 ha of SCP23a Central *Banksia attenuata* – *Banksia menziesii* woodlands of the Swan Coastal Plain (SCP) which is encompassed within the Banksia Woodlands of the SCP Federally listed threatened ecological community; and 0.45 ha of remnant vegetation associated with a Conservation Category Wetland.
- **Associated activity element: 1: Clearing of native vegetation**
 - o **Phase:** Construction
 - o **Maximum extent, range or capacity of this activity**

The Proposal will result in the clearing of 2.04 ha of native vegetation ranging in Excellent to Degraded condition within the 2.65 ha Development Envelope. Vegetation condition within the Development Envelope is summarised in Table 16 and shown in Figure 7 of the Referral Supporting Document. Areas mapped as being Completely Degraded and Cleared on Figure 7 (Vegetation condition) are excluded from clearing area (2.04 ha) as no intact native vegetation is present.
- **Associated activity element: 2: Drainage infrastructure**
 - o **Phase:** Operational
 - o **Maximum extent, range or capacity of this activity**

Appendix I of the Referral Supporting Document shows detailed engineering plans, including proposed drainage. The drainage design includes kerbing to direct water through two gross pollutant traps (to capture first flush) prior to discharge to the wetland through two multibox culverts. Outside the wetland area, stormwater will enter side entry gullies and discharge to the existing stormwater network through pipes under the road pavement.
- **Associated activity element: 3: Road and all supporting infrastructure**
 - o **Phase:** Operational
 - o **Maximum extent, range or capacity of this activity**

Figure 1 in the Referral Supporting Document shows Development Envelope (2.65 ha) and Development Footprint and Appendix I shows the details engineering plans which show the road and drainage design.
- **Associated activity element: 4: Road Infrastructure**
 - o **Phase:** Construction
 - o **Maximum extent, range or capacity of this activity**

Refer to Appendix I in the Referral Supporting Document for proposed engineering construction design.

- All laydown, stockpiles and access tracks will be constructed within existing cleared areas.

- Road infrastructure: Installation of road infrastructure including earth fill (predominantly in-situ cut soils), pavement, asphalt surfacing, street lighting in the median island, safety barriers, signs and landscaping of batters.

- **Associated activity element: 5: Water supply**

- **Phase:** Construction
- **Maximum extent, range or capacity of this activity**

Pavement construction: Waterbind to achieve compaction. Water will be sourced from nearby hydrants (potable water) using a standpipe.

1.5 Proposal Stages

Maximum proposal life: In perpetuity following construction

Proposed start date: 31-10-2023

Proposed end date: 30-04-2025

Construction phase length: 18 months

Commissioning schedule: Not available

Operations phase length: In perpetuity following construction

Decommissioning phase length: Not applicable

Decommissioning schedule: Not applicable

Rehabilitation schedule

The Proposal includes the planting of approximately 0.7 ha of road batters with locally native nutrient retentive plants.

1.6 Greenhouse gas emissions

Construction

Total Scope 1 greenhouse gas emissions: 951 tCO₂-e

Scope 1 emissions source and quantification method

The City of Gosnells commissioned GHD to prepare a Greenhouse Gas (GHG) Assessment Report for the Garden Street Extension Project. The report dated 6 July 2022 outlines the scope 1 emissions sources and quantifications methods (see Appendix G of the Referral Supporting Document). Scope 1 emissions for Construction elements: Diesel – Transport/stationary & lost carbon sink at 951 tCO₂-e.

The GHG emissions assessment includes estimates for scope 1, scope 2 and scope 3 emissions attributed to the construction and operation of the project, using the Transport Authorities Greenhouse Gas Group (TAGG) Carbon Gauge Tool (CGT) and custom energy models respectively.

Total Scope 2 greenhouse gas emissions: 0

Scope 2 emissions source and quantification method

The City of Gosnells commissioned GHD to prepare a Greenhouse Gas (GHG) Assessment Report for the Garden Street Extension Project. The report dated 6 July 2022 outlines that there will be no scope 2 emissions as part of the construction of the project (see Appendix G of the Referral Supporting Document).

Total scope 3 greenhouse gas emissions: 291

Scope 3 emissions source and quantification method

The City of Gosnells commissioned GHD to prepare a Greenhouse Gas (GHG) Assessment Report for the Garden Street Extension Project. The report dated 6 July 2022 outlines the scope 3 emissions sources and quantifications methods (see Appendix G of the Referral Supporting Document). Scope 3 emissions for Construction elements: Fuel and Energy Related Activities & materials 291 tCO₂-e.

The GHG emissions assessment includes estimates for scope 1, scope 2 and scope 3 emissions attributed to the construction and operation of the project, using the Transport Authorities Greenhouse Gas Group (TAGG) Carbon Gauge Tool (CGT) and custom energy models respectively.

Operation

Total Scope 1 greenhouse gas emissions: 6

Scope 1 emissions source and quantification method

The City of Gosnells commissioned GHD to prepare a Greenhouse Gas (GHG) Assessment Report for the Garden Street Extension Project. The report dated 6 July 2022 outlines the scope 1 emissions sources and quantifications methods (see Appendix G of the Referral Supporting Document). Scope 1 emissions for Operation elements: Diesel – Transport/Stationary, 6 tCO₂-e per annum.

The GHG emissions assessment includes estimates for scope 1, scope 2 and scope 3 emissions attributed to the construction and operation of the GSE, using the Transport Authorities Greenhouse Gas Group (TAGG) Carbon Gauge Tool (CGT) and custom energy models respectively.

Total Scope 2 greenhouse gas emissions: 28**Scope 2 emissions source and quantification method**

The City of Gosnells commissioned GHD to prepare a Greenhouse Gas (GHG) Assessment Report for the Garden Street Extension Project. The report dated 6 July 2022 outlines the scope 2 emissions sources and quantifications methods. Scope 2 emissions for Operation elements: Purchased Electricity, 28 tCO₂-e per annum.

The GHG emissions assessment includes estimates for scope 1, scope 2 and scope 3 emissions attributed to the construction and operation of the project, using the Transport Authorities Greenhouse Gas Group (TAGG) Carbon Gauge Tool (CGT) and custom energy models respectively.

Total scope 3 greenhouse gas emissions:2613**Scope 3 emissions source and quantification method**

The City of Gosnells commissioned GHD to prepare a Greenhouse Gas (GHG) Assessment Report for the Garden Street Extension Project. The report dated 6 July 2022 outlines the scope 3 emissions sources and quantifications methods. Scope 3 emissions for Operation elements: Fuel and Energy Related Activities and Material Use, 2,613 tCO₂-e per annum.

The GHG emissions assessment includes estimates for scope 1, scope 2 and scope 3 emissions attributed to the construction and operation of the project, using the Transport Authorities Greenhouse Gas Group (TAGG) Carbon Gauge Tool (CGT) and custom energy models respectively.

2 Stakeholder information

2.1 Decision-making authorities

DMA: 1: Ms Michelle Andrews

Organisation	Chief Executive Officer, Department of Water and Environmental Regulation
Legislation	<i>Environmental Protection Act 1986</i>
Approval required	
Mitigation of Impacts	Assessment of key environmental factors in line with EPA Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual.

DMA: 2: Hon. Dave Kelly

Organisation	Minister for Water
Legislation	<i>Rights in Water and Irrigation Act 1914</i>
Approval required	
Mitigation of Impacts	<p>1. Interference with the bed and banks of a watercourse or wetland (clearing of vegetation and construction works) will be mitigated through the provision of the permit. Authorisation to interfere with the bed and banks of watercourses and wetlands will assist in maintaining hydrological regimes to protect inland water values.</p> <p>2. RiWI Act licensing assesses and manages the abstraction of ground and surface water. An approved volume of water for abstraction and discharge during construction will be monitored to ensure no exceedances.</p>

DMA: 3: Mr Mark Webb

Organisation	Chief Executive Officer, Department of Biodiversity, Conservation and Attractions
Legislation	<i>Biodiversity Conservation Act 2016</i>
Approval required	
Mitigation of Impacts	Conditions of Authorisations will be adhered to.

2.2 Tenure and Local Government approvals

Local Government Authority in which the proposal is located.

City of Gosnells

Rezoning details

Current land use

The Proposal is within road reservation which is reserved as “Other Regional Roads” under the Metropolitan Region Scheme (MRS) and Town Planning Scheme No. 6 (TPS). The road reservation is 4.78 ha area and does not have a defined current land use.

Legal access requirements

Tenure details

Activity: road construction

Land tenure/access

Road reservation

Type of approval & regulating legislation

The road reserve that the proposal forms part of is within the “Other Regional Roads” reservation under the Metropolitan Region Scheme (MRS) which falls under the City of Gosnells tenure.

2.3 Key stakeholders, consultation register, and consultation summary

Key stakeholders

Name: Environmental Protection Authority

Organisation

Role Regulatory role

Name: Department of Water and Environmental Regulation

Organisation

Role Regulatory role

Name: Department of Biodiversity Conservation and Attractions

Organisation

Role Vested interest in geomorphic wetlands

Name: Department of Planning, Lands and Heritage

Organisation

Role Vested interest in Bush Forever and State planning

Name: Local Community

Organisation

Role Interest in extension of Garden Street to ease traffic congestion and improve road safety

Describe Stakeholders

The stakeholders have been identified as they are government bodies that have a vested interest in the project from an environmental and planning perspective. The local community is a key stakeholder as the road extension will provide a service to the community by easing traffic congestion and improving road safety.

Consultation register

Name: Department of Water and Environmental Regulation

Date of consultation 26-08-2020

Interactions and outcomes Advice provided from DWER to the City's consultant Urbaqua regarding groundwater monitoring bore locations for hydrological studies.

Consultation summary

See Section 4 of the Referral Supporting Document which discusses stakeholder engagement and consultation outcomes (Table 9).

Lead agency status and relevant information

- **Lead agency status (yes/no):** No

2.4 Commonwealth Government approvals

- **Actions that may be or are a controlled action under the EPBC Act (yes/no):** Yes
- **Referral to the Commonwealth (yes/no):** Yes
 - **Date of referral:** 29-06-2022
 - **EPBC Reference number:** 2016/7735
 - **Decision made (yes/no):** Yes
 - **Controlled or not a controlled action:** Controlled
 - **Bilateral/Accredited assessment details:**
- **Approvals required from other Commonwealth Government department's (yes/no):** No
 - **Details of approvals required**

3 Alternatives to the proposal

Description of alternative considerations:

Alternative 1	
Type	Location
Description	Refer to section 2.2 of the Referral Supporting Document for information on the project need and alternatives considered. The current road alignment has become 'locked in' due to planning approvals and residential development on either side of the road alignment.
Description of the changes to impacts and mitigations	The City has considered alternative options for the Proposal, including 'do-nothing' and realignment of the road to minimise the construction impacts on the Bush Forever site. Due to expected future traffic requirements, the 'do-nothing' approach is not feasible. The current road alignment has become 'locked in' due to planning approvals and residential development on either side of the road alignment.

Alternative 2	
Type	No Development
Description	See section 2.2.1 and 2.2.2 in the Referral Supporting Document for consideration of alternatives including 'do-nothing'.
Description of the changes to impacts and mitigations	See section 2.2.1 and 2.2.2 in the Referral Supporting Document for consideration of alternatives including 'do-nothing' and the impact of this outcome.

Alternative 3	
Type	Timeline
Description	A change in timeline will not affect the environmental outcomes of the proposal.

Description of the changes to impacts and mitigations	This was not considered as this will not result in any changes to the environmental outcomes of the proposal.
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Alternative 4	
Type	Element
Description	Not applicable
Description of the changes to impacts and mitigations	Not applicable

Alternative 5	
Type	Activity
Description	Not applicable - the Development Envelope is located within land reserved as 'Other Regional Roads' in the MRS and TPS, therefore a change in activity is not being considered.
Description of the changes to impacts and mitigations	Not applicable

Alternative 6	
Type	Technology
Description	Not applicable to a road project
Description of the changes to impacts and mitigations	Not applicable to a road project

Alternative 7	
Type	Other
Description	Not applicable
Description of the changes to impacts and mitigations	Not applicable

4 Environmental Review

4.1 Aspects

Aspect 1: Altered surface water regimes	
Type	Altered surface water regimes
Description	
Characterisation	Refer to Section 6.5 of the Referral Supporting Document for information on the Inland Waters factor which includes the potential for changes to hydrological regimes due to alterations to surface drainage patterns. Refer to Appendix D - Hydrology Study and Impact Assessment (Urbaqua 2022) which includes a detailed hydrological impact assessment. Sections 3.5.4, 4.2.2 and 5.1 of Urbaqua's report specifically discusses wetland hydrology and water level impacts.
Elements and Activities Sources	<ul style="list-style-type: none"> road construction (sealed or unsealed)-3101(<i>Clearing of native vegetation</i>)

Aspect 2: Change in groundwater levels	
Type	Change in groundwater levels (abstraction / dewatering)
Description	
Characterisation	Refer to Section 6.5 of the Referral Supporting Document for information on the Inland Waters factor which includes the potential for changes to groundwater levels. Refer to Appendix D - Hydrology Study and Impact Assessment (Urbaqua 2022) which includes a detailed hydrological impact assessment. Sections 3.4.2 and 5 of Urbaqua's report that discusses the potential impacts that clearing and construction of the road will have on groundwater levels.
Elements and Activities Sources	<ul style="list-style-type: none"> road construction (sealed or unsealed)-3101(<i>Road Infrastructure</i>) road construction (sealed or unsealed)-3101(<i>Clearing of native vegetation</i>)

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Aspect 3: Clearing of vegetation	
Type	Clearing of vegetation
Description	
Characterisation	Refer to Section 6.3 and 6.4 of the Referral Supporting Document for information on the Flora and Vegetation and Terrestrial Fauna environmental factors respectively. Sections 6.3.3 and 6.4.3 specifically discuss potential environmental impacts associated with these two environmental factors. Appendix B includes an Ecological Survey by Biologic 2022 and Appendix C includes a Short-range endemic and significant invertebrate desktop assessment for the project.
Elements and Activities Sources	<ul style="list-style-type: none"> road construction (sealed or unsealed)- 3101(<i>Clearing of native vegetation</i>)

Aspect 4: Introduction / spread of invasive species	
Type	Introduction / spread of invasive species
Description	
Characterisation	Refer to Section 6.3 and 6.4 of the Referral Supporting Document for information on the Flora and Vegetation and Terrestrial Fauna environmental factors respectively. Sections 6.3.3 and 6.4.3 specifically discuss potential environmental impacts which includes potential spread of invasive species.
Elements and Activities Sources	<ul style="list-style-type: none"> road construction (sealed or unsealed)- 3101(<i>Clearing of native vegetation</i>) road construction (sealed or unsealed)- 3101(<i>Road Infrastructure</i>)

Aspect 5: Land degradation - Soil compaction	
Type	Land degradation - Soil compaction
Description	
Characterisation	Refer to Section 6.5.3 of the Referral Supporting Document for information on the Inland Waters factor which includes the potential for proposed road

	extension to cause compaction and therefore cause impacts to groundwater flows/levels. Refer to Appendix D - Hydrology Study and Impact Assessment (Urbaqua 2022). Sections 4.2.3 and 5.3 of Urbaqua's report discusses the potential for compaction impacts.
Elements and Activities Sources	<ul style="list-style-type: none"> road construction (sealed or unsealed)-3101(<i>Clearing of native vegetation</i>) road construction (sealed or unsealed)-3101(<i>Road Infrastructure</i>)

Aspect 6: Land degradation - Soil erosion

Type	Land degradation - Soil erosion
Description	
Characterisation	Refer to Section 6.5.3 of the Referral Supporting Document for information on the Inland Waters factor which includes the potential for clearing of native vegetation to cause erosion and sedimentation. Refer to Appendix D - Hydrology Study and Impact Assessment (Urbaqua 2022). Sections 4.2.2 of Urbaqua's report specifically discusses potential erosion impacts.
Elements and Activities Sources	<ul style="list-style-type: none"> road construction (sealed or unsealed)-3101(<i>Clearing of native vegetation</i>)

Aspect 7: Release / contamination to land

Type	Releases to water (groundwater / surface water)
Description	
Characterisation	Refer to Section 6.5 of the Referral Supporting Document for information on the Inland Waters factor which includes the potential for contamination of surface and/or groundwater due to accidental fuel/chemical spills and contaminated stormwater runoff. Refer to Appendix D - Hydrology Study and Impact Assessment (Urbaqua 2022) which includes a detailed hydrological impact assessment. Sections 4.2.2 and 5.2 of Urbaqua's report specifically discuss potential drainage water quality impacts.
Elements and Activities Sources	<ul style="list-style-type: none"> road construction (sealed or unsealed)-3101(<i>Road Infrastructure</i>)

4.2 Mitigations

Mitigation 1: Avoid	
Description	<p>The following sections in the Referral Supporting Document discuss mitigation measures relating to avoidance:</p> <ul style="list-style-type: none"> - Flora and Vegetation - Section 6.3.4 - Terrestrial Fauna - Section 6.4.4 - Inland Waters - Section 6.5.4
Related aspects:	<ul style="list-style-type: none"> • Clearing of vegetation • Land degradation - Soil erosion • Change in groundwater levels (abstraction / dewatering) • Introduction / spread of invasive species

Mitigation 2: Implement	
Description	<p>The following sections of the Referral Supporting Document relate to implementation of measures to reduce environmental impacts associated with the project:</p> <ul style="list-style-type: none"> - Flora and Vegetation - Section 6.3.4 - Terrestrial Fauna - Section 6.4.4 - Inland Waters - Section 6.5.4
Related aspects:	<ul style="list-style-type: none"> • Clearing of vegetation • Releases to water (groundwater / surface water) • Introduction / spread of invasive species • Land degradation - Soil compaction • Land degradation - Soil erosion • Altered surface water regimes • Land degradation - Soil erosion

Mitigation 3: Minimise	
Description	<p>The following sections of the Referral Supporting Document relate to minimising impacts associated with the project:</p> <ul style="list-style-type: none"> - Flora and Vegetation - Section 6.3.4 - Terrestrial Fauna - Section 6.4.4 - Inland Waters - Section 6.5.4
Related aspects:	<ul style="list-style-type: none"> • Releases to water (groundwater / surface water) • Change in groundwater levels (abstraction / dewatering) • Clearing of vegetation • Introduction / spread of invasive species • Land degradation - Soil erosion • Altered surface water regimes • Land degradation - Soil compaction

4.3 Environmental factors

Legislative context

The Referral Supporting Document for the Proposal supports a referral under Section 38, Part IV of the Environmental Protection Act 1986 and has been prepared in accordance with the EPA Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual, Instructions – Referral of a proposal to the Environmental Protection Authority (EPA) under section 38 of the Environmental Protection Act 1986 and Instruction: How to prepare an Environmental Review Document. The Referral Supporting Document has been prepared to demonstrate that the Proposal, through the implementation of mitigation measures and offsets, will not have a significant effect on the environment, for the consideration of the EPA.

Refer to section 3 in the Referral Supporting Document for more details.

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) provides for the protection of Matters of National Environmental Significance (MNES). The EPBC Act requires referral of an action that will have, or is likely to have, a significant impact on MNES. The current Proposal has previously been referred under the EPBC Act for impacts to listed threatened species and communities, namely Black Cockatoos. The Proposal was deemed to be a Controlled Action (EPBC 2016/7735) and approval for the Proposal subject to conditions was received on 25 October 2018 and is valid until 31 December 2030. For further detail on MNES see Section 9 of the Referral Supporting Document.

Other approvals and regulations relevant to the Proposal can be found in Section 3.2 of the Referral Supporting Document.

Local and Regional context

The local and regional context of the Proposal is discussed in Section 2.3 of the Referral Supporting Document. Figure 5 in the Referral Supporting Document shows conservation areas in the locality.

Potentially significant environmental factors for the proposal:

- **Air quality:** No
- **Benthic communities and habitats:** No
- **Coastal processes:** No
- **Flora and vegetation:** Yes
- **Greenhouse gas emissions:** No
- **Human health:** No
- **Inland waters:** Yes
- **Landforms:** No
- **Marine environmental quality:** No
- **Marine fauna:** No
- **Social surroundings:** No
- **Subterranean fauna:** No
- **Terrestrial environmental quality:** No
- **Terrestrial fauna:** Yes

4.3.1 Air quality

Environmental objective

To maintain air quality and minimise emissions so that environmental values are protected.

Potential key environmental factor (yes/no)

No

Description of receiving environment

Refer to Table 25 in Section 7 of the Referral Supporting Document.

Justification

Refer to Table 25 in Section 7 of the Referral Supporting Document (Other Environmental Factors or Matters). Air Quality will not be significantly impacted, appropriate mitigations are in place.

4.3.2 Benthic communities and habitats

Environmental objective

To protect benthic communities and habitats so that biological diversity and ecological integrity are maintained.

Potential key environmental factor (yes/no) No

Description of receiving environment

This is not a relevant environmental factor to the Proposal.

Justification

This is not a relevant environmental factor to the Proposal.

4.3.3 Coastal processes

Environmental objective

To maintain the geophysical processes that shape coastal morphology so that the environmental values of the coast are protected.

Potential key environmental factor (yes/no) No

Description of receiving environment

This is not a relevant environmental factor to the Proposal.

Justification

This is not a relevant environmental factor to the Proposal.

4.3.4 Flora and vegetation

Environmental objective

To protect flora and vegetation so that biological diversity and ecological integrity are maintained.

Potential key environmental factor (yes/no)

Yes

Description of receiving environment

Refer to Section 6.3.1 and 6.3.2 of the Referral Supporting Document for information on the Flora and Vegetation factor receiving environment. Biologic's Ecological Survey report in Appendix B discusses the existing environment.

EPA policy and guidance

Refer to Section 6.3.1 and 6.3.2 of the Referral Supporting Document for information on the Flora and Vegetation factor receiving environment. Biologic's Ecological Survey report in Appendix B discusses the existing environment.

Description of environmental impacts

Refer to Section 6.3.1 and 6.3.2 of the Referral Supporting Document for information on the Flora and Vegetation factor receiving environment. Biologic's Ecological Survey report in Appendix B discusses the existing environment.

Environmental Values Impact Assessments:

<u>Value : Other</u>	
Characterisation	Refer to Section 6.3.2.2 of the Referral Supporting Document that discusses the TEC within the Development Envelope.
Impacts	<p><u>Aspect: Clearing of vegetation</u></p> <ul style="list-style-type: none"> • Characterise Up to 1.3 ha of Banksia Woodlands of SCP TEC will be lost as a result of clearing native vegetation within the Development Envelope. More details are contained within section 6.3 of the Referral Supporting Document. • Quantity: 1.3 Hectares
Mitigation effect	<p><u>Mitigation: Avoid</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 and section 6.3.4 in the Referral Supporting Document • Quantity: <p><u>Mitigation: Minimise</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 in the Referral Supporting Document. • Quantity: <p><u>Mitigation: Implement</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 in the Referral Supporting Document. • Quantity:
Residual impacts quantity, volume or extent	1.3 Hectares
Residual impact	Refer to section 6.3.5 in the Referral Supporting Document.

Significant residual impact(yes/no)	Yes
Justify significance	Refer to sections 6.3.5 and 8 of the Referral Supporting Document.
Cumulative impact	Refer to Table 30 in Section 11 of the Referral Supporting Document.
Environmental outcome	Refer to section 6.3.6 in the Referral Supporting Document.
Justification	Refer to the Referral Supporting Document and Appendix B - Ecological Survey.

<u>Value : Other</u>	
Characterisation	Refer to Table 6 in section 2.3.12 and Figure 5 for information on the Bush Forever site. Section 6.3.2 discusses the values present.
Impacts	<p><u>Aspect: Clearing of vegetation</u></p> <ul style="list-style-type: none"> • Characterise Up to 1.2 ha of native vegetation within a Bush Forever Site No. 125 will be cleared as part of the Proposal. • Quantity: 1.2 Hectares
Mitigation effect	<p><u>Mitigation: Avoid</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 and section 6.3.4 in the Referral Supporting Document. • Quantity: <p><u>Mitigation: Minimise</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 and section 6.3.4 in the Referral Supporting Document. • Quantity: <p><u>Mitigation: Implement</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 and section 6.3.4 in the Referral Supporting Document. • Quantity:

Residual impacts quantity, volume or extent	1.2 Hectares
Residual impact	Refer to Table ES3, section 6.3.5 and 8.1 and Table 29 (Residual Impact Significance Model) in the Referral Supporting Document.
Significant residual impact(yes/no)	Yes
Justify significance	Refer to Table ES3, section 6.3.5 and 8.1 and Table 29 (Residual Impact Significance Model) in the Referral Supporting Document.
Cumulative impact	Refer to Table 30 in section 11 of the Referral Supporting Document.
Environmental outcome	Refer to section 6.3.6 in the Referral Supporting Document.
Justification	Refer to the Referral Supporting Document and Appendix B - Ecological Survey Report.
Offset explanation	
Application of the mitigation hierarchy Refer to Table ES3 in the Referral Supporting Document.	
Assessment and significance of residual impacts Refer to section 6.3.5 and Section 8.1 and Table 29 in the Referral Supporting Document.	
Likely environmental outcomes Refer to section 6.3.6 in the Referral Supporting Document.	

4.3.5 Greenhouse gas emissions

Environmental objective

To reduce net greenhouse gas emissions in order to minimise the risk of environmental harm associated with climate change.

Potential key environmental factor (yes/no)

No

Description of receiving environment

Refer to Table 26 Section 7 in the Referral Supporting Document. Refer to Appendix G for the Greenhouse Gas Assessment Report prepared by GHD in 2022.

Justification

Refer to Table 26 Section 7 in the Referral Supporting Document (Other Environmental Factors or Matters) and Appendix G. The modelled greenhouse gas emissions estimates place the Proposal significantly below the 100,000 tCO₂-e per year threshold in terms of estimated total greenhouse gas emissions. Greenhouse gas emissions will not exceed the EPA’s trigger.

4.3.6 Human health

Environmental objective

To protect human health from significant harm.

Potential key environmental factor (yes/no)

No

Description of receiving environment

Refer to Table 28 in Section 7 of the Referral Supporting Document.

Justification

Refer to Table 28 in Section 7 of the Referral Supporting Document.

4.3.7 Inland waters

Environmental objective

To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.

Potential key environmental factor (yes/no)

Yes

Description of receiving environment

Section 6.5 of the Referral Supporting Document addresses the information requirements for the Inland Waters environmental factor. Refer to Appendix D - Hydrology Study and Impact Assessment (Urbaqua 2022) for detailed information on the Inland Waters environmental factor. Appendix E contains a comprehensive groundwater monitoring program undertaken by Urbaqua which informed the Hydrology Study and Impact Assessment.

EPA policy and guidance

Section 6.5 of the Referral Supporting Document addresses the information requirements for the Inland Waters environmental factor. Refer to Appendix D - Hydrology Study and Impact Assessment (Urbaqua 2022) for detailed information on the Inland Waters environmental factor. Appendix E contains a comprehensive groundwater monitoring

program undertaken by Urbaqua which informed the Hydrology Study and Impact Assessment.

Description of environmental impacts

Section 6.5 of the Referral Supporting Document addresses the information requirements for the Inland Waters environmental factor. Refer to Appendix D - Hydrology Study and Impact Assessment (Urbaqua 2022) for detailed information on the Inland Waters environmental factor. Appendix E contains a comprehensive groundwater monitoring program undertaken by Urbaqua which informed the Hydrology Study and Impact Assessment.

Environmental Values Impact Assessments:

<u>Value : Other</u>	
Characterisation	Refer to section 6.5.1 and 6.5.2 in the Referral Supporting Document.
Impacts	<p><u>Aspect: Clearing of vegetation</u></p> <ul style="list-style-type: none"> • Characterise Refer to section 6.5.3 in the Referral Supporting Document. Table 20 provides the risk of potential impacts from the Proposal. • Quantity: 0.45 Hectares
Mitigation effect	<p><u>Mitigation: Avoid</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 in the Referral Supporting Document. • Quantity: <p><u>Mitigation: Minimise</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 in the Referral Supporting Document. • Quantity: <p><u>Mitigation: Implement</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 in the Referral Supporting Document. • Quantity:

Residual impacts quantity, volume or extent	0.45 Hectares
Residual impact	Refer to Sections 6.5.5 and Section 8.1 and Table 29 in the Referral Supporting Document.
Significant residual impact(yes/no)	Yes
Justify significance	Refer to Sections 6.5.5 and 8.1 in the Referral Supporting Document.
Cumulative impact	Refer to Table 32 in section 11 for the cumulative impacts to inland water values in the Referral Supporting Document.
Environmental outcome	Refer to Section 6.5.6 in the Referral Supporting Document.
Justification	Refer to the Appendix D - Hydrology Study and Impact Assessment (Urbaqua 2022) and the information provided in the Referral Supporting Document.
Offset explanation	
Application of the mitigation hierarchy Refer to table ES3 in the Referral Supporting Document.	
Assessment and significance of residual impacts Refer to table ES3 in the Referral Supporting Document.	
Likely environmental outcomes Refer to section 6.5.6 of the Referral Supporting Document.	

4.3.8 Landforms

Environmental objective

To maintain the variety and integrity of distinctive physical landforms so that environmental values are protected.

Potential key environmental factor (yes/no)

No

Description of receiving environment

Refer to Table 22 in Section 7 of the Referral Supporting Document.

Justification

Refer to Table 22 in Section 7 of the Referral Supporting Document (Other Environmental Factors or Matters). The Proposal presents no significant impacts or risks to Landforms.

4.3.9 Marine environmental quality**Environmental objective**

To maintain the quality of water, sediment and biota so that environmental values are protected.

Potential key environmental factor (yes/no)

No

Description of receiving environment

This is not a relevant environmental factor to the Proposal.

Justification

This is not a relevant environmental factor to the Proposal.

4.3.10 Marine fauna**Environmental objective**

To protect marine fauna so that biological diversity and ecological integrity are maintained.

Potential key environmental factor (yes/no)

No

Description of receiving environment

This is not a relevant environmental factor to the Proposal.

Justification

This is not a relevant environmental factor to the Proposal.

4.3.11 Social surroundings**Environmental objective**

To protect social surroundings from significant harm.

Potential key environmental factor (yes/no)

No

Description of receiving environment

Refer to Table 27 in Section 7 of the Referral Supporting Document.

Justification

Refer to Table 27 in Section 7 of the Referral Supporting Document (Other Environmental Factors or Matters). Social Surroundings will not be significantly negatively impacted in the long term. Safety and amenity will be improved overall from the implementation of the Proposal.

4.3.12 Subterranean fauna**Environmental objective**

To protect subterranean fauna so that biological diversity and ecological integrity are maintained.

Potential key environmental factor (yes/no)

No

Description of receiving environment

Refer to Table 23 in Section 7 of the Referral Supporting Document.

Justification

Refer to Table 23 in Section 7 of the Referral Supporting Document (Other Environmental Factors or Matters). The Proposal does not require large scale dewatering, clearing or excavation. Impacts are unlikely.

4.3.13 Terrestrial environmental quality**Environmental objective**

To maintain the quality of land and soils so that environmental values are protected.

Potential key environmental factor (yes/no)

No

Description of receiving environment

Refer to Table 24 in Section 7 of the Referral Supporting Document.

Justification

Refer to Table 24 in Section 7 of the Referral Supporting Document (Other Environmental Factors or Matters). The Proposal presents no significant impacts or risks to Terrestrial Environmental Quality.

4.3.14 Terrestrial fauna

Environmental objective

To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.

Potential key environmental factor (yes/no)

Yes

Description of receiving environment

Refer to sections 6.4.1 and 6.4.2 of the Referral Supporting Document.

EPA policy and guidance

Refer to sections 6.4.1 and 6.4.2 of the Referral Supporting Document.

Description of environmental impacts

Refer to sections 6.4.1 and 6.4.2 of the Referral Supporting Document.

Environmental Values Impact Assessments:

Value : Other	
Characterisation	Refer to sections 6.4.1 and 6.4.2 in the Referral Supporting Document and Figures 9 and 10.
Impacts	<p><u>Aspect: Clearing of vegetation</u></p> <ul style="list-style-type: none"> • Characterise Refer to section 6.4.3 in the Referral Supporting Document. The implementation of the Proposal will result in the clearing of 1.59 ha of very high-quality foraging habitat consisting of Banksia Woodland for Carnaby's Black Cockatoo. • Quantity: 1.59 Hectares
Mitigation effect	<p><u>Mitigation: Avoid</u></p> <ul style="list-style-type: none"> • Explanation Refer to Table ES3 and section 6.4.5 in the Referral Supporting Document. • Quantity: <p><u>Mitigation: Minimise</u></p> <ul style="list-style-type: none"> • Explanation

	<p>Refer to Table ES3 and section 6.4.5 in the Referral Supporting Document.</p> <ul style="list-style-type: none"> • Quantity: <p>Mitigation: Implement</p> <ul style="list-style-type: none"> • Explanation <p>Refer to Table ES3 and section 6.4.5 in the Referral Supporting Document.</p> <ul style="list-style-type: none"> • Quantity:
Residual impacts quantity, volume or extent	1.59 Hectares
Residual impact	Refer to section 6.4.5 in the Referral Supporting Document.
Significant residual impact(yes/no)	Yes
Justify significance	Refer to section 6.4.5 and Section 8.1 and Table 29 in the Referral Supporting Document.
Cumulative impact	Refer to Table 31 in section 11 in the Referral Supporting Document.
Environmental outcome	Refer to section 6.4.6 in the Referral Supporting Document.
Justification	Refer to the Referral Supporting Document, Appendix B - Ecological Survey Report and Appendix C- Shore-range endemic and significant invertebrate desktop assessment.
Offset explanation	
Application of the mitigation hierarchy	
Refer to Table ES3 in the Referral Supporting Document.	
Assessment and significance of residual impacts	
Refer to section 6.4.5 in the Referral Supporting Document.	
Likely environmental outcomes	
Refer to section 6.4.6 in the Referral Supporting Document.	

5 Offsets

5.1 Offset's objective

The EPA's environmental objective for proposals that may require Environmental Offsets is to counterbalance any significant residual environmental impacts and/or uncertainty through the application of the offsets.

5.2 Significant Residual Impacts

<u>Value : Other</u>	
Extent	0.45 Hectares
Offset level	Requires offset
Explanation	Refer to sections 8.1 and 8.2 in the Referral Supporting Document.

<u>Value : Other</u>	
Extent	1.3 Hectares
Offset level	Requires offset
Explanation	Refer to sections 8.1 and 8.2 in the Referral Supporting Document.

<u>Value : Other</u>	
Extent	1.59 Hectares
Offset level	Requires offset
Explanation	Refer to sections 8.1 and 8.2 in the Referral Supporting Document.

<u>Value : Other</u>	
Extent	1.2 Hectares
Offset level	Requires offset
Explanation	Refer to sections 8.1 and 8.2 in the Referral Supporting Document.

5.3 Offsets policy and guidance

Refer to sections 8.1 and 8.2 in the Referral Supporting Document.

5.4 Consideration of the Environmental Offsets Principles

1. Environmental offsets will only be considered after avoidance and mitigation options have been pursued.

Refer to Table ES3 in the Referral Supporting Document for information on avoidance and mitigation measures for each of the key environmental factors. More detailed information on avoidance and mitigation measures considered are outlined in sections 6.3.4, 6.4.4 and 6.5.4.

2. Environmental offsets are not appropriate for all projects.

The City of Gosnells intends to counterbalance significant residual impacts of this Proposal through the implementation of an Environmental Offsets Strategy. The Offsets Strategy will be prepared in accordance with the WA Government's Environmental Offsets Policy (Government of WA, 2011) and WA Environmental Offsets Metric Guideline (DWER, 2021).

3. Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted.

The City is willing to offset the loss to be incurred. If required, the City of Gosnells has two potential offset sites:

- Webster Park: The park is under the City's ownership and is approximately 1.1788 ha in size (Figure 11a). The site is zoned Urban under the MRS and Business Development under the TPS. The site is identified as an industrial lot in the approved Southern River Precinct 3F Business Park Structure Plan but was converted to conservation reserve in the approved subdivision plan (WAPC Application No. 161330 approved 4 January 2022) as an offset for the Garden Street extension Proposal as the vegetation was determined to be in Very Good to Excellent condition, with the majority being in Excellent condition (Figure 11d, 360 Environmental, 2019). The vegetation within Webster Park was identified as:

EtBIAf – Eucalyptus todtiana, Banksia littoralis, Banksia attenuata, Banksia ilicifolia and Allocasuarina fraseriana open forest to woodland over Kunzea glabrescens and Xanthorrhoea preissii open shrubland over Melaleuca thymoides and Phiotheca spicata low sparse shrubland over Dasypogon bromeliifolius, Patersonia occidentalis and Phlebocarya ciliata forbland (Figure 11c, 360 Environmental, 2019).

The City of Gosnells will commit to the ongoing management of the reserve through weed control, removal of rubbish and possible infill planting. The retention of the reserve from industrial development and protection and enhancement through active management of the reserve will offset the loss of the TEC and Black Cockatoo foraging habitat in the Development Envelope as it is of similar vegetation of high quality (Figure 11b).

- Bullfinch Site: Located at Lot 1490 Bullfinch Street, Huntingdale, the site is approximately 1.3 ha in size and zoned Urban under the MRS and Residential under the TPS (Figure 12). The site is currently categorized as a Resource Enhancement Wetland (REW). The City of Gosnells has purchased the site as a potential offset site and will commit to enhancement and management of the site if approved as an appropriate offset site for clearing CCW through weed control, rubbish removal and revegetation.

4. Environmental offsets will be based on sound environmental information and knowledge.

The enhancement and management of the proposed offset sites will be based on site specific, sound environmental information and local knowledge to ensure positive outcomes are achieved.

5. Environmental offsets will be applied within a framework of adaptive management.

The Offsets Strategy will be prepared in accordance with the WA Government's Environmental Offsets Policy (Government of WA, 2011) and WA Environmental Offsets Metric Guideline (DWER, 2021). This will include consideration of adaptive management.

6. Environmental offsets will be focused on longer term strategic outcomes.

The two offset sites the City is willing to commit to will be protected and enhanced and fall under long term management of the City of Gosnells. This is a strategic approach to ensure long term management of the reserves to optimise environmental outcomes.

5.5 Use of the Pilbara Environmental Offsets Fund (yes/no)

No

5.6 Offsets Summary

The City of Gosnells intends to counterbalance significant residual impacts of this Proposal through the implementation of an Environmental Offsets Strategy. The Offsets Strategy will be prepared in accordance with the WA Government's Environmental Offsets Policy (Government of WA, 2011) and WA Environmental Offsets Metric Guideline (DWER, 2021).

The City is currently investigating a number of options to develop an appropriate Environmental Offsets Strategy to counterbalance the significant residual impacts associated with the Proposal. The options currently being investigated include both direct and indirect offsets and will likely include land acquisition and/or rehabilitation offsets. Further consideration is to be given to offset sites once the offset requirement is determined, based on advice from the EPA and a cost benefit analysis is undertaken on the different offset types.

The City is willing to offset the loss to be incurred. If required, the City of Gosnells has two potential offset sites: Webster Park and Bullfinch Site. Further details are included in Section 8.2 in the Referral Supporting Document. The two proposed offset sites are shown on Figures 11 and 12.

6 Matters of National Environmental Significance

1. Carnaby's cockatoo - *Calyptorhynchus latirostris*

- **Species been recorded:** Yes
- **Receiving and existing environment**

Refer to section 6.4.2.4 and Figures 9 and 10 in the Referral Supporting Document and Appendix B - Ecological Survey.
- **Range and habitat preference**

Refer to section 6.4.2.4 in the Referral Supporting Document and sections 5.1.3 and 5.2.4 in Appendix B - Ecological Survey.
- **Likelihood of occurrence:** High Potential
- **Reason for likelihood of occurrence**

Refer to section 6.4.2.4 in the Referral Supporting Document.
- **Habitat suitability for MNES**

Refer to section 6.4.2.4 in the Referral Supporting Document.
- **Relevant impacts**

Refer to section 6.4.3 and 6.4.5 in the Referral Supporting Document.
- **Assessment of impacts against criteria**

Refer to EPBC referral No. 2016/7735 on the Federal Department's website. The EPBC approval was granted on 25 October 2018.
- **Safeguards and mitigations**

Refer to section 6.4.4 in the Referral Supporting Document.
- **Summary**

The Proposal was referred under the EPBC Act due to the potential impact on listed threatened species, namely Black Cockatoos (2016/7735). The Proposal was approved on 25 October 2018 with conditions including (Appendix J):

 1. For the protection of the EPBC Act listed species, the approval holder must not clear more than 4.58 hectares within the Proposal.
 2. To mitigate and manage impacts to EPBC Act listed species, the approval holder must comply with and implement the Revegetation Management Plan, Landscape Management Plan and Environmental Management Plan.
 3. Prior to the commencement of the action install three artificial nesting hollows within 3 km of the Proposal

each artificial nesting hollow installed under condition 3 must be monitored and maintained in accordance with relevant artificial hollow guidance for the life of the approval, with maintenance actions, if required, undertaken outside

of the breeding season and before the commencement of the next breeding season.

Policy and Guidance

Refer to section Table 11 in section 6.2 of the Referral Supporting Document.

7 Objectives and Principles of the EP Act

7.1 Legislation Objectives

Extract from Table 10 in section 5 of the Referral Supporting Document:

The object of the EP Act is to protect the environment of the State, having regard to the five principles. The Proposal's predicted outcomes have been considered in relation to the environmental principles and the EPA's environmental objectives for each key environmental factor.

Mitigation of environmental impacts from this Proposal have been assessed through a hierarchy of avoid, minimise, reduce, rehabilitate, and offset environmental impacts. This is achieved through the development and implementation of management measures to mitigate and manage environmental impacts during construction and operation.

An Offset Strategy will be developed to mitigate remaining significant residual impacts on relevant environmental factors.

7.2 Consideration of the Principles of the EP Act

1. The precautionary principle

Extract from Table 10 in section 5 of the Referral Supporting Document:

Baseline studies and investigations were commissioned through: Woodman Environmental Consulting (2003), ENV Australia (2010), 360 Environmental (2014), Terrestrial Ecosystems (2014, 2016), Glevan Consulting (2015), Natural Area Consulting (2016), PGV Environmental (2016, 2018), Spineless Wonders (2017), RPS (2018), Cardno (2018), Douglas Partners (2018), Urbaqua (2020, 2021, 2022), Stantec (2022) and Biologic (2022), to understand the environmental and social values of the area proposed for the Garden Street extension.

Potential impacts have been identified and described under each key environmental factor. Information gathered during the commissioned studies has been used to inform the environmental impact assessment and reduce uncertainty around the prediction of impacts for the assessment.

2. The principle of intergenerational equity

Extract from Table 10 in section 5 of the Referral Supporting Document:

Measures to avoid and minimise impacts to the environment have been identified and implemented to ensure the value of environmental health and ecological functions are maintained for future generations.

The Garden Street extension will significantly reduce traffic volume and strain on existing road infrastructure, as well as reduce the need for vehicles cutting through local streets thereby improving local streets amenity for residents. The Garden Street extension is essential as a road connection to the future Della Vedova development, which will include affordable residential housing, multiple commercial precincts, schools, aged care facilities, community centres etc. This will greatly benefit future generations.

3. Principles relating to improved valuation, pricing, and incentive mechanisms

Extract from Table 10 in section 5 of the Referral Supporting Document:

The City acknowledges the need for improved valuation, pricing and incentive mechanisms and endeavours to pursue these principles where practicable. For example:

- Environmental factors have played a role in determining the planning and design of the Proposal, such as location of drainage infrastructure (balancing culverts) to maintain connection of the wetland and to allow fauna to pass safely under the road.

- Impacts on flora, vegetation and terrestrial fauna have been assessed and mitigation measures proposed, such as reducing the overall development envelope for the road design by 40% from 4.35 ha to 2.65 ha.

4. The principle of the conservation of biological diversity and ecological integrity

Extract from Table 10 in section 5 of the Referral Supporting Document:

Studies and investigations have been used to identify and confirm the range and condition of the environmental factors within and surrounding the Development Envelope. This has included flora, vegetation and fauna assessments for threatened species and vegetation condition (Biologic, 2022).

There are patches of biological diversity and ecological integrity within and adjacent to the Development Envelope. Mitigation measures have been developed so as not to compromise biodiversity or ecological integrity.

5. The principle of waste minimisation

Extract from Table 10 in section 5 of the Referral Supporting Document:

Management strategies will be implemented to ensure the generation of waste during the construction phase is minimised. All activities shall be carried out with the principles of cleaner production and waste minimisation, for example discharge of contaminated water into the environment is minimised through the road drainage design with inclusion of two gross pollutant traps to treat first flush events.

Waste will be minimised by adopting the hierarchy of waste controls:

- Avoid and reuse at waste stream source
- Reuse and recycling shall be adopted where practicable
- All waste shall be collected and removed from site.

8 Conclusions

8.1 Holistic impact assessment

Refer to section 10 in the Referral Supporting Document.

8.2 Cumulative environmental impact assessment

Refer to section 11 in the Referral Supporting Document.

8.3 Conclusion

The environmental outcomes for each key environmental factor are discussed in the following sections of the Referral Supporting Document:

- Flora and Vegetation: section 6.3.6
- Terrestrial Fauna: section 6.4.6
- Inland Waters: section 6.5.6

Refer to section 11.1 for a conclusion on the Proposal.

9 Supporting documents

Attachments

- Garden Street Extension Referral Supporting Document October 2022.pdf
- App A - Traffic Impact Study - Stantec 2022.pdf
- App B - Ecological Survey - Biologic 2022 reduced.pdf
- App C - SRE Desktop Assessment - Phoenix 2022.pdf
- App D - Hydrology Study and Impact Assessment - Urbaqua 2022.pdf
- App E - Groundwater Monitoring Dec 2017-Nov 2018 - Cardno 2018.pdf
- App F - Preliminary ASS and Groundwater Investigation Report - Douglas Partners 2018.pdf
- App G - GHG Assessment Report - GHD 2022.pdf
- App H - Transport Position Statement .pdf
- App I - Engineering Plans (combined).pdf
- App J - EPBC Final Decision Notice.pdf
- Att 1 - Proposal Content Document - Garden Street Extension Project.pdf

Relevant maps