ATTACHMENTS DISTRIBUTED UNDER SEPARATE COVER

ITEM-95  CCL 10/12/19 – ADOPTION OF PROCUREMENT POLICY
Attachment A: Draft Procurement Policy
Attachment B: Worked Example of Tender Assessment

ITEM-97  CCL 10/12/19 – ENDORSMENT OF DRAFT LOCAL STRATEGIC PLANNING STATEMENT FOR EXHIBITION
Attachment A: Draft Local Strategic Planning Statement
Attachment B: Housing Needs and Local Character Study Evidence Report
Attachment C: Employment Lands Strategy

ITEM-98  CCL 10/12/19 – EXHIBITION OF DRAFT SECTION 7.11 WESTERN CORRIDOR LOCAL CONTRIBUTIONS PLAN 2013
Attachment A: Draft Section 7.11 Western Corridor Local Infrastructure Contributions Plan 2013
Attachment B: Western Corridor Traffic and Transport Study, 2019 (prepared by Bitzios Consulting)
Attachment C: Relevant Ministerial - Direction Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012 as amended

ITEM-99  CCL 10/12/19 – DRAFT AMENDMENTS TO NEWCASTLE DCP 2012 – 233 WHARF ROAD AND 250 AND PART 150A SCOTT STREET, NEWCASTLE
Attachment A: Draft Newcastle Development Control Plan 2012 Section 6.01 Newcastle City Centre
Attachment B: Site map and proposed zoning map
ITEM 95  ADOPTION OF PROCUREMENT POLICY

Item 95 – Attachment A:  Procurement Policy

Item 95 – Attachment B:  Worked Tender Assessment Example
CCL 10/12/19
ADOPTION OF PROCUREMENT POLICY

Item 95 - Attachment A:– Procurement Policy
Procurement Policy
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Part A - Preliminary

1 Purpose

1.1 The purpose of the Policy is to provide a framework for all procurement at CN and to demonstrate that all public monies have been spent in line with community objectives and expectations.

2 Scope

2.1 The Policy applies to the Elected Council and staff who undertake any aspect of Procurement on behalf of CN.

2.2 The Policy does not apply to the acquisition, disposal or lease of land and property.

3 Principles

3.1 In conducting Procurement, CN commits itself to the following principles:

3.1.1 **Accountability and transparency** - procurement and tendering processes will be open, clear, fully documented and defensible.

3.1.2 **Honesty and fairness** - procurement and tendering processes and business relationships will be conducted with honesty, fairness and probity at all levels. Confidentiality of information will be maintained.

3.1.3 **Value for Money** – procurement and tendering processes will be objectively assessed to ensure value for money by taking into account both price and non-price factors (including supplier risk and return on investment).

3.1.4 **Consistency** – consistent processes must be used in all stages of the procurement and tendering process.

3.1.5 **Probity** – procurement and tendering processes will encourage competitive tendering and be open, fair, consistent and transparent and comply with the Local Government Act 1993, the Local Government (General) Regulation 2005, CN’s Code of Conduct and ICAC’s Managing Conflicts of Interest in the Public Sector.

3.1.6 **Ethical Procurement** – procurement and tendering processes will seek to:
- purchase sustainable/green products and services;
- comply with the Modern Slavery Act 2018; and
- support the UN Sustainable Development Goals.

3.1.7 **Supplier Diversity** – procurement and tendering processes will seek to include suppliers from:
- Local Businesses;
- Aboriginal Owned Businesses; and
- Disability Employment Organisations.

3.1.8 **Work Health & Safety** – procurement and tendering processes will ensure the protection of CN staff and other persons against harm to their health, safety and welfare through the elimination or minimisation of risks.
Part B - Responsibilities

4 Elected Council

4.1 Adopt CN's Operational Plan.

4.2 Accept tenders called by CN with a value of $1M or greater where the tender is pursuant to s55(1) of the Act.

4.3 Comply with legislative, policy and procedural requirements when determining tenders.

4.4 Comply with the Councillor Expenses and Facilities Policy.

5 CEO and Directors

5.1 Make budgetary recommendations to the Council through CN's Operational Plan.

5.2 Oversee the development of program, project and strategic Procurement plans to support the delivery of projects within budget.

5.3 Ensure Service Units comply with legislative, policy and procedural requirements when undertaking Procurement and tendering.

5.4 Take appropriate action in response to instances of non-compliance with this Policy or relevant legislation.

5.5 Ensure probity principles and requirements are met.

5.6 Negotiate, review, execute and administer Procurement contracts in accordance with Financial Authorisation.

6 Service Unit Manager

6.1 Ensure all Procurement undertaken by their Service Unit complies with the principles and requirements of this Policy.

6.2 Ensure the Responsible Officer has completed relevant training and is suitably qualified in the area of procurement and contracts administration.

6.3 Ensure the Responsible Officer complies with legislative, Policy and procedural requirements when undertaking procurement and tendering.

6.4 Ensure that there is an approved budget before allowing the procurement to commence.

6.5 Completion of risk assessments in accordance with associated procedures to identify high risk procurement activities and escalate to the Legal Service Unit for advice as necessary.

6.6 Oversight of probity for tenders under $1M and consultation and assistance to the Legal Service Unit (for tenders over $1M) or external probity advisor (for tenders over $5M).

6.7 Negotiate, review, execute and administer Procurement contracts in accordance with Financial Authorisation.

6.8 Identification of contract disputes and escalation to the Legal Service Unit in a timely manner.

7 Legal Service Unit

7.1 Provide specialist contract advice on:
• tenders and expressions of interest (with an estimated value of $250,000 or more) to ensure compliance with legislative, policy and procedural requirements;
• engagement of Consultants (regardless of value); and
• other procurement processes where the Service Unit Manager considers the nature of the procurement to be high risk and seeks advice from the Legal Service Unit.

7.2 Undertake corporate-wide tenders where the goods, works and services span one or more CN’s Service Units and where the expenditure levels exceed the $250,000 tender threshold.

7.3 Notify the NSW Indigenous Chamber of Commerce whenever CN is advertising a tender for goods, works or services with an estimated value of over $250,000.

7.4 Manage a centralised contracts register and maintain a contractor performance reporting system.

7.5 Provide advice on the negotiation of contracts when requested by Service Unit Managers.

7.6 Provide advice on contract disputes when requested by Service Unit Managers.

7.7 Conduct audits to confirm compliance with this Policy, as well as its associated procedures, and report any non-compliance to Directors and Service Unit Managers.

7.8 Act as probity advisors for tenders between $1M and $5M in value.

8  Finance Service Unit

8.1 Oversight of purchase orders in the OneCouncil system.

8.2 For Procurement under $250,000 (excluding Consultants), undertake compliance checks with this Policy and associated procedures.

8.3 Procurement of all inventory for CN’s Depot Store.

8.4 Oversight of strategic procurement of goods.

8.5 Communicate to CN staff which suppliers qualify under the definition of Local Businesses, Aboriginal Owned Businesses and Disability Employment Organisations.

8.6 Monitor and provide advice to Responsible Officer(s) on Established Panels for Procurement under $250,000.

9  Responsible Officer

9.1 Complete relevant and required training.

9.2 Undertake Procurement in accordance with this Policy, its associated procedures and legislative requirements

9.3 Ensure all program/project approvals and documentation as well as budget are in place prior to commencing Procurement.

9.4 Retain complete and comprehensive records of all Procurement activities and processes using CN’s corporate system (OneCouncil).

9.5 Explore options to engage suppliers that meet the definitions of:

• Aboriginal Owned Businesses;
• Disability Employment Organisations; and
• Local Businesses.
9.6 Specify requirements having regard to CN’s Risk Management Framework, WHS Management System, supplier diversity principles, environmental standards, technical standards and insurance requirements.

9.7 Accept the procured goods, works or services (acceptance may include verifying compliance with the specified requirements, standards, codes or the like).

9.8 Administer contracts including maintaining effective relationships with suppliers, ensure contract milestones are met and schedule regular contractor management/performance meetings.

9.9 Undertakes procurement planning, ensuring continuity of supply/service and implements transition plans for multi-year contracts over $250,000.

10 Probity Advisor

10.1 Advise and report on compliance (or any non-compliance) with this Policy, its associated procedures and legislative requirements.

10.2 The Probity Advisor will be:

- Tenders under $1M – the Service Unit Manager will be responsible for probity reporting to their Director;
- Tenders between $1M and $5M – A member of the Legal Service Unit reporting to the responsible Director, and, where appropriate, the elected Council; or
- Tenders over $5M – Externally appointed Probity Advisor reporting to the responsible Director and, where appropriate, the elected Council. For projects assessed as being of low risk the responsible Director, or a Project Control Group if one is in place, may request in writing that a member of the Legal Service Unit should act as the Probity Advisor.

11 Tenderer

11.1 Act ethically and in accordance with CN’s business ethics statement.

11.2 Report suspected corrupt conduct in accordance with tender and contract requirements.

12 All Staff

12.1 Comply with this Policy, other relevant CN policies and legislative requirements in undertaking Procurement.

12.2 Ensure that all purchases made using a CN corporate credit card comply with this Policy and the Purchasing Procedure.
Part C - Requirements

13 Value for Money

13.1 All Procurement must demonstrate how value for money is achieved regardless of the method of procurement. Value for money does not automatically mean the ‘lowest price’ and is a comparison of the benefits in the proposed contract with the whole-of-life costs of the proposed contract or project.

13.2 Value for money factors, include but are not limited to:

- experience, quality, reliability and timeliness;
- service and risk profiles; and
- initial and ongoing costs.

14 Probity and Conflicts of Interest

14.1 Directors, Service Unit Managers and Responsible Officers are responsible for oversight of probity including monitoring and/or managing any conflicts of interest, ensuring compliance with processes and procedures, checking completeness of documentation and records and providing a final probity checklist or report.

14.2 CN’s Code of Conduct establishes standards of behaviour expected of staff and Councillors. All conflict of interests in relation to Procurement activity must be declared to the staff member’s supervisor. Conflicts of interest must be managed in accordance with the requirements of the Code of Conduct.

15 Confidentiality

15.1 Confidentiality of information relating to quotes and tenders such as intellectual property, proprietary information or commercial-in-confidence information must be maintained and not be disclosed without prior consent of a contractor or where disclosure is required under the NSW Government Information (Public Access) Act 2009.

16 Thresholds

16.1 Procurement of Goods, Works and Services

The following minimum number of quotes must be obtained prior to purchasing or entering into a contract for goods, works and services:

<table>
<thead>
<tr>
<th>Estimated value</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>under $3,000</td>
<td>No written quote required</td>
</tr>
<tr>
<td>between $3,000 and $150,000</td>
<td>Two written quotes</td>
</tr>
<tr>
<td>between $150,000 and $250,000**</td>
<td>Three written quotes</td>
</tr>
<tr>
<td>$250,000 or more**</td>
<td>Tender or approved exemption</td>
</tr>
</tbody>
</table>

** Note: see Section 20.1 (Contracts)
16.2 Procurement of Consultants

The following minimum number of quotes must be obtained prior to engaging a Consultant:

<table>
<thead>
<tr>
<th>Estimated value</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>under $30,000**</td>
<td>One written quote</td>
</tr>
<tr>
<td>between $30,000 and $150,000**</td>
<td>Two written quotes</td>
</tr>
<tr>
<td>between $150,000 and $250,000**</td>
<td>Three written quotes</td>
</tr>
<tr>
<td>$250,000 or more**</td>
<td>Tender or approved exemption</td>
</tr>
</tbody>
</table>

** Note: see Section 20.1 (Contracts)

16.3 Measures which intentionally seek to avoid the requirement to tender or seek quotes, for example contract splitting, placing multiple orders, seeking multiple quotations with a single supplier or engaging in effect a single supplier under different guises, are considered to breach this Policy.

17 Exemptions from Thresholds

17.1 Where an exemption is provided for under section 55(3) of the Act for a contract more than $150,000 involving the provision of services which are currently being provided by employees of CN, then the requirement is to call tenders.

17.2 Procurement is exempt from the thresholds set out in clause 16:

- where an exemption is provided for under section 55(3) of the Act (including but not limited to Procurement from a Disability Employment Organisation, an Approved Agency, an emergency or for extenuating circumstances);
- where the supplier is on an Established Panel (see clause 17.4 below); or
- where a single quote acceptance has been approved (see clause 17.5 below).

17.3 Notwithstanding the above, the Service Unit Manager, Director or CEO must approve an exemption having regard to the Procurement being value for money, meeting probity principles and ensuring the Procurement is in compliance with this Policy and associated procedures.

17.4 When purchasing from an Established Panel, the Responsible Officer must demonstrate how the procurement is achieving value-for-money. If the Procurement is more than $150,000 the Responsible Officer is still required to obtain 3 quotes.

17.5 A single quote acceptance exemption will only apply in the following circumstances:

- if the Procurement is under $250,000; and
- if CN is required to use to a single supplier because of existing proprietary goods or services at CN; or
- the specialist nature of the Procurement means that there is only one demonstrated supplier that meets the requirements.
18 Compliance and Breach

18.1 Compliance with this Policy and associated procedures will be audited. Breaches will be taken seriously and dealt with in accordance with CN’s Code of Conduct.

18.2 Concerns of non-compliance with this Policy should be reported to Legal Service Unit. Alternatively, the Responsible Officer may choose to report a non-compliance under the Public Interest Disclosures Act.

19 Procedures

19.1 All Procurement must be undertaken in accordance with:

• Procurement under $250,000 (excluding Consultants) - CN’s Purchasing Procedure.
• Procurement over $250,000 (or engaging Consultant services of any value) – CN’s Tendering & Contracts Procedure.

20 Contracts

20.1 The following types of Procurement are required to have a formal CN contract in place:

• the engagement of any Consultant;
• any Procurement over $250,000 in value;
• any Procurement that has been assessed as being high risk; or
• any works on public infrastructure over $50,000 in value.

21 Major Projects

21.1 All projects that require a Project Management Plan (as set out in the CN Project Management Procedure) must consider and plan for Procurement as a specific phase in the project delivery.

21.2 As such, the Project Management Plan for major projects will address the following Procurement requirements:

• governance and probity;
• procurement planning and timeframes; and
• procurement budget and resourcing.

22 Mandatory Assessment Criteria

22.1 In assessing quotes or tender submissions, the following assessment criteria and weightings will apply:

<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>% Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier Diversity</td>
<td>minimum 5%</td>
</tr>
<tr>
<td>Work Health &amp; Safety</td>
<td>minimum 10%</td>
</tr>
</tbody>
</table>
Part D - Supplier Diversity

23 Local Preference

Under $250,000

23.1 When undertaking Procurement under $250,000, the Responsible Officer will consider obtaining quotes from Local Businesses and will include Local Business as an evaluation criteria for assessing quotes.

Over $250,000

23.2 When undertaking tenders over $250,000, the Responsible Officer, in conjunction with the Service Unit Manager, will include Local Business as a tender assessment criteria.

24 Indigenous Procurement

Under $250,000

24.1 When undertaking Procurement under $250,000, the Responsible Officer will consider obtaining quotes from Aboriginal Owned Businesses and will include Aboriginal Owned Businesses as an evaluation criteria for assessing quotes.

Over $250,000

24.2 When undertaking tenders over $250,000:

- the Legal Service Unit will notify the NSW Indigenous Chamber of Commerce of the tender; and
- the Responsible Officer in conjunction with the Service Unit Manager, will include Aboriginal Owned Businesses as a tender assessment criteria.

25 Disability Employment Organisations

Under $250,000

25.1 When undertaking Procurement under $250,000, the Responsible Officer will consider obtaining quotes from Disability Employment Organisations and will include Disability Employment Organisations as an evaluation criteria for assessing quotes.

Over $250,000

25.2 When undertaking tenders over $250,000:

- in accordance with section 55 (3) (q) of the Act, the Responsible Officer may procure from a Disability Employment Organisation without the need to call tenders; or
- the Responsible Officer, in conjunction with the Service Unit Manager, will include Disability Employment Organisation as a tender assessment criteria.
Part E - Sustainable and Ethical Considerations

26 Sustainable Procurement

26.1 CN will pursue and implement effective ways of minimising waste and ensure efficient and sustainable use of energy and natural resources in the procurement of goods, works and services, in support of the UN Sustainable Development Goals.

26.2 The Responsible Officer will preference environmentally and socially responsible materials, products and services whenever they perform satisfactorily, are safe and are value for money over the lifetime of the product.

26.3 In assessing quotes and tenders, the Responsible Officer may incorporate considerations to address significant environmental and social impacts and/or risks into their assessment criteria, alongside other factors such as quality, cost, reliability etc.

27 Modern Slavery

27.1 CN will ensure it complies with its obligations under the Commonwealth Modern Slavery Act 2018 and any other Modern Slavery legislation that may come into effect.

27.2 CN will undertake ongoing due diligence to minimise or eliminate the risk of Modern Slavery occurring in its supply chain.

27.3 As part of its due diligence, CN will undertake an annual risk assessment of all CN suppliers. CN will not participate in any Procurement with a supplier that is found to be engaging in Modern Slavery.

Part F - Financial Authorisations

28 Approved Levels

28.1 The Responsible Officer/Service Unit Manager must only undertake Procurement responsibilities within their limits of Financial Authorisation (see CN’s Register of Financial Authorisations).

28.2 Where there are changes to the original contract value/cost of the Procurement, approval must be sought in accordance with Financial Authorisations.

28.3 The CEO, Director or Service Unit must take in account the following when approving variations:

- Financial Authorisations for variations;
- Budget availability;
- Ensuring the variation continues to achieve value for money; and
- Significance of the change from the original scope or specification and consideration as to whether a new Procurement process is more appropriate.
Annexure A - Definitions

Aboriginal Owned Business means a business that is recognised/accredited by the NSW Indigenous Chamber of Commerce or the First Australians Chamber of Commerce and Industry.


Approved Agency means an agency approved as exempt from tendering under s55 of the Act. For the avoidance of doubt this means the NSW Procurement Board, Commonwealth Dept. of Administrative Services, Local Government Procurement or Procurement Australia.

CEO means Chief Executive Officer of the City of Newcastle and includes their delegate or authorised representative.

References to the Chief Executive Officer are references to the General Manager appointed under the Local Government Act 1993 (NSW).

City of Newcastle (CN) means Newcastle City Council.

Consultant means a person or company engaged to provide advice or recommendations and/or creates any intellectual property (i.e. creating new designs/ drawings/ reports/ images/ specifications/ etc.). For example, a consultant includes engineers, architects, environmental specialists, surveyors, planners, lawyers, doctors, auditors, IT software programmers, graphic designers, photographers, accountants, project managers and artists.

Council means the elected Council.

Established Panel means a panel of suppliers or Consultants with whom CN has entered into a contract with subsequent to a tendering process.

Disability Employment Organisation means a business that is approved as a disability employment organisation under the Public Works and Procurement Act 1912 (NSW).

Financial Authorisation means CN’s Register of Financial Authorisations, which lists the relevant financial authority limits delegated to each staff member.

Local Business means a business that either has a branch or office physically located within the Newcastle Local Government Area or has its head office located within the Newcastle Local Government Area or an adjoining council Local Government Area (for the avoidance of doubt, this means Lake Macquarie, Port Stephens, Cessnock or Maitland).

Modern Slavery means any conduct involving the use of any form of slavery, servitude or forced labour to exploit children or other persons taking place in the supply of goods, works or services.

Procurement means:

- all expenditure payable by CN to Consultants or for goods, works and services
- income payable to CN from contracted services; or
- entering into contracts, whether through a contract agreement and/or quote, acceptance and purchase order.

Project Control Group means a project-specific group of key CN stakeholders who are responsible for oversight and governance of a CN major project.

Responsible Officer means the CN staff member tasked with undertaking the Procurement. (The Responsible Officer may include a Specific Talent Contractor, Service Unit Manager or Director).

UN Sustainable Development Goals means the 17 sustainable development goals adopted on 1 January 2016 as part of the 202 Agenda for Sustainable Development.

Unless stated otherwise, a reference to a section or clause is a reference to a section or clause of this Policy.
# Annexure B - Policy Authorisations

<table>
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<th>Position Number / Title</th>
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### Document Control

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<th>Policy title</th>
<th>Procurement Policy</th>
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<tbody>
<tr>
<td>Policy owner</td>
<td>Chief Financial Officer and Manager Legal</td>
</tr>
<tr>
<td>Policy expert/writer</td>
<td>Manager Business Finance and Contracts Management Specialist</td>
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</table>
| Associated Procedure Title (if applicable) | - Tendering and Contracts Procedure  
- Purchasing Procedure |
| Procedure owner (if applicable) | Chief Financial Officer and Manager Legal |
| Prepared by           | Finance / Legal                     |
| Approved by           | Council                             |
| Date approved         | To be completed by Legal            |
| Policy approval form reference | ECM#                               |
| Commencement Date     | 1/02/2020                           |
| Next revision date (date policy will be revised) | Date the Policy is due for revision |
| Termination date      | To be completed by Legal (one year post revision date) |
| Version               | Version number 4                    |
| Category              | Financial                           |
| Keywords              | Procurement, Purchasing, Contracts, Tendering, Supply |
| Details of previous versions | Procurement Policy 2015 Version 3 - ECM #4747834 |
| Legislative amendments | Section 55, Local Government Act – amended 25 June 2019 |
| Relevant strategic direction | Open and Collaborative Leadership |
| Relevant strategy     | Open and Transparent Governance Strategy |
| Relevant legislation/codes (reference specific sections) | This policy supports CN’s compliance with the following legislation:  
  Government Information (Public Access) Act 2009  
  Local Government Act 1993  
  Local Government (General) Regulation 2005  
  Modern Slavery Act 2018  
  Public Interest Disclosures Act 1994  
  State Records Act 1998 |
| Other related policies/documents/strategies | Code of Conduct  
Fraud & Corruption Strategy  
Records Management Policy  
Tendering and Contracts Procedure  
Purchasing Procedure  
Register of Financial Authorisations  
Managing Conflicts of Interest in the Public Sector (ICAC)  
Tendering Guidelines for NSW Local Government (OLG)  
Preparing, Reviewing and signing Legal Documents  
WHS Procurement of Goods (OP 3.6.26)  
WHS Procurement of Services (OP 3.6.27) |
<table>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Related forms</td>
<td>See Tendering and Contracts Procedure and Purchasing Procedure</td>
</tr>
<tr>
<td>Required on website</td>
<td>Yes</td>
</tr>
<tr>
<td>Authorisations</td>
<td>Functions authorised under this Policy at Annexure B</td>
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</tbody>
</table>
CCL 10/12/19
ADOPTION OF PROCUREMENT POLICY

Item 95 - Attachment A:– Worked Tender Assessment Example

DISTRIBUTED UNDER SEPARATE COVER
MANDATORY TENDER ASSESSMENT CRITERIA
(Guide CMPG07: Rev. 3)

Supplier Diversity Assessment Criteria
It is a requirement under the Procedures that preference is given to suppliers that are:
- Local Businesses;
- Aboriginal-owned Businesses; or
- Disability Employment Organisations.

All tenders over $250,000 in value are to have an assessment criteria, called Supplier Diversity, that gives preference to these types of suppliers. The Supplier Diversity criteria shall have a minimum weighting of 5%.

The Procurement & Tendering Policy uses the following definitions:
- Aboriginal Owned Business means a business that is recognised/accredited by the NSW Indigenous Chamber of Commerce or the First Australians Chamber of Commerce and Industry.
- Disability Employment Organisation means a business that is approved as a disability employment organisation under the Public Works and Procurement Act 1912. [For a list of approved organisations, please see this website: https://buyability.org.au/directory/ ]
- Local Business means a business that either has a branch or office physically located within the Newcastle Local Government Area or has its head office located either within the Newcastle Local Government Area or an adjoining council Local Government Area (for the avoidance of doubt, this means Lake Macquarie, Port Stephens, Cessnock or Maitland).

In using this assessment criteria, you will need to include the Schedule – Supplier Diversity in the Request for Tender document that you send out. This Schedule asks a range of specific questions as to whether a tenderer qualifies as a Local Business, an Aboriginal Owned Business or a Disability Employment Organisation.

The answers that a tenderer provides to the Schedule – Supplier Diversity can be used as the basis of scoring this assessment criteria. The scoring can be as follows:
- Supplier fails to meet any diversity criteria score = 0
- Supplier meets one or more diversity criteria score = 5

Work Health & Safety Assessment Criteria
It is a requirement of the WHS Management System that any tender involving building and construction works shall have WHS as an assessment criteria.

Where WHS is a required criteria, it shall have a minimum weighting of 10%.

In using this assessment criteria you will need to include the Schedule – WHS in the Request for Tender document that you send out. This Schedule asks a range of specific questions about the Work Health & Safety systems and procedures of a tenderer.

The answers that a tenderer provides to the Schedule – WHS can be used as the basis of scoring this assessment criteria. If you need assistance in assessing the WHS capabilities of a tenderer, you can contact the WHS Section for advice.
This example is a tender assessment for the supply and installation of a replacement air conditioning unit. The tender assessment criteria were:

- Price 55% (weighting)
- Contract Program 20%
- Experience 10%
- WH&S 10%
- Supplier Diversity 5%

The tender prices are converted from a $ value into a score (from 0 – 5) using the formula:

$$\text{Point Score} = 2.5 + 2.5\left(\frac{m - t}{m}\right)$$

where $m$ = median tender price
$ t$ = tender price

The point scores are then transferred over to the evaluation matrix sheet.

### Tender Assessment Matrix

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weighting (%)</th>
<th>Tenderer: A</th>
<th>Point Score</th>
<th>Criteria Value</th>
<th>Tenderer: B</th>
<th>Point Score</th>
<th>Criteria Value</th>
<th>Tenderer: C</th>
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<th>Criteria Value</th>
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<tr>
<td>Contract Program</td>
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The total weighted value is calculated by adding up all the criteria value scores.

The tenderer with the highest total weighted value is the recommended tenderer.

For each tender assessment criteria (except price) the assessment panel members are required to score a tender in range of 0 to 5. (Whereby: 5 = excellent and 0 = fails to comply)

Each member of the tender assessment panel is required to sign a conflict of interest declaration.
ENDORSEMENT OF DRAFT LOCAL STRATEGIC PLANNING STATEMENT FOR EXHIBITION

Item 97 - Attachment A: Draft Local Strategic Planning Statement
Item 97 - Attachment B: Housing Needs and Character Study Evidence Report
Item 97 - Attachment C: Employment Lands Strategy
ENDORSEMENT OF DRAFT LOCAL STRATEGIC PLANNING STATEMENT FOR EXHIBITION

Item 97 - Attachment A: Draft Local Strategic Planning Statement
Acknowledgment

The City of Newcastle acknowledges the traditional country of the Awabakal and Worimi peoples. We recognise and respect their cultural heritage, beliefs and continuing relationship with the land, and that they are the proud survivors of more than two hundred years of dispossession. City of Newcastle reiterates its commitment to addressing disadvantages and attaining justice for Aboriginal and Torres Strait Islander peoples of this community.
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Message from the Lord Mayor, Nuatali Nelmes
TO BE INSERTED

Message from the Chief Executive Officer, Jeremy Bath
TO BE INSERTED
This Local Strategic Planning Statement (LSPS) is City of Newcastle’s (CN) plan to guide our land use decisions over the next 20 years. The LSPS will implement priorities from our Community Strategic Plan, Newcastle 2030, and brings together land use planning actions in other CN adopted strategies. The LSPS also gives effect to the State Government strategic directions for the Hunter region, outlined in the Hunter Regional Plan 2036 and the Greater Newcastle Metropolitan Plan 2036.

The LSPS outlines Planning Priorities to achieve the community’s land use planning vision and will inform our decisions on any changes to the planning rules in Newcastle Local Environmental Plan 2012 and the Development Control Plan 2012.

**The purpose of the LSPS is to:**

- Build on the strategic directions of the Community Strategic Plan.
- Detail our community’s 20-year land use planning vision;
- Outline the characteristics that contribute to our local identity;
- Identify our shared values to be maintained and enhanced; and
- Describe how growth and change will be managed into the future.
- Implement the Greater Newcastle Metropolitan Plan as it relates to CN.
- Identify where detailed strategic planning may be needed.
Planning Newcastle 2040: Global City, Local Character

To assist in developing this LSPS, CN undertook a comprehensive community consultation program. The engagement included the following activities:

- Dedicated Have Your Say consultation webpage
- Online vision, land use and neighbourhood character survey
- Interactive social pinpoint map to identify great streets, places and neighbourhoods
- Pop-up stalls at Wallsend Winter Fair, Newcastle Pride Fair, City Library, Tighes Hill TAFE, University of Newcastle NEWSpace.
- Kids ‘Big Picture’ Drawing Activity with a Newcastle map and template for drawing your own map prepared by illustrator Liz Anelli

Over 171 comments were pinned to the social pinpoint map
61 big picture drawings were supplied to Council by our young people
11 written submissions were received

491 people participated in the vision, land use and neighbourhood character survey.

What we heard:

**Our community highly value:**
- Special places centred on our natural environment, public spaces and parks such as Newcastle Beach, Bathers Way, Lambton Park and Blackbutt Reserve;
- The sense of community and opportunities for people to connect and engage in their streets, neighbourhoods and special places;
- Easy access to local shops, services and parks; and
- Cultural heritage and local character of different suburbs.

**Our community are most concerned about:**
- Traffic in local streets and the loss of trees and gardens arising from new medium and high density housing.
- The lack of safe separated cycleways, walking paths and integrated public transport.
- The loss of trees and public green spaces.

**Survey Respondents**

- 491 respondents
- Largest response age group: 16–19
- 52% identify as female
- 70% live in a detached house
Our land use planning vision

In 2040 Newcastle will be a smart, liveable, sustainable and connected global city.

We will have a mix of great places that Novocastrians feel attracted to and proud of, and which provide for all residents, workers, visitors and students, regardless of their background, age or status.

We will have:

### An efficient and integrated transport network

Our need for private car ownership and use will have declined as we choose to:

- Walk or cycle on our network of footpaths and separated cycleways;
- Use light rail that has been extended to Broadmeadow, John Hunter Hospital and University of Newcastle;
- Use rapid bus transit network linking Catalyst Areas and strategic centres across the Greater Newcastle Metropolitan Region, including the Newcastle Airport; and
- Use shared electric vehicles, on-demand autonomous buses and ride share services.

Freight will be transported on the dedicated freight rail line between Fassifern and Hexham. The Industrial Drive / Maitland Road corridor supports uses compatible with a freight corridor to and from the Port of Newcastle.

### A Green, liveable City

Our urban environment will be greener with natural areas retained and enhanced with more park and street plantings. Development will include trees and landscaped areas, green roofs and walls.

Blue and green corridors will be established with biodiversity sensitive design. Corridors will contain restored bushland, clean waterways and rehabilitated wetlands.

We will be a leader in resource recovery and reuse and be a sustainable carbon neutral city.

We will be a resilient city, with capacity to adapt with climate change.

We continue to collaborate with leading universities and other research institutions to understand and improve responses to emerging environmental and climate issues.

In our Catalyst Areas and Urban Renewal Corridors and Strategic Centres new development exceeds 6 green star energy rating;
A people-orientated city

Our City Centre attracts people of all ages and backgrounds as the business, civic, recreation and cultural hub of the Greater Newcastle Metropolitan Region.

Our local centres enable businesses to meet the changing retail and service needs of the community. Our local centres are easily accessed from all homes by active and public transport.

Our community is inclusive and socially connected with safe, accessible and walkable streets, parks and gathering spaces in each neighbourhood and local centre.

Our built environment recognises and responds to our valued cultural heritage, coastline and bushland, and complements the local character of each neighbourhood.

We proudly protect and celebrate our Aboriginal cultural heritage.

In each neighbourhood we have diverse housing types and tenures for a variety of household types, income levels and life stages. We have greater housing choice in our suburbs with more single, dual occupancy, terrace and manor houses. In Catalyst Areas, Strategic Centres and Urban Renewal Corridors we have a mix of terrace houses and apartment buildings.

We are leaders in sustainable, accessible and inclusive buildings. In our Catalyst Areas and Urban Renewal Corridors at least 20% of new housing is affordable and 5% meets the Platinum Standard of the Liveable Housing Design Guidelines.

A creative and innovative economy

The John Hunter Health and Innovation Precinct and Astra Defence and Aerospace Precinct are driving job creation, producing international standard innovations, advanced technologies and practices.

We are established leaders in sustainable and new energy industries including renewables and hydrogen.

High profile institutions and corporates have established headquarters in our City Centre Digital Precinct.

A diverse range of goods flow through the Port of Newcastle and an expanded Newcastle airport enabled by established logistics hubs and efficient integrated supply chains.

Our urban industrial areas continue to grow as incubators and hubs for innovative start-ups and support jobs in creative industries, urban services, advanced manufacturing and high value industries. Local businesses service international markets.

We are known internationally as a centre of technology development and innovation. Our leading research, and education institutions attract the world’s best STEM talent and students.

We attract many visitors from around the world to experience our valued natural, built and cultural environment and our diverse calendar of events.

Our night-time economy has grown and attracts people of all ages and backgrounds with a diverse range of venues and activities that support live music, arts and other entertainment.
Megatrends in a changing world

Megatrends are long term transformative changes that will affect the way we live. The CSIRO has identified 7 megatrends that will have a major impact on Australia over the next 20 years and need to be considered as we plan our future:

**More from less** – increasing demand for limited natural resources and a scarcity of these resources.

**Going, going... gone?** – A window of opportunity to protect biodiversity, habitats and the global climate.

**The silk highway** – rapid economic growth and urbanisation in Asia and the developing world.

**Forever young** – An ageing population, changed retirement patterns, chronic illness and rising healthcare expenditure.

**Virtually here** – digital technology reshaping retail and office precincts, city design and function of labour markets.

**Great expectations** – Changing consumer expectations for services, experiences and social interaction.

**An imperative to innovate** – Technological advancement is accelerating and it is creating new markets and extinguishing existing ones.
Local Context

Novocastrians are a proud community and our culture is shaped collectively by our history as a penal settlement and the birthplace of the Australian coal industry. The original inhabitants of the Newcastle area are the Awabakal and Worimi Aboriginal people, with later European settlement including a range of activities from farming to coal mining and industry.

While the industrial sector continues to play an important employment role, a substantial and growing portion of our economy is now based around the service sectors. We are home to artists, galleries, museums, theatres, creative enterprises, arts organisations, cultural education providers, cultural collections and a community that embraces cultural expression.

We have a diverse natural environment from coastal headlands and beaches to wetlands, mangrove forests, steep ridges and rainforest gullies. Our suburbs are also diverse, from the heritage lined streets of Newcastle East to leafy homes in our middle suburbs, such as Lambton and Kotara and more recent greenfield estates at Fletcher and Minmi.

The principles of ‘Newcastle Urbanism’ have been embraced by the community since our first Urban Strategy was adopted in 1998. The aim of Newcastle Urbanism is to provide greater choices to the community in terms of housing, employment, transport, social and cultural services, while offering reduced travel demand, improved air quality and greater identity for Newcastle, its city centre, and its local and neighbourhood centres.

The community’s commitment to the principles of Newcastle urbanism have been reaffirmed in the shared community vision for a smart, liveable and sustainable city under the Newcastle 2030 Community Strategic Plan.

“Mixed-use urban villages supported by integrated transport networks.”

Newcastle 2030 Community Strategic Plan

Over the next 20 years, we will need to facilitate new homes, jobs and services for an additional 38,000 people, while maintaining the aim of Newcastle Urbanism to retain our liveability, valued heritage, natural environment and diverse local character.
2016 Snapshot

Population: 164,104
- Median Age: 37
- Aboriginal and Torres Strait Islander: 3.5%
- Households: 62,336
  - 28% Lone person households
  - 68,817 private dwellings
  - 30% medium and high density housing
- 35% households rent
  - Median weekly rent: $344
- 30% households with a mortgage
  - Median weekly repayment: $410
  - Median weekly household income: $1,366

Source: .id the population experts, profile.id.com.au/newcastle

Economy

- No. jobs / Jobs by sector: 102,800
  - 20,293 (19.7%) in health care and social assistance
- Unemployment rate: 5.3% (March 2019)
- Journey to work: 75,551 or 73.3% by car
- Gross Regional Product: $17.617 Billion

Source: REMPLAN economy, economyprofile.com.au/newcastle

Development snapshot 2016–2018

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Source: .id the population experts, forecast.id.com.au/newcastle

2040 Population and Dwelling Projections

- Population: 202,049 ↑21%
- Households: 83,629 ↑34%

Source: .id the population experts, forecast.id.com.au/newcastle
Structure Plan

Urban Structure Plan

- Local Centres
- Catalyst Areas (as per Metro Plan 2030)
- Strategic Centres (as per Metro Plan 2030)
- Train Station
- Light Rail Service
- Ferry Service
- Heritage Conservation Area

Urban Growth Corridors
Future Investigation Urban Renewal Corridor (Indicative only)
- Industrial
- Residential
- Environmental and Open Space
- Commercial
- Special Uses
The Greater Newcastle Metropolitan Plan 2036 identifies ‘Catalyst Areas’ as places of metropolitan significance where substantial growth and change will occur to deliver new jobs and homes.

A collaborative approach is required to start a planned approach to growth and sustainability across the greater Newcastle area. The Hunter Joint Organisation of Councils and Committee for the Hunter will play key roles in supporting the delivery and implementation of the Metropolitan Plan.

A Newcastle Catalyst Areas Program Steering Group has been established by the Hunter and Central Coast Development Corporation to support the work of CN and key NSW government agencies in achieving the vision and outcomes of the Catalyst Areas.

Each catalyst area has a specific approach to achieving the desired future land uses and targets for new jobs and homes.

Seven of the Catalyst Areas are within the boundaries of the City of Newcastle. These are:

- Newcastle City Centre
- Beresfield – Black Hill
- Broadmeadow
- Callaghan
- John Hunter Hospital
- Kotara
- Newcastle Port

Land use and infrastructure planning for the catalyst areas will be critical to their success. The catalyst areas must be well connected and managed to provide new opportunities for employment generating uses.
The renewal of the Newcastle City Centre commenced in 2012 with the introduction of the State Government’s Newcastle Urban Renewal Strategy (NURS). This strategy advocated a strategic shift of the commercial core of the City from Newcastle East to Newcastle West.

Infrastructure investment including the new law courts, city campus of the University of Newcastle, construction of the Interchange at Newcastle West and the new light rail line to Newcastle East has seen record private investment in residential and commercial developments throughout the City centre.

CN will continue to monitor and review existing plans and work with the Hunter and Central Coast Development Corporation to ensure continued jobs and housing growth in our city centre.
The Beresfield – Black Hill Catalyst Area is ideally positioned to be a leading freight and logistics hub with easy access to the M1, Hunter Expressway, Newcastle Port and Newcastle Airport. CN will implement changes to the existing industrial zones to better facilitate this vision. Further strategic planning is needed to better understand constraints and opportunities before changes are implemented to planning controls across this catalyst area.
The renewal of this catalyst area is centred around the future development of a world class sport and entertainment precinct covering the areas of the existing Newcastle Entertainment Centre and Showground, McDonald Jones Stadium and a variety of other sports facilities located in this area. This catalyst area also includes substantial areas of former industrial land that provide opportunity for delivering growth in jobs, visitor accommodation and housing connected by a potential network of transport links to the Newcastle city centre and other surrounding catalyst areas. 

CN will continue collaborate with the Hunter and Central Coast Development Corporation to undertake the detailed strategic planning required to understand all constraints and opportunities before changes to planning controls are implemented in this catalyst area.
This catalyst area is centred on the University of Newcastle Callaghan campus but also takes in the surrounding local centres of Jesmond, Waratah and Warabrook. The University of Newcastle will lead strategic planning for the Callahan Campus Precinct and CN will collaborate with the University when undertaking the detailed strategic planning required to understand all constraints and opportunities before changes to planning controls are implemented in this Catalyst Area.

Figure 13: Catalyst Area Callaghan 2018

Map 6: Callaghan Catalyst Area – Greater Newcastle Metropolitan Plan 2036
© State of New South Wales and Department of Planning and Environment [2016]
John Hunter Health and Innovation Precinct contains the tertiary referral hospital for Northern NSW, private hospital services, forensic services, education, training and medical research facilities. Redevelopment of this precinct is guided by a Master Plan that includes a $780 million expansion of John Hunter Hospital and John Hunter Children’s Hospital. CN will continue to work with stakeholders to align the Newcastle Local Environmental Plan and Development Control Plan to accommodate growth in jobs and health services for the community within this precinct and surrounding areas. Detailed strategic planning will need to be undertaken to understand all constraints and opportunities before changes to planning controls are implemented for areas surrounding this precinct.

Figure 15: Catalyst Area
John Hunter Hospital
2018

Map 7: John Hunter Hospital Catalyst Area – Greater Newcastle Metropolitan Plan 2036
© State of New South Wales and Department of Planning and Environment [2018]
Kotara is currently the largest retail centre within the CN boundaries and provides a broad mix of retail floor space types. The Greater Newcastle Metropolitan Plan envisages the development of a mixed-use town centre to support further jobs and housing growth. Detailed strategic planning is needed to understand all constraints and opportunities before changes to planning controls are implemented in this Catalyst Area.
Newcastle Port

Targets 2036

The Newcastle Port is the largest port on the East Coast of Australia and a global gateway for NSW. A Master Plan (Port Master Plan 2040) has been prepared by the Port of Newcastle to identify future development opportunities to support growth and diversification of the Port. Some of the opportunities identified include:

The Newcastle Container Terminal in Mayfield;
The Newcastle Bulk Terminal in Walsh Point;
A specialised Automotive and Ro-Ro Hub;
Supporting the Maritime Precinct in Carrington;
Construction of the Newcastle Cruise Terminal in Carrington; and
The continuation and growth of major bulk trades including coal, fuel, fertiliser, wheat and mineral concentrates.

The Port of Newcastle and Department of Planning, Industry and Environment are the lead agencies in delivering the outcomes identified for this catalyst area. CN will continue to work these agencies to align the Newcastle Local Environmental Plan and Development Control Plan to support growth and diversification of the Port and increase job opportunities while minimising environmental and amenity impacts to surrounding lands.

Map 9: Newcastle Port Catalyst Area – Greater Newcastle Metropolitan Plan 2036 © State of New South Wales and Department of Planning and Environment [2018]
Our Planning Priorities
Prioritise active transport in our City

Rationale
Active transport is physical activity used for transport such as walking, skateboarding, scootering and cycling. It has many benefits including reducing the number of cars on our roads and improving health and wellbeing. Our community identifies a strong desire to incorporate active transport in their day to day travel options, but improvements are needed to our built environment to make this an attractive and safe travel option.

Principles
Prioritise active and public transport in the City, particularly in Catalyst Areas, Urban Renewal Corridors and strategic centres.

Actions
1.1 Working with key stakeholders identify targets for the construction of new separated cycleways and pedestrian paths each year.
1.2 Review and update the Newcastle Cycling Strategy and Action Plan and implement short term actions.
1.3 Review Newcastle Development Control Plan provisions for car parking, bicycle parking and end of trip facilities in Catalyst Areas, Strategic Centres and Urban Renewal Corridors.

Alignment with State and CN Priorities

How will we get there?
1.2a Continue to upgrade, extend and promote cycle and pedestrian networks

Gives effect to the Greater Newcastle Metropolitan Plan 2036
20. Integrate land use and transport planning

Supports implementation of the Sustainable Development Goals
11. Make cities and human settlements inclusive, safe, resilient and sustainable.

Related CN Plans and Strategies
Newcastle Transport Strategy
Newcastle Cycling Strategy and Action Plan
Support emerging transport opportunities and public transport improvements with continued integration of land use and transport planning.

Rationale
The location of trip attractors such as schools, shops and employment, their density and mix and relationship to where people live, affects how often cars are used to get around and the length of day to day trips. Integrating land and transport planning enables improved public transport and a more liveable city as people can get where they need to go easily and quickly without needing to rely on using their own cars. This not only reduces congestion but it also gives people more leisure time and allows infrastructure funding to be allocated to other improvements. Emerging transport technologies will also reshape the way people and goods move around the City and have the potential to improve liveability and sustainability in our City. Intensification of land use, increases in housing and employment in Urban Renewal Corridors, Strategic Centres and Catalyst Areas are needed to support extensions to the Light Rail and rapid bus transport.

Actions
2.1 Collaborate with relevant State Agencies in identifying opportunities for improved connections both to and between Catalyst Areas and Strategic Centres.

2.2 Review and update the Newcastle Transport Strategy and implement short term actions.

2.3 Review the Newcastle Local Environmental Plan and Development Control Plan to facilitate greater use of shared vehicles and other emerging transport technologies.

Principles
Where intensification of land uses are proposed comprehensive traffic and transport planning is undertaken to ensure the required infrastructure, initiatives and funding mechanisms are achievable.

Alignment with State and CN Priorities

<table>
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<th>How will we get there?</th>
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<tr>
<td>1.1a Support implementation of the regional transport strategy</td>
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<tr>
<td>1.1b Advocate for public transport improvements including extension of the light rail network</td>
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<tr>
<td>1.1c Plan and deliver accessible local infrastructure improvements for public transport</td>
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<tr>
<td>5.2a Plan for concentrated growth around transport and activity nodes.</td>
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Gives effect to the Greater Newcastle Metropolitan Plan 2036

20. Integrate land use and transport planning

Supports implementation of the Sustainable Development Goals

11. Make cities and human settlements inclusive, safe, resilient and sustainable.

Related CN Plans and Strategies

Newcastle Transport Strategy
Planning Priority 3

Protect freight movement from incompatible land uses

Rationale

Movement of freight between the Port of Newcastle, our industrial areas, and beyond the Hunter Region is important for the economic prosperity and employment opportunities of the entire state of NSW. The efficiency of freight movement is reliant on the provision of designated road and rail corridors, that are separated from impacts by local traffic and are not restricted due to their potential impact on the amenity of incompatible land uses. Freight corridors are protected by designating appropriate adjoining land uses and ensuring sensitive land use are adequately buffered from likely impacts.

Actions

3.1 Identify and protect potential strategic road and rail freight corridors from inappropriate or sensitive land uses.

3.2 Review land use controls in the Industrial Drive – Maitland Road corridor for compatibility with its use as a freight corridor.

Principles

The importance of freight corridors is prioritised over the introduction of new residential and other sensitive land uses.

Alignment with State and CN Priorities

Is consistent with Newcastle 2030 strategies

1.3a Ensure safe road networks through effective planning and maintenance.

Gives effect to the Greater Newcastle Metropolitan Plan 2036

23. Protect major freight corridors

Supports implementation of the Sustainable Development Goals

11. Make cities and human settlements inclusive, safe, resilient and sustainable.

Related CN Plans and Strategies

Newcastle Transport Strategy

Employment Lands Strategy

Economic Development Strategy
Green our neighbourhoods

Rationale
Urban green spaces in our city refers to private gardens, green roofs and walls, parks, street gardens and trees. Urban green spaces have many benefits to our health and wellbeing and are vital for biodiversity. Green spaces can enhance wellbeing by facilitating physical activity, social interaction and relaxation. Green spaces also improve air quality, reduce ambient temperature, store carbon and can improve the quality of stormwater run-off.

Our community highly value the existing urban green spaces as a major contributor to the local character of our neighbourhoods and for the health, wellbeing, and environmental benefits they provide. There is strong community support to enhance and expand our urban green spaces and networks.

Actions
4.1 Complete the review of the Newcastle Environmental Management Strategy 2013 and implement priority actions.

4.2 Review Newcastle Development Control Plan provisions for landscaped area and vegetation management including opportunities to use green roofs and walls.

4.3 Investigate additional public green spaces in the strategic planning of mixed-use Catalyst Areas, Strategic Centres and Urban Renewal Corridors.

4.4 Investigate opportunities to reduce hard surfaces and increase gardens in local centres and in our residential streets.

4.5 Review the Urban Forest Policy and implement priority actions.

Principles
Greenspace across City of Newcastle is maintained or improved.

The blue and green grids are improved.

Alignment with State and CN Priorities

Is consistent with Newcastle 2030 strategies

2.2a Provide and advocate for protection and rehabilitation of natural areas.

3.1a Provide quality parkland and recreation facilities that are diverse, accessible and responsive to changing needs.

5.1a Ensure our suburbs are preserved, enhanced and promoted, while also creating opportunities for growth

Gives effect to the Greater Newcastle Metropolitan Plan 2036

11. Create more great public spaces where people come together

12. Enhance the blue and green grid and urban tree canopy cover

Supports implementation of the Sustainable Development Goals

11. Make cities and human settlements inclusive, safe, resilient and sustainable.

15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Related CN Plans and Strategies

Newcastle Environmental Management Strategy
Newcastle Urban Forest Policy
Planning Priority 5

Protect and enhance our bushland, waterways and wetlands.

Rationale
As a coastal city located within the estuary of a major waterway, our region enjoys a comparatively rich variety of natural environments that support a diversity of habitats. This natural heritage contributes to our quality of life and provides many social and economic benefits to our community. Impacts on our natural environment from the urbanisation of our city (including poor quality stormwater run-off to our waterways, weed infestation of our bushland, and increasing urban heat from the loss of trees) should be prevented and/or managed to maintain our quality of life and the social and economic benefits our natural environment brings.

Actions
5.1 Investigate the use of riparian zone mapping in the Local Environmental Plan.
5.2 Review the land use tables for Environmental Zones in Newcastle Local Environmental Plan to ensure permitted and prohibited uses reflect the conservation intentions within the zone objectives.
5.3 Review Newcastle Development Control Plan provisions for stormwater to incorporate best practice stormwater systems and ensure the controls can be easily understood and applied.
5.4 Investigate development of a local biodiversity off-setting policy and a policy on the retention, transfer and ownership of lands of environmental value.

Principles
The blue and green grids are improved.

Alignment with State and CN Priorities
- Is consistent with Newcastle 2030 strategies
- 2.2a Provide and advocate for protection and rehabilitation of natural areas.
- Gives effect to the Greater Newcastle Metropolitan Plan 2036
- 12. Enhance the blue and green grid and urban tree canopy cover
- Supports implementation of the Sustainable Development Goals
- 14. Conserve and sustainably use the oceans, seas, marine resources for sustainable development.
- 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Related CN Plans and Strategies
- Newcastle Environmental Management Strategy
- Newcastle Biodiversity Strategy
- Throsby Creek Action Plan
Planning Priority 6

Reduce carbon emissions and resource consumption

Rationale

The NSW state government has set a priority to become net carbon neutral by 2050 and CN is leading the way by being the first local government organisation in NSW to switch to acquiring 100% renewal energy for its operational uses. Reducing carbon emissions and resource consumption has environmental, social and economic benefits. Our community will benefit socially and economically from new development that exceeds the current energy and water targets set by the NSW government through BASIX. This will also provide the longer term benefits to our global community by reducing our environmental footprint to sustainable levels.

Actions

6.1 Review the Newcastle Development Control Plan provisions for waste management with an emphasis on reduce, reuse and recycling.

6.2 Investigate provisions in the Newcastle Local Environmental Plan and Development Control Plan that facilitate greater efficiencies of energy and water use than current minimum standards in new development (including industrial uses).

6.3 Investigate ways to consider the reduction and/or offset of carbon emissions over the lifecycle of development and built assets.

Principles

- Improve efficiency of energy and water consumption.
- Carbon emissions are minimised or offset.

Alignment with State and CN Priorities

- Is consistent with Newcastle 2030 strategies

  2.1a Improve waste minimisation and recycling practices in homes, workplaces, development sites and public places.

  2.1b Investigate and implement renewable energy technologies

  2.1c Encourage energy and resource efficiency initiatives

- 5.4a Advocate for implementation of energy and resource efficiency in new developments

Gives effect to the Greater Newcastle Metropolitan Plan 2036

15. Plan for a carbon neutral Greater Newcastle by 2050

Supports implementation of the Sustainable Development Goals

- 7. Ensure access to affordable, reliable, sustainable and modern energy for all.


- 12. Ensure sustainable consumption and production patterns.

Related CN Plans and Strategies

- Newcastle Environmental Management Strategy
- Carbon and Water Management Action Plan
Plan for climate change and build resilience

Rationale
Changes in natural hazards including more frequent and severe weather events such as storms and flooding, heat waves and bushfires as a result of climate change are already being seen. Rising global temperatures will continue to impact on our climate and affect our environment, health and wellbeing. Planning for these changes will enable us to adapt, reduce the impacts and respond effectively to natural hazards.

Actions
7.1 Investigate the use of coastal hazard vulnerability mapping for inclusion in State Environmental Planning Policy (Coastal Management) 2018
7.2 Investigate the use of flood mapping in the Newcastle Local Environmental Plan and review the Development Control Plan flooding provisions.
7.3 Investigate opportunities to incorporate provisions in the Newcastle Local Environmental Plan and Development Control Plan to address urban heat island impacts.

Principles
Urban growth and change responds to environment and climate change risks and impacts.
Infrastructure asset planning incorporates emergency management principles.
Carbon emissions are minimised or offset.

Alignment with State and CN Priorities

| Is consistent with Newcastle 2030 strategies |
| 2.3a Ensure decisions and policy response to climate change remains current and reflects community needs |
| 2.3b Support individuals and communities to prepare, respond and recover from emergency events. |
| Gives effect to the Greater Newcastle Metropolitan Plan 2036 |
| 14. Improve resilience to natural hazards |
| Supports implementation of the Sustainable Development Goals |
| 11. Make cities and human settlements inclusive, safe, resilient and sustainable. |
| 13. Take urgent action to combat climate change and its impacts |

Related CN Plans and Strategies

Newcastle Environmental Management Strategy
Newcastle Coastal Zone Management Plan
Hunter Estuary Coastal Zone Management Plan
Flood Management Plans
Coastal Public Domain Plans, Merewether Beach, South Stockton and Bathers Way
Newcastle Local Emergency Management Plan
Carbon and Water Management Action Plan
Planning Priority 8

Plan for growth and change in Catalyst Areas, Strategic Centres and Urban Renewal Corridors

Rationale
A planned approach to growth and change will improve infrastructure and land use sequencing to capitalise on the opportunities for jobs and housing growth. This will also provide opportunities to improve connectivity and public transport across Greater Newcastle.

Alignment with State and CN Priorities

Is consistent with Newcastle 2030 strategies
5.2a Plan for concentrated growth around transport and activity nodes

6.1a Recognise and strengthen Newcastle’s role as a metropolitan capital and hub for education, health, tourism, creative, port and logistics industries.

6.2a Support and advocate for innovation in business, research activities, education and creative industries.

6.3c Work with businesses, planners and government at all levels to facilitate key infrastructure to support business growth.

6.3d Foster a collaborative approach to continue city centre renewal.

Gives effect to the Greater Newcastle Metropolitan Plan 2036
1. Reinforce the revitalisation of Newcastle city centre and expand transformation along the waterfront.

4. Grow health precincts and connect the health network.

5. Expand education and innovation clusters

7. Respond to the changing land use needs of the new economy.

9. Plan for jobs closer to homes in the metro frame

17. Unlock housing supply through infrastructure coordination and delivery.

Supports implementation of the Sustainable Development Goals
11. Make cities and human settlements inclusive, safe, resilient and sustainable.

Related CN Plans and Strategies

Draft Local Housing Strategy
Draft Employment Lands Strategy
Newcastle Affordable Living Plan
City Centre Public Domain Plan
Wickham Master Plan

Principles
Infrastructure suitability and consistency with our land use planning vision will need to be shown for proposals in Stage 2 Urban Renewal Corridors.

Proposals to rezone land holdings within a Catalyst Area will need to undertake holistic strategic planning of the whole Catalyst Area.

Commercial development is concentrated within the Newcastle City Centre, particularly the West End.

Actions
8.1 Work with the lead agencies of each Catalyst Area to align the Newcastle Local Environmental Plan and Development Control Plan with adopted Master Plans; and investigate changes needed to planning controls in the surrounding areas.

8.2 Review the planning controls for the Newcastle City Centre in Part 7 of the Newcastle Local Environmental Plan.

8.3 Review the Newcastle Development Control Plan provisions for each Urban Renewal Corridor.

8.4 Continue to implement the Wickham Master Plan.
Create inclusive streets and spaces in our neighbourhoods and local centres

Rationale

'A sense of community' is considered by many Novocastrians as a valued element of neighbourhood character and something that should be maintained and where possible enhanced. Inclusive spaces in our streets, neighbourhoods and local centres fosters opportunities for all community members to strengthen social connections. This in turn supports health and wellbeing.

Our local centres play an important role in meeting the day to day needs of local residents. CN has implemented a 'Local Centres Program' to guide infrastructure renewal and make local centres safe and accessible.

Our Employment Lands Strategy identified a need for greater flexibility of planning controls in local centres and small increases in land zoned to support retail uses, in order to cater for population growth and to meet changing consumer needs.

Actions

9.1 Prioritise the review of planning controls for each local centre, in conjunction with the Local Centres Program.

9.2 Review local centres to identify changes to planning controls needed to provide sufficient land to meet the retail needs of our growing population; and enable flexibility of uses to meet changing retail demand.

9.3 Continue to implement the Local Centres Program.

9.4 Work with stakeholders to identify spaces in their neighbourhood where people can gather, such as community gardens and seating.

Alignment with State and CN Priorities

Is consistent with Newcastle 2030 strategies

4.2a Ensure people of all abilities can enjoy our public places and spaces

5.4b Plan, provide and manage infrastructure that continues to meet community needs.

Gives effect to the Greater Newcastle Metropolitan Plan 2036

11. Create more great public spaces where people come together

Supports implementation of the Sustainable Development Goals

11. Make cities and human settlements inclusive, safe, resilient and sustainable.

Related CN Plans and Strategies

Social Strategy

Parkland and Recreation Strategy

Employment Lands Strategy

Disability Inclusion Access Plan

Local Centre Public Domain Plans

Principles

Streets are the primary public spaces for access and exchange between people, and should be safe, friendly, attractive and efficient.
Development responds to the desired local character of our communities

Rationale

Our existing planning controls enable a greater capacity of housing than currently needed to meet our future needs. However, in some neighbourhoods our controls are resulting in new development that is not compatible with the local character desired by our community.

The existing housing capacity together with the additional capacity that will be created within certain Catalyst Areas and Urban Renewal Corridors presents an opportunity to fine-tune our planning controls to facilitate a range of development types and sizes that better reflect the diverse character of different neighbourhoods and thereby enhance the lived experience of our community.

Actions

10.1 Work with stakeholders to commence local character assessments for Tighes Hill, Denison Street Hamilton and Kotara utilising the NSW Government’s Local Character and Place Guideline.

10.2 Investigate opportunities to better articulate the desired local character of different neighbourhoods within the Newcastle Local Environmental Plan and Development Control Plan.

10.3 Review the Newcastle Local Environmental Plan to consider the application of State Environmental Planning Policy 65 - Design Quality of Residential Apartment Development to boarding houses and serviced apartments.

Principles

Design contributes to achieving the envisaged character of neighbourhoods and local centres.

Alignment with State and CN Priorities

Is consistent with Newcastle 2030 strategies

5.2a Plan for concentrated growth around transport and activity nodes

5.1b Ensure our suburbs are preserved, enhanced and promoted, while also creating opportunities for growth.

Gives effect to the Greater Newcastle Metropolitan Plan 2036

10. Create better buildings and great places.

18. Deliver well-planned rural-residential housing areas

Supports implementation of the Sustainable Development Goals

11. Make cities and human settlements inclusive, safe, resilient and sustainable.

Related CN Plans and Strategies

Heritage Strategy

Draft Local Housing Strategy

Public Domain Plans
Planning Priority 11

Protect and celebrate our heritage

Rationale

The Awabakal and Worimi peoples are acknowledged as the traditional custodians of the land and waters of Newcastle, and their cultural heritage continues to enrich and inform our community and environment.

Newcastle was first established as a penal settlement in 1804 and significant heritage sites associated with the convict period survive. The city is largely defined by its rich industrial history showcased through its iconic architecture such as the civic buildings, warehouses, railway workshops, tram sheds and historic homes which are highly valued by our Community.

Actions

11.1 Complete the review of the Newcastle Heritage Strategy
11.2 Work with the Awabakal and Worimi Local Aboriginal Land Councils to identify constraints and opportunities for land holdings identified in their Community Land and Business Plans.
11.3 Ensure development provisions are flexible to support the adaptive reuse of heritage items where it achieves ongoing preservation and use.

Principles

The City’s identity is maintained by protecting and enhancing heritage buildings, streetscapes, views and key features.

CN’s land use decisions will reflect our commitments included in our Heritage Policy to:

– Know our heritage
– Protect our heritage
– Support our heritage
– Promote our heritage

Alignment with State and CN Priorities

Is consistent with Newcastle 2030 strategies
4.1a Acknowledge and respect First Nations peoples

5.1a Protect and promote our unique built and cultural heritage

Gives effect to the Greater Newcastle Metropolitan Plan 2036
11. Create more great public spaces where people come together

Supports implementation of the Sustainable Development Goals
11. Make cities and human settlements inclusive, safe, resilient and sustainable.

Related CN Plans and Strategies

Heritage Strategy
Aboriginal Heritage Management Strategy
Newcastle Archaeological Management Strategy
Draft Local Housing Strategy
Sustainable, accessible and inclusive housing

Rationale
Access to secure, appropriate and affordable housing is not only a basic requirement for all people, it is an essential component of an inclusive, dynamic and sustainable city.

Although we have enough residential land to provide housing to meet our population growth, the types of housing being built are not meeting the needs of our whole community.

We have considerable supply gaps in social and affordable housing to suit a range of very low, low, and moderate income households. We also need more housing for people with specific needs, including students, the elderly and people with a disability.

Actions
12.1 Finalise the Local Housing Strategy and commence implementation of priority actions.
12.2 Implement the short-term actions identified in the Newcastle Affordable Living Plan.

Principles
The Housing at appropriate densities will be located to support effective and integrated public transport.

A culturally rich and vibrant community will be encouraged by providing a greater diversity of quality housing within each neighbourhood for current and future community needs.

The ‘lived experience’ of residents will be improved by enhancing the quality and liveability of housing as it relates to health, overall cost of living and local character.

In the Urban Renewal Corridors (including Stage 2 future investigation corridors), Catalyst Areas, and Strategic Centres, proposals will incorporate affordable housing, adaptable housing and mechanisms to achieve excellence in sustainable building design.

Alignment with State and CN Priorities

| Is consistent with Newcastle 2030 strategies |
| 2.1c Encourage energy and resource efficiency initiatives |
| 5.2a Plan for concentrated growth around transport and activity nodes. |
| 5.3a Ensure sufficient housing diversity to meet community needs, including affordable living and adaptable housing options. |
| 5.4a Advocate for implementation of energy and resource efficiency in new developments. |

Gives effect to the Greater Newcastle Metropolitan Plan 2036

| 8. Plan for growth and change in Catalyst Areas and Urban Renewal Corridors |
| 15. Plan for a Carbon Neutral Greater Newcastle by 2050 |
| 16. Prioritise the delivery of infill housing opportunities within existing urban areas. |
| 19. Prepare local strategies to deliver housing |

Supports implementation of the Sustainable Development Goals

| 11. Make cities and human settlements inclusive, safe, resilient and sustainable. |

Related CN Plans and Strategies

- Draft Local Housing Strategy
- Newcastle Affordable Living Plan
Planning Priority 13

Grow our key health and education sectors

Rationale

Health care and social assistance is the largest industry sector in Newcastle supporting over 20,000 jobs followed by education and training which supports almost 10,000 jobs. These sectors will continue to grow and provide jobs for our community.

Actions

13.1 Work with John Hunter Hospital and the University of Newcastle to align the Newcastle Local Environmental Plan and Development Control Plan with the adopted Master Plans; and investigate changes needed to planning controls in the surrounding areas.

13.2 Work with other health and education providers to align the Newcastle Local Environmental Plan and Development Control Plan with future growth plans.

Principles

Infrastructure and planning provisions enable the expansion and intensification of uses that provide or support key health and education sectors.

Alignment with State and CN Priorities

Is consistent with Newcastle 2030 strategies

5.2a Plan for concentrated growth around transport and activity nodes.

6.1a Recognise and strengthen Newcastle’s role as a metropolitan capital and hub for education, health, tourism, creative, port and logistics industries

6.1b Attract new businesses and employment opportunities.

Gives effect to the Greater Newcastle Metropolitan Plan 2036

1. Reinforce the revitalisation of Newcastle City Centre

4. Grow health precincts and connect the health network

5. Expand education and innovation clusters

Supports implementation of the Sustainable Development Goals

8. Promote sustained, inclusive sustainable economic growth, full and productive employment and decent work for all.

10. Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

Related CN Plans and Strategies

Employment Lands Strategy

Economic Development Strategy

Smart City Strategy
Enable the transition to new economy jobs and grow creative industries

Rationale
While it is recognised that traditional manufacturing industries and jobs are in decline, industrial zoned land is needed to cater for new non-commercial employment opportunities that arise in the future.

Our Employment Lands Strategy identifies that we have enough land zoned for industrial uses and we need to protect and retain these lands to support new economy jobs and grow creative industries.

Our review of land use supply also found that we have an adequate supply of land available to meet our future housing needs. Hence, there is no need for housing in areas not otherwise identified for this purpose within the Greater Newcastle Metropolitan Plan 2036.

Actions
14.1 Implement the actions identified in the Employment Lands Strategy and the Smart City Strategy.
14.2 Review the residential zone land use tables and Clause 5.4 controls to enable more home businesses and industries.
14.3 Review the land use tables in the industrial zones to ensure these allow for uses within the new economy, creative industries and artisan manufacturing.

Principles
Retain and protect land zoned for industrial uses for economic and employment generating uses.

Commercial development is concentrated in the Newcastle City Centre.

Alignment with State and CN Priorities

<table>
<thead>
<tr>
<th>Is consistent with Newcastle 2030 strategies</th>
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<tbody>
<tr>
<td>6.1a Recognise and strengthen Newcastle’s role as a metropolitan capital and hub for education, health, tourism, creative, port and logistics industries.</td>
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<tr>
<td>6.1b Attract new businesses and employment opportunities.</td>
</tr>
<tr>
<td>6.2a Support and advocate for innovation in business, research activities, education and creative industries.</td>
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<tr>
<td>6.2b Support and advocate for the small business sector.</td>
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<tr>
<th>Gives effect to the Greater Newcastle Metropolitan Plan 2036</th>
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<tr>
<td>7. Respond to the changing land use needs of the new economy.</td>
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<tr>
<th>Supports implementation of the Sustainable Development Goals</th>
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<tbody>
<tr>
<td>8. Promote sustained, inclusive sustainable economic growth, full and productive employment and decent work for all.</td>
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<tr>
<td>10. Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.</td>
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<tr>
<td>12. Ensure sustainable consumption and production patterns.</td>
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</tbody>
</table>

Related CN Plans and Strategies
- Employment Lands Strategy
- Economic Development Strategy
- Smart City Strategy
Planning Priority 15

Plan for the expansion and diversification of Newcastle Port

Rationale

The Port of Newcastle is Australia’s largest coal export port by volume and a growing multi-purpose cargo hub. The port precinct hosts a range of ship repair and other port related services in an area of over 700 hectares.

Industrial land around the Port needs to be retained and protected to enable growth and diversification of the Port, increasing job opportunities and minimising environmental and amenity impacts to surrounding land uses.

Actions

15.1 Work with operators of the Newcastle Port to align the Newcastle Local Environmental Plan and Development Control Plan with the adopted Master Plan; and investigate changes needed to planning controls in the surrounding areas.

Principles

Land within the boundaries of State Environmental Planning Policy (Three Ports) is retained for Port related uses.

Land uses adjoining the Port of Newcastle do not compromise the viability of current and future port operations.

Alignment with State and CN Priorities

Is consistent with Newcastle 2030 strategies

1.3a Ensure safe road networks through effective planning and maintenance.

6.1a Recognise and strengthen Newcastle’s role as a metropolitan capital and hub for education, health, tourism, creative, port and logistics industries.

6.3c Work with businesses, planners and government at all levels to facilitate key infrastructure to support business growth.

Gives effect to the Greater Newcastle Metropolitan Plan 2036

7. Respond to the changing land use needs of the new economies

Supports implementation of the Sustainable Development Goals

10. Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

Related CN Plans and Strategies

- Employment Lands Strategy
- Economic Development Strategy
- Smart City Strategy
Planning Priority 16

Grow our tourism and night-time economies

Rationale
A diverse night-time economy is a key component of a successful global city, has a central role to play in city centre revitalisation and exerts a major influence over the visitor and cultural economies of our city and the region.

Tourism is also an important contributor to our local economy. It is estimated that 5145 jobs in Newcastle are supported by tourism and it generates an output of $974.823 million.

Actions
16.1 Review the Local Environmental Plan to ensure tourism related land uses nominated in the land use table in all zones are consistent with the zone objectives.
16.2 Investigate opportunities within the Newcastle Local Environmental Plan and Development Control Plan to better reduce land use conflict and support live music and performance in key locations.
16.3 Implement the actions identified in the Newcastle After Dark Night-Time Economy Strategy and the Destination Management Plan.

Principles
Different types of tourism, accommodation and transport needs are considered in areas undergoing transformation.

The viability of night-time economy businesses are considered in the strategic planning of mixed use precincts to minimise land use conflict.

Alignment with State and CN Priorities

| Is consistent with Newcastle 2030 strategies |
| 3.1c Support and deliver cultural and community programs, events and live music. |
| 3.3b Plan for a night-time economy characterised by creativity, vibrancy and safety that contributes to cultural and economic revitalisation. |
| 6.1a Recognise and strengthen Newcastle’s role as a metropolitan capital and hub for education, health, tourism, creative, port and logistics industries. |
| 6.3a Facilitate events that attract visitors and support the local economy and vibrancy of Newcastle. |
| 6.3b Work with the tourism sector to further develop Newcastle as a visitor and event destination. |

Gives effect to the Greater Newcastle Metropolitan Plan 2036

8. Promote tourism, major events and sporting teams on the national and international stage.

Supports implementation of the Sustainable Development Goals

11. Make cities and human settlements inclusive, safe, resilient and sustainable.
12. Ensure sustainable consumption and production patterns.

Related CN Plans and Strategies

| Cultural Strategy |
| Newcastle After Dark Night-Time Economy Strategy |
| Live Music Strategy |
| Destination Management Plan |
| Event Plan |
| Safe City Plan |
| Disability Inclusion Action Plan |
Implementation, Monitoring and Reporting

Although this LSPS is legally required to be reviewed at least every 7 years, CN intends to review it together with the Community Strategic Plan every four years. Monitoring and reporting of these actions will be through the Integrated Planning and Reporting Framework.

<table>
<thead>
<tr>
<th>An efficient and connected transport system</th>
<th>Potential Measures / Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning Priority 1: Prioritise active transport in our City</td>
<td>1.1 Working with key stakeholders identify targets for the construction of new separated cycleways and pedestrian paths each year.</td>
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<tr>
<td></td>
<td>1.2 Review and update the Newcastle Cycling Strategy and Action Plan and implement actions.</td>
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<td></td>
<td>1.3 Review Newcastle Development Control Plan provisions for movement networks and parking (car, motorbike, loading vehicles, bicycles), and end of trip facilities with a focus on Catalyst Areas, Strategic Centres and Urban Renewal Corridors.</td>
</tr>
</tbody>
</table>

Planning Priority 2: Support emerging transport opportunities and public transport improvements with continued integration of land use and transport planning

| 2.1 Collaborate with relevant State Agencies in identifying opportunities for improved connections both to and between Catalyst Areas and Strategic Centres. |
| 2.2 Review and update the Newcastle Transport Strategy and implement short term actions. |
| 2.3 Review the Newcastle Local Environmental Plan and Development Control Plan to support active transport, reduce reliance on private vehicles and promote more efficient parking management through initiatives such as decoupling of parking and the promotion of car share schemes. |

Planning Priority 3: Enable freight movement and protect residential amenity

| 3.1 Identify and protect potential strategic road and rail freight corridors from inappropriate or sensitive land uses. |
| 3.2 Review land use controls in the Industrial Drive – Maitland Road corridor for compatibility with its use as a freight corridor. |

% trips to work by private car reduced
Increase in bicycle ownership / membership of Bykko
Km pedestrian paths constructed
Km separated cycleways constructed
<table>
<thead>
<tr>
<th>Planning Priority 4:</th>
<th>Potential Measures / Indicators</th>
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<tbody>
<tr>
<td>Green our neighbourhoods</td>
<td>4.1 Complete the review of the Newcastle</td>
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<td></td>
<td>Environmental Management Strategy 2013 and</td>
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<td>implement priority actions.</td>
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<td>4.2 Review Newcastle Development Control</td>
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<td>Plan provisions for landscaped area and</td>
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<td>vegetation management including opportunities</td>
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<td>to use green roofs and walls.</td>
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<td>4.3 Investigate additional public green</td>
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<td>spaces in the strategic planning of</td>
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<td>mixed-use Catalyst Areas, Strategic</td>
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<td></td>
<td>Centres and Urban Renewal Corridors.</td>
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<td>4.4 Investigate opportunities to reduce</td>
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<td>hard surfaces and increase gardens in local</td>
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<td>centres and in our residential streets.</td>
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<td>4.5 Review the Urban Forest Policy</td>
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<td>and implement priority actions.</td>
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<td>Planning Priority 5:</td>
<td>5.1 Investigate the use of riparian zone</td>
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<tr>
<td>Protect and enhance our bushland, waterways</td>
<td>mapping in the Local Environmental Plan.</td>
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<td>and wetlands</td>
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<td>5.2 Review the land use tables for</td>
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<td>Environmental Zones in Newcastle Local</td>
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<td>Environmental Plan to ensure permitted and</td>
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<td>prohibited uses reflect the conservation</td>
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<td>intentions within the zone objectives.</td>
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<td>5.3 Review Newcastle Development Control</td>
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<td>Plan provisions for stormwater to incorporate</td>
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<td>best practice stormwater systems and ensure</td>
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<td>the controls can be easily understood and</td>
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<td>applied.</td>
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<td>5.4 Investigate development of a local</td>
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<td>biodiversity off-setting policy and a policy</td>
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<td>on the retention, transfer and ownership of</td>
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<td>lands of environmental value.</td>
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<tr>
<td>Planning Priority 6:</td>
<td>6.1 Review the Newcastle Development Control</td>
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<tr>
<td>Reduce carbon emissions and resource</td>
<td>Plan provisions for waste management with</td>
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<tr>
<td>consumption</td>
<td>an emphasis on reduce, reuse and recycling.</td>
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<td>6.2 Investigate provisions in the Newcastle</td>
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<td>Local Environmental Plan and Development</td>
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<td>Control Plan that facilitate greater</td>
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<td>efficiencies of energy and water use than</td>
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<td>current minimum standards in new development</td>
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<td>(including industrial uses).</td>
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<td>6.3 Investigate ways to consider the</td>
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<td>reduction and/or offset of carbon</td>
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<td>emissions over the lifecycle of development</td>
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<td>and built assets.</td>
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<tr>
<td>Planning Priority 7:</td>
<td>7.1 Investigate the use of coastal hazard</td>
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<tr>
<td>Plan for climate change and build resilience</td>
<td>vulnerability mapping for inclusion in State</td>
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<tr>
<td></td>
<td>Environmental Planning Policy (Coastal</td>
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<td>Management) 2018</td>
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<td>7.2 Investigate the use of flood mapping in</td>
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<td>the Newcastle Local Environmental Plan and</td>
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<td>review the Development Control Plan</td>
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<td>flooding provisions.</td>
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<td>7.3 Investigate opportunities to incorporate</td>
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<td>provisions in the Newcastle Local</td>
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<td>Environmental Plan and Development Control</td>
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<td>Plan to address urban heat island impacts.</td>
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<tr>
<td>Planning Priority 8: Plan for growth and change in Catalyst Areas, Strategic Centres and Urban Renewal Corridors</td>
<td>Potential Measures / Indicators</td>
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<td>8.1 Work with the lead agencies of each Catalyst Area to align the Newcastle Local Environmental Plan and Development Control Plan with adopted Master Plans; and investigate changes needed to planning controls in the surrounding areas.</td>
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<td>8.2 Review the planning controls for the Newcastle City Centre in Part 7 of the Newcastle Local Environmental Plan.</td>
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<td>8.3 Review the Newcastle Development Control Plan provisions for each Urban Renewal Corridor.</td>
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<tr>
<td>8.4 Continue to implement the Wickham Master Plan.</td>
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<tr>
<th>Planning Priority 9: Create inclusive streets and spaces in our neighbourhoods and local centres</th>
<th>Potential Measures / Indicators</th>
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<tr>
<td>9.1 Prioritise the review of planning controls for each local centre, in conjunction with the Local Centres Program.</td>
<td>$ worth of development approved in these locations</td>
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<tr>
<td>9.2 Review local centres to identify changes to planning controls needed to provide sufficient land to meet the retail needs of our growing population; and enable flexibility of uses to meet changing retail demand.</td>
<td>% of affordable housing units</td>
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<td>9.3 Continue to implement the Local Centres Program.</td>
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<td>9.4 Work with stakeholders to identify spaces in their neighbourhood where people can gather, such as community gardens and seating.</td>
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<tr>
<th>Planning Priority 10: Development responds to the desired local character of our communities</th>
<th>Potential Measures / Indicators</th>
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<tr>
<td>10.1 Work with stakeholders to commence local character assessments for Tighes Hill, Denison Street Hamilton and Kotara utilising the NSW Government’s Local Character and Place Guideline.</td>
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<tr>
<td>10.2 Investigate opportunities to better articulate the desired local character of different neighbourhoods within the Newcastle Local Environmental Plan and Development Control Plan.</td>
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<tr>
<td>10.3 Review the Newcastle Local Environmental Plan to consider the application of State Environmental Planning Policy 65 - Design Quality of Residential Apartment Development to boarding houses and serviced apartments.</td>
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<th>Planning Priority 11: Protect and celebrate our heritage</th>
<th>Potential Measures / Indicators</th>
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<tr>
<td>11.1 Complete the review of the Newcastle Heritage Strategy.</td>
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<td>11.2 Work with the Awabakal and Worimi Local Aboriginal Land Councils to identify constraints and opportunities for land holdings identified in their Community Land and Business Plans.</td>
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<td>11.3 Ensure development provisions are flexible to support the adaptive reuse of heritage items where it achieves ongoing preservation and use.</td>
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<th>Planning Priority 12: Sustainable, accessible and inclusive housing</th>
<th>Potential Measures / Indicators</th>
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<tr>
<td>12.1 Finalise the Local Housing Strategy and commence implementation of priority actions.</td>
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<tr>
<td>12.2 Implement the short-term actions identified in the Newcastle Affordable Living Plan.</td>
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<tr>
<td>Planning Priority 13:</td>
<td>Potential Measures / Indicators</td>
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| **Support our key health and education sectors to grow** | 13.1 Work with John Hunter Hospital and the University of Newcastle to align the Newcastle Local Environmental Plan and Development Control Plan with the adopted Master Plans; and investigate changes needed to planning controls in the surrounding areas.  
13.2 Work with other health and education providers to align the Newcastle Local Environmental Plan and Development Control Plan with future growth plans. |

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<tr>
<th>Planning Priority 14:</th>
<th>Potential Measures / Indicators</th>
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| **Enable the transition to new economy jobs and grow creative industries** | 14.1 Implement the actions identified in the Employment Lands Strategy and the Smart City Strategy.  
14.2 Review the residential zone land use tables and Clause 5.4 controls to enable more home businesses and industries.  
14.3 Review the land use tables in the industrial zones to ensure these allow for uses within the new economy, creative industries and artisan manufacturing. |

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<tr>
<th>Planning Priority 15:</th>
<th>Potential Measures / Indicators</th>
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<tbody>
<tr>
<td><strong>Plan for the expansion and diversification of Newcastle Port</strong></td>
<td>15.1 Work with operators of the Newcastle Port to align the Newcastle Local Environmental Plan and Development Control Plan with the adopted Master Plan; and investigate changes needed to planning controls in the surrounding areas.</td>
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<th>Planning Priority 16:</th>
<th>Potential Measures / Indicators</th>
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| **Grow our tourism and night-time economies** | 16.1 Review the Local Environmental Plan to ensure tourism related land uses nominated in the land use table in all zones are consistent with the zone objectives.  
16.2 Investigate opportunities within the Newcastle Local Environmental Plan and Development Control Plan to better reduce land use conflict and support live music and performance in key locations.  
16.3 Implement the actions identified in the Newcastle After Dark Night-Time Economy Strategy and the Destination Management Plan. |
ENDORSEMENT OF DRAFT LOCAL STRATEGIC PLANNING STATEMENT FOR EXHIBITION

Item 97 - Attachment B: Housing Needs and Character Study Evidence Report
Newcastle Housing Needs and Local Character Evidence Report

Prepared by City Plan Strategy & Development P/L on behalf of the City of Newcastle

OCTOBER 2019
REPORT REVISION HISTORY

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<tr>
<th>Revision</th>
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<tr>
<td>01</td>
<td>4/10/19</td>
<td>Draft for client review</td>
<td>Jessica Veenhuyzen</td>
<td>Amanda Wetzel</td>
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<td>Robert Bisley</td>
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<td>02</td>
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<td>Exhibition Draft</td>
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<td>Amanda Wetzel</td>
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<td>Final Report (re-issued)</td>
<td>Robert Bisley</td>
<td>Executive Director</td>
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Disclaimer
This report has been prepared by City Plan Strategy & Development P/L with input from a number of other expert consultants (if relevant). To the best of our knowledge, the information contained herein is neither false nor misleading and the contents are based on information and facts that were correct at the time of writing. City Plan Strategy & Development P/L accepts no responsibility or liability for any errors, omissions or resultant consequences including any loss or damage arising from reliance on information in this publication.

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1. INTRODUCTION AND BACKGROUND

1.1. Background

CPSD was engaged by the City of Newcastle (Council) to complete a Housing Needs and Local Character Study (the Study). This Report is a culmination of the Study.

Council last completed a comprehensive review of the local housing market and future housing needs over five years ago when preparing the Newcastle Local Planning Strategy (LPS), which was adopted in 2014. Since this time, many of Newcastle’s residential areas have experienced growth and change resulting in a need to identify and address ongoing and emerging housing issues.

Additionally, the NSW Government has adopted a more strategic-led approach to planning across NSW and has introduced a suite of strategic changes over the last five years. These changes include:

- a new regional strategy for the Hunter (Hunter Regional Plan 2036);
- the first-ever metropolitan wide strategy for Greater Newcastle (Greater Newcastle Metropolitan Plan 2036);
- the requirement for Council to develop a Local Strategic Planning Statement for the Local Government Area (LGA) which sets out a 20-year land use vision to guide growth and change locally;
- the requirement for Council to develop a Local Housing Strategy to set a clear plan for housing in the area over the next 10 to 20 years; and
- the introduction of a local character framework which will require Council to elevate the consideration of local character in future strategic planning and decision making.

1.2. Purpose

The purpose of the Study was to establish a detailed understanding of Newcastle’s local housing market including current and projected demographics, housing market supply and demand, and relevant opportunities and constraints. The Study was also to provide recommendations to achieve more affordable and diverse housing forms, complimentary to local character and heritage significance.

The outcomes of the Study, as outlined in the brief, were to provide Council with a comprehensive understanding of the opportunities and constraints for:

- the provision of housing that complements the desired local character within the different growth corridors and catalyst areas identified in the Greater Newcastle Metropolitan Plan and each residential growth precinct identified in the Newcastle Local Planning Strategy;
- achieving a broader mix of housing types across the City to meet the needs of the whole community, inclusive of all age groups, abilities and income brackets; and
- land use planning strategies to support housing growth and diversity whilst complementing desired local character and heritage.

The Study provides an evidence base to inform and guide the direction of subsequent planning for housing, including the preparation of Newcastle’s Local Strategic Planning Statement and Local Housing Strategy.
1.4. Approach

The Study established a more comprehensive evidence base to assist with formulation of strategies and plans for housing across the Newcastle LGA over the next 10 to 20 years.

1.4.1. Background research, review and investigations

The Study was underpinned by research that considered current and projected demographic changes, the local housing market, and the planning policy framework for housing.

Review of strategic planning framework: A review of current State and local strategic planning documents applying to the LGA (e.g. plans, strategies and studies) to analyse the implications to planning for housing, and to understand the intent and effectiveness of current planning controls within this context.

Demographic review: Background research and analysis of demographic data provided by the Australian Bureau of Statistics (ABS), .id the population experts (.id), the Department of Family and Community Services (FACS) and the Department of Planning, Industry and Environment (DPIE) to gain a detailed understanding of current and projected demographic trends influencing housing need.

Research/ best practice review: A review of reference documents and studies prepared by key research institutions, such as the Australian Housing and Urban Research Institute (AHURI) and the Grattan Institute, as well as those prepared by specialty housing providers such as Evolve and Compass Housing. This was to understand the latest research into housing needs.

Establishing ‘pipeline’ housing supply: Detailed identification of recent and pipeline residential development activity in Newcastle to understand where, when and how many new homes are likely to be built. This reflects a review of all residential Development Applications (DA) and Complying Development Certificates (CDCs) through Council’s DA Tracker and DPIEs Development and Planning Register.

Local character assessment: An investigation of selected ‘local character precincts’ that had been identified as having special local character in earlier strategic studies. This involved developing an assessment framework through which to guide a high-level desktop analysis of remaining character attributes within each local character precinct. The purpose of the investigation was to see if these precincts still retained elements that contribute to special local character and to identify priority areas for more detailed studies of local character.

Spatial analysis: A review of demographic and housing market trends, housing supply and opportunities and constraints across the LGA and at suburb level, where relevant.

1.4.2. Consultation

Selected stakeholders and community representatives were engaged as part of the Study to further explore key housing issues, opportunities and constraints, as well as to better understand current and future housing needs. This involved:

- One meeting with DPIE to confirm the Study’s aims and objectives;
- phone meetings with community housing providers (Evolve and Compass Housing) to discuss social and affordable housing;
- phone meetings and various emails with University of Newcastle staff to discuss student housing and other housing models such as cooperative housing;
- phone meetings with residential developers (Doma and GWH) to discuss key housing issues, opportunities and constraints in both the City Centre and Newcastle’s middle and outer suburbs;
- two community focus groups, facilitated by Mara consulting, with:
  - over 55s residents (3 September 2019) to discuss the housing issues and needs experienced by this age cohort. The focus group was facilitated by MARA Consulting; and
  - tertiary students attending the University of Newcastle (4 September 2019) to discuss the housing issues and needs experienced by this cohort. This focus group was facilitated by MARA Consulting; and
regular discussions with Council’s strategic planning staff to gain feedback on initial findings and Report structure.

These discussions provided invaluable insights to develop the evidence base presented in this Report.

1.5. Structure of this Report

This report is structured as follows:

Section 3: Planning and Policy Framework – reviews the range of State and local plans, strategies and studies relevant to planning and plan-making for housing. It identifies the recurring strategic focus areas to be investigated and addressed throughout the remainder of the Report.

Section 4: Our Community Snapshot – provides a brief snapshot of the key demographic factors that make up the Newcastle community.

Section 5: Newcastle’s Population Trends – provides detailed analysis of current and projected population and demographic factors driving growth and demand for new housing in Newcastle.

Section 6: Newcastle’s Housing Demand – provides insight into the likely demand for new housing across Newcastle including an analysis of the types of housing that people prefer and can afford to buy or rent.

Section 7: Newcastle’s Housing Supply – provides analysis of what housing is currently available, and what is in the pipeline to be built within the LGA. This section also looks at the capacity and feasibility of new housing supply being delivered within the LGA over the next 20 years, based on Newcastle’s current planning controls.

Section 8: Housing for Specific Needs - discusses cohorts that are considered most likely to experience barriers to accessing housing that meets their needs, based on existing evidence.

Section 9: Integrated Planning Considerations- provides an overview of the key land use opportunities and constrains that affect where housing can, and should, be built across the LGA.

Section 10: Local Character - discusses the key local character issues identified by Council and analyses how local character has currently been planned for to date. It also provides a high level assessment of Newcastle’s local character areas and assesses planning mechanisms to address local character issues.

Section 11: Planning for Housing Newcastle - highlights the key issues emerging from evidence presented above and provides focused recommendations for future planning and plan-making for housing in the Newcastle LGA.

This Report should be read in conjunction with its Appendices, provided separately, which presents the Study’s place-based analysis of new housing supply, and key issues, opportunities and constraints for each broad area. The areas considered include:

- Stage 1 Urban Renewal Corridors identified in Council’s current planning framework;
- Catalyst areas identified in the Greater Newcastle Metropolitan Plan (GNMP);
- Stage 2 Urban Renewal Corridors identified in the GNMP;
- residential areas for infill development; and
- greenfield areas for residential development.
1.7. Technical Notes

The evidence base presented in this Report relied on population, demographic and residential development data produced by .id the population experts, based on ABS data. Additional data from reputable government sources has also been used in a supplementary capacity and is cited, where relevant.

Long-term planning and plan making relies on a consistent evidence base to monitor past trends and progress over time, and to provide a basis for modelling future change scenarios. Council consistently relies on .id data when developing strategic plans such as the Community Strategic Plan, Local Strategic Planning Statement and Local Planning Strategy. Drawing on this data to form the evidence base presented in this Report ensures that consistent data assumptions are used across the suite of Council’s strategies and plans.

Key data assumptions and limitations are provided below.

- .id’s population, demographic and residential development data was last updated in mid-2018.
- The 30 ‘community profile areas’ utilised in the Study to disaggregate data and analysis to smaller areas, were established by .id and Council. These areas cover the whole of the Newcastle LGA and broadly align with established suburb boundaries, which rarely change, providing a long-term consistent basis for tracking population and dwelling data collected through the census. These boundaries are consistently used by Council and others for demographic analysis and forecasting.
- This Report considers housing needs from 2016 to 2041 to reflect the data produced by .id and at the request of Council.

Definitions for common terms referred to throughout this Report are provided below. Additional terms are also provided elsewhere in this Report for clarification, where relevant.

- **Detached dwelling** includes all free-standing dwellings separated from neighbouring dwellings by a gap of at least half a metre;
- **Attached (2 Storeys) dwellings** includes all semi-detached, row, terrace, townhouses and villa units, plus flats and apartments in blocks of 1 or 2 storeys, and flats attached to houses.
- **Attached (3+ Storeys) dwellings** includes flats and apartments in 3 storey and larger blocks.
- **Housing need** is the theoretical number of new homes required based on the projected number of households, without taking into account the household’s ability to pay for housing, or the type and location of housing preferred. Housing need can also be referred to as underlying housing demand or implied dwelling demand.
- **Housing demand** is the number of new homes expected to be required taking into account the household’s ability to pay for housing and the size, type and location of housing preferred. Housing demand can also be referred to as effective demand.
- **Housing supply** is the total supply of housing within a particular area. There are two sub-terms commonly used when discussing housing supply:
  - **Current housing supply** is the number of dwellings that are already built and available within an area. Housing supply can also be referred to as housing stock; and
  - **Planned housing supply** is new housing that is in the ‘pipeline’ to be built. It includes new dwellings under construction, new dwelling approved, and new dwellings under assessment. Planned housing is commonly referred to as ‘pipeline’ housing supply.
2. PLANNING AND POLICY FRAMEWORK

The Study included a review of the current planning and policy framework applying to the City of Newcastle to consider the implications of long-term stated goals on planning for housing needs and local character, and to evaluate the effectiveness of current controls within that context.

Long-term goals relevant to planning for housing needs and local character within the Newcastle LGA are set out at State and Local Government levels. Key documents included (but were not limited to):

- Hunter Regional Plan 2036;
- Greater Newcastle Metropolitan Plan 2036;
- Greater Newcastle Future Transport Plan 2056;
- Newcastle 2030 Community Strategic Plan;
- Newcastle Affordable Living Plan;
- Newcastle Heritage Strategy 2013-2017; and
- Newcastle Local Planning Strategy.

Three key recurring themes emerged from these documents as strategic focus areas important to planning for housing needs in the Newcastle LGA:

- The housing stock should be diverse, and reflective of the community’s needs. This means that the types of housing delivered should meet the diverse needs of the community, including being affordable and accessible.
- Housing density should be concentrated around public transport and activity nodes. This means that the majority of new housing should be planned within and around existing centres that provide good public transport access, are walkable, and offer a range of services.
- New housing should complement local character. This means that housing should be well designed within the context of its surrounds and be of an appropriate mass and height.

A series of State-level guidelines have also recently been released to assist with identifying methods and evidence for planning. These included (but were not limited to):

- Local Housing Strategy Guideline and Template;
- Local Character and Place Guideline; and
- Newcastle City Wide Urban Design Guidelines.

These documents were utilised to collate and review the evidence base for the Study. Where relevant, these also shaped methodologies used to analyse or supplement evidence as part of the Study.

The review considered several planning instruments and other guidelines that are relevant to evaluating the effectiveness of current controls. These included:

- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, including the associated Low Rise Medium Density Design Guides for Complying Development and Development Applications
- State Environmental Planning Policy No 70 – Affordable Housing (SEPP 70)
- State Environmental Planning Policy (Affordable Rental Housing) 2009
- State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004
- Newcastle Local Environmental Plan 2012
- Newcastle Development Control Plan 2012
2.1. Long-term goals for planning

2.1.1. Hunter Regional Plan 2036 (DPIE, 2016)

Ministerial Direction 5.10, made under Section 9.1(2) of the Environmental Planning and Assessment Act 1979 (EP&A Act), requires Council to implement the Hunter Regional Plan 2036. This document sets out a high-level, 20-year vision to guide housing, employment and infrastructure growth across the Hunter to 2036.

A major priority of the Hunter Regional Plan 2036 is to facilitate the delivery of greater housing choice. It aims to deliver 70,000 new dwellings across the Hunter over 20 years, or around 3,500 new dwellings each year.

Increasing housing supply and the diversity of housing available will be achieved through the following directions:

- Direction 3: Revitalise Newcastle City Centre
- Direction 21: Create a compact settlement
- Direction 22: Promote housing diversity
- Direction 23: Grow Centres and Renewal Corridors
- Direction 25: Monitor housing and employment supply and demand
- Direction 26: Deliver Infrastructure to support growth and communities

Key insights relevant to planning for housing in the City of Newcastle emerging from the Hunter Regional Plan 2036 are:

- Council must, at minimum, align planning controls to accommodate the dwellings projections stated in the Plan for the Newcastle LGA, which are 16,800 new dwellings by 2036, or around 840 new dwellings annually.
- Council’s local housing strategy should facilitate infill housing supply, which will rely on small-scale renewal and redevelopment of larger sites. Residential densification should be encouraged in locations with established services and infrastructure.
  - The Plan specifically nominates Newcastle’s City Centre, and the five established urban renewal corridors – Hamilton, Broadmeadow, Adamstown, Islington and Mayfield – as the main locations where planning efforts should be focused in the near term.
  - The Plan also supports planning investigations for new housing opportunities in and around centres at The Junction, Georgetown/Waratah, Adamstown, Lambton, New Lambton and Kotara.
  - Additional renewal corridors to support longer term growth should be investigated along the Newcastle-The Junction-Merewether corridor, the Broadmeadow-New Lambton-Lambton corridor and in Adamstown and Kotara.
- Densities within renewal corridors should be to a level that aligns with cost-effective public transport network improvements.
- Urban release areas identified within the Newcastle-Lake Macquarie Western Corridor are expected to remain the primary location for residential growth through greenfield development.
- Council’s local housing strategy should respond to specific housing needs for social and affordable housing, student accommodation, and visitor accommodation.
- New housing development should respect the current or intended future character and landscape attributes within each area.
2.1.2. Greater Newcastle Metropolitan Plan 2036 (DPIE, 2018)

Ministerial Direction 5.10, made under Section 9.1(2) of the EP&A Act, requires Council to implement the Greater Newcastle Metropolitan Plan 2036 (GNMP). This document outlines a metropolitan wide approach to delivering the vision and goals set out in the Hunter Regional Plan 2036. It applies to the Greater Newcastle LGAs of Cessnock City, Maitland City, Lake Macquarie City, Port Stephens and City of Newcastle.

The City of Newcastle is considered to form the heart of the Greater Newcastle metropolitan area.

A priority outcome for the GNMP is to deliver a diverse range of housing close to jobs and services, with access to public transport and open space.

Facilitating diverse and affordable housing supply close to jobs and services is expected to be supported through the delivery of:

- Strategy 16: Prioritise the delivery of infill housing opportunities within existing urban areas
- Strategy 17: Unlock housing supply through infrastructure coordination and delivery
- Strategy 19: Prepare local strategies to deliver housing

The GNMP sets a metropolitan-wide target to see 60% of new housing delivered in infill areas by 2036, with the remaining 40% to be delivered in greenfield areas. The Newcastle LGA has a significantly lower level of greenfield land supply when compared with the rest of the Greater Newcastle metropolitan area, which means it would need to contribute a higher proportion of infill development than the other LGAs. To support the metropolitan-wide target, the Newcastle LGA may need to support the delivery of around 80-90% of new housing in infill areas by 2036.
The GNMP identifies urban renewal corridors and catalyst areas as the preferred locations for accommodating the greatest intensification of housing and jobs. These areas tend to be along key transport routes and provide the highest level of public transport.

- The Stage 1 Urban Renewal Corridors broadly align with the five renewal corridors already incorporated into Council’s planning controls (LEP and DCP).
- The series of Stage 2 Urban Renewal Corridors identified in the GNMP are nominated as the focus for future planning and investigation efforts.
- Several Catalyst Areas, which are places of metropolitan significance, have been nominated for a collaborative approach to plan for and deliver new development and associated infrastructure. Within the Newcastle LGA, those expected to provide direct opportunities for new housing delivery include:
  - Newcastle City Centre (4,000 new dwellings by 2036): includes Newcastle East, Newcastle, Newcastle West and Wickham;
  - Broadmeadow (1,500 new dwellings by 2036);
  - Callaghan (750 new dwellings by 2036): includes Callaghan and parts of Warabrook, Waratah and Jesmond; and
  - Kotara (400 new dwellings by 2036): includes Kotara and parts of Adamstown Heights.

These areas are considered in more detail in the Appendices to this Report.

Other Catalyst Areas, including those not located within the Newcastle LGA, may also have an influence on housing demands across the LGA, particularly as growth within these areas change the nature or location of jobs and services over time.

GNMP Action 19.1 requires Council to prepare a local strategy within two years (or by 2020) that is in accordance with the Greater Newcastle Metropolitan Plan. In doing so, Council must, at minimum, incorporate the following GNMP actions:

- Action 16.1: to focus new housing in existing urban areas, particularly within strategic centres and along urban renewal corridors.
- Action 16.2: to facilitate new housing in Stage 1 urban renewal corridors, and with assistance from DPIE:
  - amend local plans based on feasibility testing of housing types, built form and infrastructure capacity; and
  - achieve urban densities of 50-75 jobs and people per hectare to improve the viability of major public transport upgrades such as rapid bus or light rail.
- Action 16.3: to undertake an investigation of the renewal potential within Stage 2 urban renewal corridors and will ensure proposals do not prevent future redevelopment opportunities.
Greater Newcastle Future Transport Plan 2056 (TfNSW, 2018)

The Greater Newcastle Future Transport Plan 2056 (GN Future Transport Plan) is a supporting plan to the State-wide Future Transport Strategy 2056 for NSW. The GN Future Transport Plan was developed concurrently with the GNMP to provide an integrated approach to future land use and transport development.

A key focus of the GN Future Transport Plan is to support and grow connections to, from, and within the strategic centres, urban renewal corridors and catalyst areas identified in the Hunter Regional Plan 2036 and the GNMP.

Aligning Council’s Local Housing Strategy with the initiatives set out in the GN Future Transport Plan will support the delivery of new housing in a manner that makes best use of existing and planned transport infrastructure. Concentrating residential densities in strategic locations (centres and corridors) will be an important factor to supporting the viability of public transport upgrades.

In preparing the GN Future Transport Plan, Transport for NSW (TfNSW) investigated seventeen potential corridors across Greater Newcastle for investment in priority public transport over the next ten years. These corridors were investigated based on anticipated patronage growth and development. Of the seventeen priority corridors four were shortlisted for further investigation, and so are most likely to be the focus areas for a rapid bus program in Greater Newcastle. This suggests efforts for increasing residential densities as part of urban renewal efforts should be expedited along routes from Newcastle Interchange to:

- John Hunter Hospital;
- Wallsend;
- Mayfield; and
- Charlestown.

Other transport planning initiatives outlined GN Future Transport Plan that shaped the focus of the Study included (but were not limited to):

- **Greater Newcastle Place Plans (0-10 yrs):** Plan and deliver an integrated transport network within key precincts including catalyst areas.
- **Newcastle Inner City Bypass (0-10 yrs):** A 3.4km bypass between Rankin Park and Jesmond, to the west of John Hunter Hospital. Will provide a western entrance to John Hunter Hospital.
- **Newcastle Light Rail network extension (0-10 yrs):** In the future the light rail may be extended to locations such as Broadmeadow or John Hunter Hospital. At this stage there is no commitment from the State Government.
- **New suburban type rail service for Greater Newcastle (20+ yrs):** The development of the Lower Hunter Freight Corridor from Fassifern to Hexham may result in the potential for additional suburban rail services to operate in location along the corridor.
2.1.4. Newcastle 2030 Community Strategic Plan (CN, 2018)

Council’s Community Strategic Plan, Newcastle 2030, (CSP 2030) articulates the City of Newcastle’s community priorities through a long-term vision, 7 strategic directions and 23 supporting objectives. It was developed through extensive consultation with the community.

CPS 2030’s seven strategic directions are intended to underpin Council’s overall decision-making process to create:

1. A connected city;
2. A protected and enhanced environment;
3. Vibrant and activated public places;
4. A caring and inclusive community;
5. A liveable and distinctive built environment;
6. A smart and innovative city; and
7. Open and collaborative leadership.

The key CSP 2030 objectives most relevant to planning for housing in the City of Newcastle are to facilitate:

- 5.1 A built environment that maintains and enhances our sense of identity;
- 5.2 Mixed-use urban villages supported by integrated transport network;
- 5.3 Greater diversity of quality housing for current and future community needs; and
- 5.4 Sustainable infrastructure to support a liveable environment.
2.1.5. Newcastle Affordable Living Plan (CN, 2018)

The Newcastle Affordable Living Plan primarily looks at demographic factors influencing the demand for affordable housing in Newcastle and discusses what council can do to facilitate new opportunities for affordable living.

The Affordable Living Plan identifies key challenges to the delivery of affordable living in Newcastle which are:

- Supply of quality affordable housing
- Supply of diverse housing options
- Equitable access to transport and services
- Neighbourhoods that support health and wellbeing.

The Affordable Living Plan represents Council’s existing commitment to increase opportunities for affordable living within the Newcastle LGA, which were considered in the Study. These included opportunities to increase affordable living in Newcastle, including through preparing a Local Housing Strategy, use of inclusionary zoning provisions, other LEP and DCP provisions, and other incentives or monitoring initiatives. These draw on examples of how some of these approaches have been applied in other LGAs.
2.1.7. Local Planning Strategy (CN, 2015)

Council’s Local Planning Strategy (LPS) outlines how it will utilise land use planning initiatives to direct future growth and development across the LGA. It is the prevailing document underpinning the application of land use objectives and controls in the Newcastle Local Environmental Plan 2012 (NLEP).

The LPS was last updated in 2015, before the most recent update to Council’s CSP 2030, and was prepared within the context of State level land use strategies that have since been superseded (e.g. the Lower Hunter Regional Strategy (2006) and the Newcastle Urban Renewal Strategy (2014)).

The LPS categorises all commercial centres throughout the LGA as a Regional City (Newcastle City Centre is the only centre in this category), a local centre (major or minor), a neighbourhood centre, or a specialised centre.

The LHS outlines a housing density regime around this centres hierarchy. This assigned all residential land into one of four categories:

- **Renewal Corridors**, which have high transport accessibility and are focussed in or between major local commercial centres. Five renewal corridors - Islington, Mayfield-Tighes Hill, Hamilton, Broadmeadow and Adamstown - were zoned to accommodate the highest residential density and have place-based controls already incorporated within Council’s DCP.

- **Substantial Growth Precincts**, which are within a SAFE1 ten-minute walk of major local centres or railway stations. These precincts partly overlap with the renewal corridors and State identified catalyst areas. An example of residential development forms expected in substantial growth precincts are apartment buildings up to 3 stories.

- **Moderate Growth Precincts**, which are within a SAFE five-minute walk of minor local centres or neighbourhood centres. These precincts also serve as transition areas between substantial growth and limited growth precincts. Medium density forms of housing such as townhouses and 2 storey apartments are expected in moderate growth precincts.

- **Limited Growth Precincts**, which are all the remaining areas. Residential development within these precincts is intended to be limited and remain suburban in character but may include some medium density development forms such as townhouses and villas.

The Study reviewed the LHS centres categorisations and housing density regime within the context for growth described in the Hunter Regional Plan and GNMP.

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1 Council determined growth precinct boundaries based on ‘SAFE’ criteria, which is an acronym for four characteristics that describe the quality of a pedestrian route (Safe, Accessible, Friendly, and Efficient). Refer to Council’s LPS, p. 29 for further information.

The historical development of Newcastle’s urban areas means that there is a higher concentration of historic and heritage buildings in the centre of Newcastle’s established suburbs. These are also the areas that are most suited to intensification of density due to their public transport access, available services and high amenity. Getting the balance right between protecting Newcastle’s heritage and facilitating new residential development to meet the needs of the community in these areas is an ongoing challenge.

Council’s Heritage Strategy provided a strategic framework to guide Council’s management of heritage across the Newcastle LGA. The Strategy set out actions and an implementation framework underpinned by the strategic directions set out in the CSP 2030 applying at the time, and Heritage Policy (adopted 2013).

The Heritage Strategy demonstrates Council’s fundamental commitment to understanding, protecting, supporting and promoting Newcastle’s heritage.

The Heritage Strategy recognises and supports opportunities to recycle, refurbish, and upgrade heritage buildings to meet density targets and activate areas needing renewal.

Several studies underpinned the heritage management framework outlined in Council’s Heritage Strategy, including the Newcastle City Wide Heritage Study (1996-1997), Aboriginal Heritage Study (2005), Newcastle Archaeological Management Plan (1997, reviewed 2013). Place-based studies have also been completed in the Newcastle CBD and surrounding heritage area. These were utilised as reference material throughout the Study.
2.2. Guidelines for planning and plan-making

2.2.1. Local Housing Strategy Guideline and Template (DPIE, 2018)

This guideline is intended to assist all Councils to prepare their Local Housing Strategies. It outlines a step-to-step process for producing a local housing strategy and includes a template strategy.

The Study generally followed the methodology outlined in the guideline and template, Particularly Section 2 – The Evidence, recognising the intent of the Study was to form the evidence base for Council’s Local Housing Strategy. This requires the evidence base to provide a demographic overview, consider factors relevant to housing demand and supply, land use opportunities and constraints, and identify gaps in housing supply and areas with development capacity.

When preparing its Local Housing Strategy, Council will be required to follow the structure set out within the template provided by this guideline. If Council wishes to vary the structure, this will need to be agreed in consultation with DPIE. This may be relevant to the areas of the Study that examined issues that were either not described in the guideline or examined issues to a greater level of detail than required by the guideline. These include consideration of local character issues, and some of the housing considerations for specific needs groups.
2.2.3. Local Character and Place Guideline (DPIE, 2019)

This guideline outlines how local character considerations can be integrated into the NSW planning system and presents different approaches to including local character into the local planning framework. It provides, for the first time, a consistent, state-wide definition of ‘local character’ and ‘place’ to be used in land-use planning in NSW.

It also includes a Character Assessment Toolkit, which Council can use to define the local character of a place, produce a local character assessment, and set the desired future character for an area.

The State government outlines key strategies to ensure that local character is effectively considered in local plan making, which include:

- Communities will play a leading role in defining local character and shaping the desired future character of their local areas;
- Adopting a place-based, design-led approach to plan making which builds on the valued characteristics of local areas;
- Ensuring that the right tools (e.g. mapped controls in an LEP) are available in the planning system to enable the shared future vision for an area to be realised.

Supplementary documents released by the State government provide further guidance on local character, including the Planning System Circular PS 18-001 Respecting and Enhancing Local Character in the Planning System, Local Character and Place Collection e-book, and the Discussion Paper – Local Character Overlays.

The Study recognised that the existing and desired future character of an area is an important consideration when determining the location and form of new housing across the LGA. It found that many suburbs in Newcastle that do not have local character statements that can be used as a benchmark for considering the extent to which new development is complimentary. This guideline, and its supplementary documents, will be important references for Council when undertaking further local character studies for Newcastle’s suburbs.
2.3.1. **Newcastle City Wide Urban Design Guidelines (Coomes Consulting, 2006)**

The Newcastle City Wide Urban Design Guidelines were prepared in response to the substantial increase of new development occurring throughout Newcastle’s suburbs in the early 2000s. Some new developments were failing to respond to Newcastle’s urban character and were seen to be degrading the overall character of specific localities. This remains an ongoing issue today.

The Urban Design Guidelines established basic urban design principles to apply across Newcastle’s different areas, which seek to encourage appropriate urban design outcomes that respect established local character.

The Urban Design Guidelines identifies four urban form categories for the Newcastle LGA:

- Town/village centres
- Pre-War buildings and streets (1800s to 1910)
- Inter-War buildings and streets (1910 to 1950)
- Contemporary Buildings and Streets

For each category, the Urban Design Guidelines generally describe the existing urban structure, form and character, issues and threats to this character, and a desired future character.

The Urban Design Guidelines did not provide a local character assessment for any individual areas. Instead, it recommended a character analysis study is completed for neighbourhoods under immediate threat from inappropriate development. At the time, these were identified as Adamstown, Lambton, Mayfield, Waratah and Stockton. Additional amendments to Council’s DCP were also suggested to consider local character.

The Study provided a basis for these actions to be completed.
### 2.4. Planning instruments and assessment guides

#### 2.4.1. State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (Codes SEPP)

The Codes SEPP allows for certain low-impact residential development to be carried out as either exempt or complying development. This is essentially a fast-track approvals process, removing the need for a DA, provided that the proposed works comply with predetermined development standards specified within the Codes SEPP.

The Study primarily considered what residential development could be delivered within the Newcastle LGA as complying development through one of three codes:

- The **Housing Code**, which permits new 1 and 2 storey dwelling houses, alterations and additions to existing 1 and 2 storey dwelling houses, and attached and detached ancillary development as complying development, but does not permit secondary dwellings which are permitted under the ARHSEPP.

- The **Greenfield Housing Code**, which permits in greenfield areas new 1 and 2 storey dwelling houses, alterations and additions to existing 1 and 2 storey dwelling houses, attached and detached ancillary development as complying development, but does not permit secondary dwellings.

- The **Low Rise Medium Density Housing Code**, which was recently introduced in July 2018, and permits 1 and 2 storey dual occupancies, terraces and manor houses as complying development.

#### 2.4.2. Low Rise Medium Density Design Guides (DPIE, 2018)

The **Low Rise Medium Density Design Guide for Complying Development** and **Low Rise Medium Density Design Guide for Development Applications** were both published in July 2018. Collectively, these guides are designed to assist Council, private certifiers, and applicants in preparing and assessing Development Applications (DAs) and Complying Development Certificates (CDCs) for medium density housing types. These types are defined as detached and attached dual occupancies, manor houses, multi-dwelling housing (terraces, town houses and villas) up to two storeys.

The overall purpose of these guides is to ensure the design quality of medium density dwellings improves the liveability and amenity of the neighbourhoods in which development is occurring and that quality landscaping is delivered with new developments.

The **Low Rise Medium Density Design Guide for Complying Development** was released in conjunction with the introduction of the Low Rise Medium Density Housing Code under the Codes SEPP. This allows for the fast track approval of medium density housing types as complying development in the R1, R2, R3 and RU5 residential zones wherever medium density development is already permitted under Council’s LEP.

The new Code also introduces definitions for new housing types (manor houses and terraces) and allows these to be assessed as complying development or as a DA in cases where the proposal exceeds the development standards under the Code.

The **Low Rise Medium Density Design Guide for Development Applications** is intended to assist Council when assessing DAs for medium density housing proposals.
The Design Guide for CDCs sets out specific objectives and best practice design standards for low rise medium density housing types that must be met in order to obtain a CDC under Part 3B of the Codes SEPP. The design standards address considerations for amenity and liveability such as layout, landscaping, private open space, light, natural ventilation and privacy.

The Design Guide for DAs similarly outlines objectives and best practice design standards for each of the low rise medium density housing types (one and two storey dual occupancies, manor houses, terraces, townhouses, and villas). All DAs for these housing types must be consistent with the relevant objectives and design standards outlined in the Guide until Council has incorporated appropriate design controls into its planning framework (LEP and DCP).

When developing appropriate design controls, Council has the flexibility to adopt the Design Guide for DAs in full, adopt parts of the Guides, or develop new controls that suit their local context. Once controls are in place, Council will no longer be required to consider the Design Guide for DAs.

The Study found that the introduction of the new code has the potential to increase the supply of medium density housing over the long term, particularly through the complying development pathway. However, there are several other factors, such as the availability of land with appropriate lot sizes and market demand for these housing types that will influence the take up of this pathway locally.

2.4.3. State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Seniors SEPP)

The Seniors SEPP was introduced in 2004 to increase the supply and diversity of housing for seniors and people with a disability.

It permits the development of seniors housing forms including a residential care facility (aged care), a hostel or a group of self-contained dwellings (independent living units) on land where it would otherwise be prohibited under a council’s LEP.

The provisions of the Seniors SEPP require that a proposed seniors housing development first obtain a Site Compatibility Certificate (SCC) to ensure that the development is broadly compatible with surrounding land uses. The consent authority for a SCC is the applicable Regional Planning Panel. Subject to approval, a Development Application for the proposed development is then able to proceed.

Seniors housing must also comply with the predetermined development standards and design requirements under Seniors SEPP.

4 DPIE 2018c
2.4.4. **State Environmental Planning Policy No 70 – Affordable Housing (Revised Schemes) (SEPP 70)**

One of the objectives of the EP&A Act is to promote the delivery and maintenance of affordable housing. Section 7.32 of the EP&A Act allows Council to levy contributions for affordable housing.

SEPP 70 provides the mechanism through which Council can develop an affordable rental housing contribution scheme and levy developer contributions for affordable housing. Schedule 2 of SEPP 70 also sets out affordable housing principles to guide the provision of affordable housing.

SEPP 70 has only been applicable to the Newcastle LGA since February 2019, when it was amended to include all councils across NSW.

DPIE has also prepared an accompanying guideline to assist Council preparing an affordable housing contribution scheme. The guideline outlines the step by step process, as required under the EP&A Act and SEPP 70, to:

- Investigate affordable housing needs within the LGA;
- Identify the areas to which an affordable housing contribution scheme will apply;
- Determine a viable affordable housing contribution rate;
- Prepare an affordable housing contribution scheme;
- Amend the LEP through the planning proposal process to reference the affordable housing contribution scheme; and
- Apply consent conditions that require contributions for affordable housing.

Outside of SEPP 70, there are alternative mechanisms that Council can implement to support the delivery of affordable housing including through the ARHSEPP or provisions under Council’s LEP.

2.4.5. **State Environmental Planning Policy (Affordable Rental Housing) 2009 (ARHSEPP)**

The ARHSEPP was introduced in 2009 to increase the supply and diversity of affordable rental and social housing developments. It makes the development of affordable housing forms - including infill affordable housing, secondary dwellings (granny flats), boarding houses, group homes, social housing and supportive accommodation - permissible in certain residential and business land use zones, even if these uses are not permitted under Council’s LEP.

Additional provisions under the AHSEPP to facilitate more affordable forms of housing include:

- Allowing secondary dwellings (granny flats) and group homes to be carried out as complying development if the proposed development meets the relevant development standards under the Affordable Housing SEPP and Codes SEPP.
- Providing development incentives, such as bonus FSR allowance.
- Requiring affordable housing (infill and residential flat buildings) to be used for the purpose of affordable housing for ten years and to be managed by a registered community housing provider.
- Requiring that some development applications make a contribution towards the provisions of new affordable housing if the proposed development will result in a reduction of existing low-cost rental dwellings in an area.

The provisions of the ARHSEPP do not affect the requirements for residential flat buildings to comply with **State Environmental Planning Policy No 65 – Design Quality of Residential Flat Development** (SEPP 65) or require the consent authority to consider compatibility with local character when assessing proposals.
2.4.6. Newcastle Local Environmental Plan 2012

The Newcastle Local Environmental Plan 2012 (NLEP) was developed to make Council’s controls consistent with the NSW Government’s Standard Instrument LEP, as required by law. The NLEP is the most localised basis for Council’s planning decisions for housing, through the application of land zones and other provisions.

Under the NLEP, most residential development occurs where housing is made permissible through the application of zones listed in Table 1. Low density housing is also permissible in environmental protection zones (E2, E3) under the NLEP.

Table 1. Land uses zones that permit residential development under the NLEP 2012

<table>
<thead>
<tr>
<th>Land Use Zoning</th>
<th>Broad explanation of zone intent for residential development</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2 Low Density Residential</td>
<td>Provides diverse housing in a low-density environment (1 to 2 storeys), and that respects local amenity, heritage and character. All ‘residential accommodation’ except for rural workers dwellings is permissible with consent subject to meeting development controls.</td>
</tr>
<tr>
<td>R3 Medium Density Residential</td>
<td>Provides diverse housing in a medium density environment (1 to 3 storeys) and that respects local amenity and character. All ‘residential accommodation’ is permissible with consent subject to meeting development controls.</td>
</tr>
<tr>
<td>R4 High Density Residential</td>
<td>Provides diverse housing in a high density environment (3 storeys +) and balanced with other mixed use development. Also, to maximise redevelopment and infill opportunities along transport corridors and close to centres. Attached dwellings, boarding houses, multi-dwelling housing, residential flat buildings and shop top housing are all permissible with consent.</td>
</tr>
<tr>
<td>B1 Neighbourhood Centre</td>
<td>Provides for residential development in minor local centres that maintain active retail frontages. Boarding houses, dwelling houses and shop top housing are permissible with consent.</td>
</tr>
<tr>
<td>B2 Local Centre</td>
<td>Provides for residential development in local centres that maintain active retail frontages. Boarding houses, dwelling houses and shop top housing are all permissible with consent.</td>
</tr>
<tr>
<td>B3 Commercial Core</td>
<td>Allows for shop top housing in commercial town centres.</td>
</tr>
<tr>
<td>B4 Mixed Use</td>
<td>Integrates residential uses with commercial and other uses in accessible locations to encourage active and public transport use. Boarding houses, seniors housing and shop top housing are permissible with consent.</td>
</tr>
</tbody>
</table>
2.4.7. Newcastle Development Control Plan 2012

The Newcastle Development Control Plan 2012 (DCP) is a non-statutory plan that supports the provisions of the NLEP by offering more detailed planning controls and design guidance.

The DCP provides locality-specific controls and design guidance for the following areas to facilitate development that meets the intended future use and character specific to these areas.

- Newcastle City Centre
- Wickham
- Islington Renewal Corridor
- Mayfield Renewal Corridor
- Hamilton Renewal Corridor
- Broadmeadow Renewal Corridor
- Adamstown Renewal Corridor
- Darby Street, Cooks Hill
- Beaumont Street, Hamilton
- Minmi

The DCP also contains housing density maps developed under the LPS, which clearly articulates residential areas for substantial growth, moderate growth and limited growth.
3. OUR COMMUNITY SNAPSHOT

Population
Newcastle’s population is growing. As of 2018, the Newcastle Local Government Area had a population of around 164,100 residents.

Age
The median age in Newcastle is 37 years old, which is a little younger than the NSW median age of 38. There are a lot of young adults living in Newcastle, compared to NSW. The population is aging over time which means there will be more retirees living in the community.

University Students
1 in every 11 residents are attending university or a tertiary institution, compared with 1 in every 20 people in NSW. Another 1 of every 50 residents are attending TAFE.

Newcastle has a high number of people living in share houses (7%) compared to NSW (4%), this is likely a reflection of the large number of student households.

Special needs
There are some members in the community that have special needs and require extra assistance. Around 6% of Newcastle’s residents have a severe or profound disability and require help in their daily lives. Another 3% of Newcastle’s residents are elderly (85+) and are likely to require some level of assistance currently or in the near future.

Work
Around 1 in every 5 residents work in healthcare and social assistance, which is the largest employment industry locally. Another 1 of every 10 residents work in education and in retail. Education, healthcare and social assistance industries are growing and continue to provide new employment opportunities.

Getting around
Most residents work locally within the Newcastle LGA (66%), or in neighbouring Lake Macquarie (15%).

More than 7 of every 10 residents in Newcastle travel to work by car, with only 1 in every 25 residents taking public transport to work.

Households
People living on their own is the most common way to live in Newcastle (30%), followed by family households with children (26%) and couple households without children (24%). 1% of households are single parent households. Compared to NSW, Newcastle has a higher proportion of lone person and group households and a lower proportion of family households with children. Household sizes are expected to shrink over time as more people live alone or as a couple without children.

Home-ownership
Around 30% of households own their own home, another 30% are paying off a mortgage and 35% of households are renting. There is a higher proportion of renters in Newcastle compared to broader NSW (30%). As housing becomes more unaffordable more households are renting or paying off a mortgage and a fewer proportion of households are owning their own home outright.

Affordability
Many people find the cost of housing unaffordable, especially with increasing housing prices over the last 20 years. Around 6% of households are unable to access housing in the private rental market and live in social housing. Another 13% of households are experiencing ‘housing stress’ which occurs when low income households pay more than 30% of their income on housing costs.

Housing
Around 7 out of 10 houses are detached dwellings, in recent years there are more attached dwellings being built like townhouses and apartments. Many households live in 3 bedroom homes which made up nearly half of Newcastle’s housing stock as of 2016. In recent years there has been an increase in the number of 1, 4 and 5 bedroom homes, and a decrease in the number of 2 and 3 bedroom homes.

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5 .id data for the City of Newcastle Local Government Area (LGA) was used to analyse the demographic profile of local residents, this data primarily relies on 2016 ABS census data. The benchmark area used for comparison is NSW as the Hunter Region SA4 Benchmark excludes both the Newcastle and Lake Macquarie LGAs making it less effective for comparison.

6 2018 ABS Estimated Resident Population (via .id Profile of the City of Newcastle)

7 For the remaining 5% of households the tenure is not stated. .id profile 2018
4. NEWCASTLE’S POPULATION TRENDS

The previous section of this Report outlined the State and local policy framework which provides key strategic considerations for housing in the City of Newcastle.

Building on this, population trends have been assessed in this section to give an explanation of the demographic factors driving growth and demand for new housing in Newcastle. Demographic trends such as age structure, household size and income also provide insight into the likely demand for different dwelling types and the need for affordable housing.

KEY INSIGHTS

- Newcastle’s population is projected to increase by around 41,150 new people between 2016 and 2041, or around 1,650 people each year. The population is projected to grow faster in the first 10 years (2016 - 2026) at a rate of around 1,950 people per year. After (between 2026 - 2041), the population is projected to grow at a slower rate of around 1,450 new people per year.

- Newcastle has a much higher proportion of young adults (15-35 year olds) living in the LGA compared to broader NSW. Young adults are attracted to Newcastle for tertiary studies and new employment opportunities.

- Newcastle’s population is aging slightly, as with much of Australia. The proportion of people of retirement age (65+) will increase from 15% in 2016 to 17% in 2041.

- Lone person households are the most common household type in the Newcastle LGA, followed by couples with children and then couples without children. The City Centre and Newcastle’s inner suburbs have the highest percentage of lone person households, while Newcastle’s outer suburbs have a higher percentage of couples with children households.

- The number of new households is projected to increase by around 18,250 new households between 2016 and 2041. This growth is partly driven by population growth, but also driven by an increase in retirees and young people living alone or in two person households.

- People living in the Newcastle LGA are most commonly employed locally as healthcare and social assistance professionals followed by education and training professionals and community and personal service workers. There are a high number of clerical and administrative workers working across a variety of industries.

- Households in the Newcastle LGA earn on average around $72,700. This is higher than other regional areas in NSW ($60,740) but lower than NSW as a whole ($77,270). Over 1 in 3 households in the LGA earn a very low to low annual household income of less than $48,590, limiting their ability to pay for housing.
4.1. Our Population Growth

4.1.1. Historical trends

As of 2018, the Newcastle LGA had a population around of 164,000 residents\(^8\). The population has grown at a rate of around 1% per year between 2006 and 2018, or an average of 1,450 new residents each year\(^9\). This rate of growth is slower than broader NSW which grew at a rate of 1.5% per year over the same period.

Table 2 shows the five Community Profile Areas that have historically experienced the fastest population growth rates. These trends suggest population growth rates are highest in areas where new housing being delivered through a coordinated and deliberate approach.

Fletcher-Minmi has achieved a population growth rate substantially higher than anywhere else in the LGA. Here, residential growth is being delivered as a planned urban release area, where a handful of developers are releasing relatively large volumes of homes in quick succession.

The Birmingham Gardens - Callaghan area includes the University of Newcastle campus. Here, the University has recently built four new student accommodation buildings.

Residential growth in the Newcastle- Newcastle East- Newcastle West area encompasses Newcastle City Centre. Here, development is underpinned by an urban renewal framework, including the Honeysuckle development program led by the Hunter and Central Coast Development Corporation.

In the Jesmond and Islington areas, growth is not underpinned by an area-specific plan and appears to have occurred more organically.

\(^8\) Measured using the Estimated Resident Population (ERP). The ERP is the official ABS estimate of the Australian population. It is based on the usual resident population and includes adjustments for ABS Census undercount.

\(^9\) Based on the Compound Annual growth rate, as used by .id profile

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Table 2. Historical population growth in the City of Newcastle (2006-2016)

<table>
<thead>
<tr>
<th>Community Profile Area</th>
<th>Residential growth 2006 - 2016</th>
<th>Average annual growth rate (C AGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fletcher - Minmi</td>
<td>3,100 residents</td>
<td>8.1%</td>
</tr>
<tr>
<td>Birmingham Gardens - Callaghan</td>
<td>1,250 residents</td>
<td>3.8%</td>
</tr>
<tr>
<td>Newcastle- Newcastle East- Newcastle West</td>
<td>1,350 residents</td>
<td>3.3%</td>
</tr>
<tr>
<td>Jesmond</td>
<td>580 residents</td>
<td>2.1%</td>
</tr>
<tr>
<td>Islington</td>
<td>350 residents</td>
<td>2%</td>
</tr>
</tbody>
</table>

(Source: .id community profile 2018)
Population projections

DPIE and .id profile have separately released population projections for the Newcastle LGA, which are presented in Table 310.

DPIE’s projections were released in 2016, and modelled to 2036. These utilise 2011 census data. Using the 2016 census data as a benchmark, Newcastle’s population has grown at a slower rate than DPIE projected between 2011 and 2016.

By comparison, .id profile’s projections were released in 2018 and modelled to 2041. These use 2016 census data.

The Study utilised .id profile’s population, as these are based on the most recent census data and, over time, appear to be more consistent with historical trends.

Table 3. Future population estimates for the Newcastle LGA (2016-2036)

<table>
<thead>
<tr>
<th>Data source</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
<th>2036</th>
<th>Total change</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPIE (2016)</td>
<td>165,050</td>
<td>174,400</td>
<td>183,450</td>
<td>192,250</td>
<td>198,350</td>
<td>33,300</td>
</tr>
<tr>
<td>medium series</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID Profile (2018)</td>
<td>160,900</td>
<td>171,300</td>
<td>180,600</td>
<td>188,000</td>
<td>195,050</td>
<td>34,100</td>
</tr>
</tbody>
</table>

(Source: .id community profile 2018 and DPIE 2016)

Figure 1. Historical and projected population for the Newcastle LGA (2016-2041)

(Source: .id Profile 2018)

Table 4. Areas with the highest projected population growth in Newcastle (2016-2041)

<table>
<thead>
<tr>
<th>Community profile area</th>
<th>Projected population growth 2016 - 2041</th>
<th>Average annual growth rate (C AGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newcastle- Newcastle East-West</td>
<td>6,850 residents</td>
<td>3.74%</td>
</tr>
<tr>
<td>Fletcher - Minmi</td>
<td>7,150 residents</td>
<td>3.18%</td>
</tr>
<tr>
<td>Maryville - Wickham</td>
<td>2,650 residents</td>
<td>2.83%</td>
</tr>
<tr>
<td>Broadmeadow- Hamilton North</td>
<td>2,000 residents</td>
<td>2.29%</td>
</tr>
<tr>
<td>Elermore Vale- Rankin Park</td>
<td>4,900 residents</td>
<td>2.15%</td>
</tr>
</tbody>
</table>

(Source: adapted from .id community profile 2018)
4.1.2. Future population growth

Population projections indicate how a population is expected to change over time. Projections are modelled using data from the drivers of population change, which includes births, deaths, and people moving in or out of an area. These also consider the likely rate of new housing delivery within the modelled area based on assumptions made in relation to the capacity of land currently zoned for residential development.

**Figure 1** shows historical (to 2016) and projected (from 2021) population levels for the Newcastle LGA, between 2006 - 2041. Based on .id profile’s projections, Newcastle LGA’s population is expected to increase by around 41,150 new people between 2016 and 2041, or around 1,650 people each year.

The LGA’s population is projected to grow faster in the first 10 years to 2026, at a rate of around 1,950 people per year. Between 2026 - 2041, the population growth rate is expected to slow to around 1,450 people per year.

The level and pace of growth is expected to vary by location. The community profile areas expected to achieve the highest levels of growth to 2041 are shown in

- This is generally consistent with historical trends, with the highest levels of growth occurring in areas underpinned by long-term plans.

The Fletcher-Minmi area is expected to remain one of the fastest growing areas, but the rate of growth will slow compared to previous years as there are limited parcels of land remaining.

Growth within the Maryville-Wickham area is linked with the Newcastle City Centre urban renewal framework, which now includes Council’s Wickham Masterplan.

The Broadmeadow-Hamilton area is identified for growth under the GNMP and is already an identified urban renewal corridor under Council’s LPS.

Projected growth within the Elermore Vale-Rankin Park area would occur on larger pockets of undeveloped land currently zoned for residential development. There are no deliberate plans underpinning this growth.

By comparison, Maryland, Carrington, Merewether-Merewether Heights, Lambton and Waratah West community profile areas are projected to experience little to no population growth over the next 25 years. This is consistent with Council’s existing land use planning framework, which has categorised these areas as ‘limited to moderate growth areas’ and aligned planning controls accordingly.

Merewether, Lambton and Waratah West have recently been identified by the GNMP as locations where urban renewal should be supported. Recent development activity in Merewether and Lambton demonstrates the popularity of these suburbs. This suggests that population growth in these areas may be higher than projected, particularly where facilitated by a managed urban renewal strategy that would support increased residential densities.
4.1.3. Population growth drivers

Figure 2 illustrates the relative contributions of net migration and natural population increase to the Newcastle LGA’s population growth levels to 2041.

Historically, people moving to the Newcastle LGA from other locations in NSW has been the main driver of population growth and change in the Newcastle LGA. People have most commonly relocated to Newcastle from nearby LGAs, including the Central Coast, Mid-Coast and Singleton, and further afield from Port Macquarie-Hastings and Sydney’s Northern Beaches. The most common age group moving to Newcastle are 18 to 24-year-olds, which may be reflective of young people arriving from nearby regional areas to pursue tertiary education and employment opportunities.

The most common age group moving out of the LGA has been 25 to 34-year-olds. When they left, residents were most likely to move to neighbouring Lake Macquarie, Maitland and Cessnock LGAs, all of which are within the same service / employment catchment. This may suggest one motivation for people leaving the LGA is to find affordable housing options, particularly as they start having children.

Net migration in favour of growth within the LGA is expected to remain strong, particularly to 2026.

Natural population changes due to births and deaths within the resident population have historically played a less of a role in the overall growth level. Projections expect a larger contribution from this driver from 2026.
4.2. Our age structure

As people grow from children through to seniors, the type of housing and services that they need, or would otherwise expect, also changes. Analysis of the age structure of the Newcastle LGA’s population therefore provided important considerations for planning to meet residents’ housing needs at various life stages.

**Figure 3** shows the proportion of Newcastle’s residents who are children, young adults, adults and retirees. Compared with the rest of NSW, Newcastle has a much higher proportion of young adults (15-35) living in the LGA, and a slightly lower number of children (0-14), adults (35-54) and retirees (65+).

Young adults tend to move to Newcastle for tertiary study and employment. Many young adults with family living locally are likely to live at home. Those relocating to Newcastle drive the demand for rental housing while studying and establishing a career, making the availability and affordability of rental accommodation an important consideration for planning.

*Source: adapted from .id community profile 2018*
4.2.1. Changes in age structure

Newcastle has maintained a consistent age structure over the last 10 years and is projected to continue over the next 25 years, as shown in Figure 4. While there are no major shifts in age structure, there are smaller trends that will influence housing needs across the LGA.

Newcastle’s population is aging slightly, as with much of Australia. Looking at historical trends, over the last ten years Newcastle has gained a higher proportion of older adults aged 55-64 and early retirees aged 65-69. Newcastle is noted as the top migrated to region in NSW for over 65s\textsuperscript{12}. Over the next 10 years these residents will grow older which means that Newcastle is projected to have a higher proportion of retirees aged 65-79, than previously seen. It is important that the housing needs of this growing cohort are identified and planned for.

It is highly likely that the Newcastle LGA will continue to have a larger proportion of young adults compared to broader NSW. As UoN expands, and job opportunities in the health sector increase, it will be important to plan for housing options that meet young adults; budgetary needs.

\textsuperscript{12}AHURI 2018b

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**Figure 4. Historical and projected changes in Newcastle’s age structure (2006-2041)**

(Source: adapted from .id community profile 2018)
4.3. Our household structure

Household formation is another driver of housing demand, even if no population growth occurs. Analysis of how Newcastle LGA’s residents form households, and how this is projected to change over time, gives some indication of future demand in relation to the number and size of new dwellings required, relative to population growth.

In 2016, there were around 65,350 households in the Newcastle LGA. Figure 5 shows the breakdown of different household types at this time.

Lone person households were the most common household type, followed by couple families with children, and couples without children. The living arrangements of these household types can vary and should be considered when reviewing housing demand in more detail. For instance, people living along can be any age from young adults through to elderly. Likewise, one parent families could include an adult child caring for an elderly parent, or a single parent caring for their young child.

When compared to broader NSW, the Newcastle LGA has a much lower proportion of couples with children households and a much higher proportion of lone person and group households.

Household compositions vary greatly across the community profile areas.

Newcastle City Centre and adjoining suburbs, including Bar Beach, The Junction, The Hill and Cooks Hill, have a higher proportion of people living alone.

Middle and outer suburbs like Fletcher, Minmi, Maryland, Adamstown Heights and Kotara all have higher proportions of family households (couples or single parents with children, or other families), but very few lone person households.

Suburbs close to the University of Newcastle campuses such as Birmingham Gardens, Callaghan, Waratah West, Jesmond, Cooks Hill and The Hill have a higher proportion of group households, which are popular with students.

Figure 5. Household types (percentage) in the Newcastle LGA (2016)

(Source: adapted from .id community profile 2018)
Household projections data source

DPIE and .id profile have separately released household projections for the Newcastle LGA, which are presented in Table 5.

Household projections are not targets. They are outputs of population projection modelling, based on assumptions about future trends in births, deaths, migration, living arrangements and likely development activity\(^{14}\).

DPIE’s household projections were released in 2016 and were modelled to 2036 using 2011 census data. DPIE projected that household sizes would decline between 2011 and 2016 as the number of lone person households and couples without children increase. Using the 2016 census data as a benchmark, Newcastle’s household size instead remained consistent during the 2011-16 period.

By comparison, .id profile’s projections, released in 2018, were modelled using 2016 ABS Census data. The Study drew on .id’s household projections as they reflect the latest available census data and are therefore a more up to date projection of Newcastle’s future household change.

Table 5. Household projections for the Newcastle LGA (2016-2036)

<table>
<thead>
<tr>
<th>Data source</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
<th>2036</th>
<th>Total change</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPIE (2016) (medium series)</td>
<td>69,850</td>
<td>74,200</td>
<td>78,350</td>
<td>82,400</td>
<td>85,400</td>
<td>15,550 1.1% AAGR</td>
</tr>
<tr>
<td>DPIE (2016) Average household size</td>
<td>2.30</td>
<td>2.29</td>
<td>2.28</td>
<td>2.27</td>
<td>2.25</td>
<td>- 0.5</td>
</tr>
<tr>
<td>ID Profile (2018)</td>
<td>65,350</td>
<td>69,450</td>
<td>73,550</td>
<td>77,100</td>
<td>80,350</td>
<td>15,000 1.1% AAGR</td>
</tr>
<tr>
<td>ID Profile (2018) Average household size</td>
<td>2.38</td>
<td>2.39</td>
<td>2.38</td>
<td>2.37</td>
<td>2.36</td>
<td>-0.2</td>
</tr>
</tbody>
</table>

(Source: DPIE 2016 and .id community profile 2018)

4.3.1. Household changes

The total number and mix of new housing required to accommodate growth and change over time is driven by changes in household formation, type and size.

.id’s 2018 household projections for the Newcastle LGA show that the number of households is projected to increase from 65,377 in 2016 to 73,550 in 2026, to 80,350 in 2036 and 80,350 in 2041.

This indicates that Newcastle is estimated to gain around 18,250 additional households over the next 25 years (2016-2041), or 730 new households each year.

Looking at historical trends, Newcastle gained around 3,600 additional households over the last 10 years (2006-2016). This means that around 360 new households were forming each year.

Household projections expect the rate of new households forming to more than double to around 730 new households each year. This is driven by new people moving to Newcastle, as well as a trend towards smaller (lone person and couple with no children households) household types, as shown in Figure 6.
If household sizes become smaller, more houses would theoretically be needed to accommodate the same number of people.

In 2016, Newcastle had an average household size of 2.4 people per dwelling. Looking at historical trends, this reflects a marginal increase from 2.3 in 2006. This increase is likely a response to the cost of housing (for rent or purchase), as more people opt for affordable living arrangements like living at home for longer or shared accommodation. This trend is also evident across Sydney.

Figure 6. Projected change in household type (2016-2041)

(Source: adapted from .id community profile 2018)

Looking at future projections, Newcastle’s average household size is expected to remain at around 2.4 people per dwelling for the next 5 years. From 2021, Newcastle’s household size is projected to decrease slightly to 2.35 average people by 2041. This would likely be driven by an increase in the proportion of smaller (lone person and couples without children) households.

Most community profile areas are projected to experience a decline in average household size over time. Exceptions to this include Adamstown Heights, Elermore Vale-Rankin Park, Kotara, Jesmond, Mayfield-Mayfield East, and Shortland-Sandgate. These areas already have a high proportion of families with children and group households, and this trend is expected to continue.

Figure 7. Number of residents per household in the Newcastle LGA (2006-2016)

(Source: adapted from .id community profile 2018)

Figure 7 compares the number of residents per household in the Newcastle LGA in 2006 and 2016.
4.5. Our Employment

Employment participation and the nature and location of jobs influence housing demand. Whether a person is working, and how often they work, can determine the type of housing they can afford. People are also attracted to cities or towns which have strong employment opportunities, fuelling further demand for new housing.

In 2016, 57% of Newcastle's residents were employed full-time, 36% were part-time, and 7% were unemployed. Since 2011, the proportion of unemployed and part-time workers has risen, while the number of full-time workers has declined. This is likely to increase demand for more affordable housing options.

Most residents (66%) live and work locally. Those who do leave the LGA for work most commonly work in neighbouring Lake Macquarie LGA.

The Newcastle LGA has a diverse economy offering jobs across a wide range of industries, as shown in Figure 8. The healthcare and tertiary education sectors employ the highest number of residents, and growth in these industries is expected to continue. The John Hunter Hospital campus and University of Newcastle campuses at Callaghan and in Newcastle City Centre are key locations for employment in these industries.

Figure 8. Top industries of employment for Newcastle LGA residents (2016)

(Source: .id community profile 2018)
Figure 9 shows the main areas of occupation for people living in the Newcastle LGA. The LGA has a higher percentage of residents employed as professionals and community and personal service workers when compared to broader NSW, which is due to the significant job opportunities in the healthcare and social assistance industry offered locally. These were also the fastest growing occupations between 2011 and 2016.

The number of ‘professionals’ is more than double the next highest area of occupation. Within this category, healthcare and social assistance professionals and education and training professionals make up the top two sub-categories, which again reflects the importance of these industries.

Several of top areas of occupation tend to attract lower wages and casualised working arrangements. This is likely to influence budgetary considerations with respect to housing.

Figure 9. Top occupations of employment for Newcastle LGA residents (2016)

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professionals</td>
<td>19,899</td>
</tr>
<tr>
<td>Clerical and Administrative Workers</td>
<td>9,555</td>
</tr>
<tr>
<td>Technicians and Trades Workers</td>
<td>9,424</td>
</tr>
<tr>
<td>Community and Personal Service</td>
<td>8,998</td>
</tr>
<tr>
<td>Workers</td>
<td></td>
</tr>
<tr>
<td>Managers</td>
<td>7,325</td>
</tr>
<tr>
<td>Sales Workers</td>
<td>6,714</td>
</tr>
<tr>
<td>Labourers</td>
<td>6,310</td>
</tr>
<tr>
<td>Machinery Operators and Drivers</td>
<td>3,782</td>
</tr>
</tbody>
</table>

(Source: .id community profile 2018)
4.6. Our Income

Analysing the mix of household incomes across the Newcastle LGA provided an indication of local housing demand. A household’s income generally determines what people can pay towards housing and other essential needs and will therefore influence the type and location of housing they choose.

As of 2016, households in the Newcastle LGA were earning a median annual income of $72,700. This is lower than the median annual household income for the whole of NSW ($77,270) but is higher than the median annual household income for Regional NSW ($60,740) which excludes Greater Sydney and Canberra.

Median household income is used as a measurement tool by the NSW Government to indicate the level of housing stress that a household is likely to experience. Households earning a very low to moderate household income are at higher risk of experiencing housing stress in the private housing market.

Table 6 shows the income range for very low to high income households in the Newcastle LGA, as of 2016.

Figure 10 shows the proportion of households in the Newcastle LGA that fall under each income range. Over one third of households in the LGA earn a very low to low household income of less than $48,590. This appears to reflect the level of unemployment and is likely to be influenced by the lower wage-earning potential and casualised nature of several of the main occupations for the resident workforce (e.g. administration, retail, trades, and community services).

---

Table 6. Household income range for the Newcastle LGA (2016)

<table>
<thead>
<tr>
<th>Income band</th>
<th>% Median Income</th>
<th>Annual household income</th>
<th>Weekly household income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very low</td>
<td>50% or less</td>
<td>$30,370 - $48,590</td>
<td>$580 or less</td>
</tr>
<tr>
<td>Low</td>
<td>50-80%</td>
<td>$30,370 - $48,590</td>
<td>$580 - $930</td>
</tr>
<tr>
<td>Moderate</td>
<td>80-120%</td>
<td>$48,590 - $72,890</td>
<td>$930 - $1,400</td>
</tr>
<tr>
<td>High</td>
<td>120% or more</td>
<td>$72,890 or more</td>
<td>$1,400 or more</td>
</tr>
</tbody>
</table>

(Source: adapted from ABS 2016)

---

15 The median used was the 2016 Regional NSW median annual household income of $60,740 as calculated by the ABS.
Very low and low income households have less choice in the type and location of housing that they can afford. Analysing the locations across Newcastle LGA the highest proportion of very low income households can be an indicator of relative housing affordability. These areas are listed in Table 7.

Table 7 also identifies areas that have the lowest proportion of very low and low income households. This may suggest a potential misalignment between the availability of affordable housing options areas that are conveniently located to major service or employment locations, which warrants further investigation. It also identifies middle and outer suburban areas, where the houses are generally larger detached dwellings, may be unaffordable to this cohort.

<table>
<thead>
<tr>
<th>Areas with the highest % of very low to low household incomes</th>
<th>Areas with the middle % of very low to low household incomes</th>
<th>Areas with the lowest % of very low to low household incomes</th>
</tr>
</thead>
</table>

(Source: adapted from .id social atlas 2018)

---

16 .id social atlas provides data showing the distribution of low income households (households earning less than $650 per week), it is based on an ABS rather than NSW Government income range.
5. NEWCASTLE’S HOUSING DEMAND

Demographic factors considerations like those discussed in the previous section are one component influencing demand for housing in an area. The Study also considered the influence of housing preferences and housing affordability on housing demand across the LGA. These factors are important in determining the size, type, and location of housing demand, based on what people are hoping or able to buy and rent.

This Section presents considerations for housing demand at a broad (population) level. Considerations for groups known to have specific housing requirements are considered in Section 7.

KEY INSIGHTS

- Based on .id’s projections, the Newcastle LGA is estimated to grow by an additional 18,250 households over the next 25 years (2016-2041). The theoretical number of new homes required to accommodate this change is around 19,450.

- The theoretical number of new dwellings required to accommodate new households is larger predominately due to a higher vacancy rate of dwellings.

- To accommodate higher levels of population growth between 2016 and 2026, the theoretical rate of new homes needed will be around 875 new dwellings each year, slowing to around 710 new dwellings each year between 2026 and 2041.

- Research into housing preferences indicates that households overall, prefer to live in detached housing and, increasingly, medium density housing. There is less preference to live in high-density housing, except in high amenity areas with great access to jobs, education and services.

- Purchasing a home in Newcastle is generally unaffordable for very low to moderate income households. This is a likely cause of more households remaining in the rental market.

- 31% of renting households in the Newcastle LGA are experiencing housing stress. Generally, the market appears affordable for households earning a moderate income or above. Households earning a low income or below will struggle to find housing they can afford to rent, particularly if they are looking for a larger detached dwelling (typically sought by families with children).
5.1. Underlying Housing Demand

Underlying housing demand refers to the theoretical number of homes needed to accommodate the projected number of households. It can also be called implied dwelling demand.

The underlying dwelling demand projections modelled as part of the Study estimate an additional 19,450 new dwellings will be required to accommodate the 18,250 new households projected to form over the next 25 years (2016-2041). More dwellings than households are required to accommodate for the number of dwelling vacancies projected over this period. The vacancy rate for Newcastle is expected to remain relatively consistent at around 94%. Dwellings can be vacant for a range of reasons, including, most commonly, where they are used as second homes.

The underlying housing demand is expected to vary from year to year in line with population growth and household formation. Figure 11 shows the theoretical number of new homes projected to be required over each five-year period. Between 2016 and 2021 there is projected demand for an additional 4,450 new homes. As with population and household projections, the underlying dwelling demand is projected to slow somewhat from 2026 onward.

Figure 11: Five-yearly underlying housing demand (2016-2041)

Underlying dwelling demand projections

Underlying dwelling demand projections are modelled based on the projected number of households and the projected number of unoccupied dwellings. Modelling assumes that one household occupies one dwelling and an adjustment is made to account for the percentage of unoccupied dwellings as some households own more than one house, etc.\textsuperscript{17}

The Study recognised that DPIE modelled underlying dwelling demand projections for the Newcastle LGA, based on household projections. These are shown for context in Table 8, but did not form the basis for the Study.

Table 8. DPIE’s projected underlying dwelling demand for the Newcastle LGA (2016-2036)

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
<th>2036</th>
<th>Total change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dwelling demand</td>
<td>75,450</td>
<td>80,150</td>
<td>84,650</td>
<td>89,000</td>
<td>92,250</td>
<td>16,800</td>
</tr>
</tbody>
</table>

(Source: DPIE 2016)

For consistency, the Study instead modelled implied dwelling demand projections based on .id profile’s household projections utilising .id profile’s occupancy rate projections to 2041. The outputs of this modelling are shown in Table 9, and illustrated in Figure 11.

Table 9. CPSD implied dwelling demand projections for the Newcastle LGA (2016-2041)

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
<th>2036</th>
<th>2041</th>
<th>Total change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total households</td>
<td>65,400</td>
<td>69,450</td>
<td>73,600</td>
<td>77,100</td>
<td>80,350</td>
<td>83,650</td>
<td>18,250</td>
</tr>
<tr>
<td>% occupied dwellings</td>
<td>94.4%</td>
<td>94.2%</td>
<td>94.3%</td>
<td>94.3%</td>
<td>94.3%</td>
<td>94.3%</td>
<td>-0.1%</td>
</tr>
<tr>
<td>Dwelling demand</td>
<td>69,050</td>
<td>73,500</td>
<td>77,800</td>
<td>81,450</td>
<td>84,950</td>
<td>88,450</td>
<td>19,450</td>
</tr>
</tbody>
</table>

(Source: CPSD modelling based on .id population projections 2018)

\textsuperscript{17} DPIE 2019d
5.2. Effective Housing Demand

Effective housing demand builds on underlying housing demand to consider the demand for different types of housing, and in what locations. The Study considered household preferences and income in this regard.

5.2.1. Housing Preferences

The housing choices that households make are influenced by a number of complex factors, including dwelling price, dwelling features, proximity to shops and services, and distance from family and friends. Housing choice is also driven by ‘external factors’ which include things such as cultural norms (for example, the great Australian dream of the quarter acre block), economic policy and drivers (such as interest rate cuts and taxation policies like stamp duty), and planning policy (such as the push for higher density housing to be built along key transport corridors). Collectively these factors influence what houses people are able and willing to buy.

Evidence into housing preferences is limited, particularly at the local level. The Study drew on National research into housing preferences of Australians by both the Grattan Institute and the Australian Housing and Urban Research Institute (AHURI). Local research into housing preferences included a Council run community survey and two focus groups: one targeted at tertiary students, and the other at over 55s. Below is a summary of the collective insights from these studies, with more detailed considerations into housing preferences for particular needs discussed in Section 7.

The ideal house: If money was no object, many Australians would choose to live in larger detached dwellings with private open space, and close to services and amenities.

Trade-offs: Most people cannot afford their ideal house in their preferred location, so trade-offs must be made. Around half of the population would prefer to trade-off size and separation for their ideal location.18

Preferences change: Younger families, particularly those with children, rank house features as most important (e.g. the number of bedrooms). Older or single-person households prioritise proximity to friends and family, shops and health services.19 20

Services and amenity: Proximity to public open space, supermarkets, and health services were consistently rated as more important than proximity to employment and schools.

Older households: Overall, older households would like to age in their current home. Those wanting to move (around 10%), cite downsizing and easier maintenance as the main reasons.21 Seniors housing, such as retirement villages, is unappealing to most older Australians.

Younger households: Housing choice for younger households (18-34 years) is highly constrained by income. 18 to 24 year olds are choosing to remain living at home (66%) or live in group households (13%) to make study and travel more feasible. Students living out of home prefer to live close to where they study. Younger households prefer living in inner suburbs.24
### 5.2.2. Ability to Purchase Housing

Housing choices are highly influenced by affordability. Compared to 20 years ago, housing in Australia, and NSW especially, is generally more unaffordable for very low to moderate income households, as illustrated in Figure 12. In 2017, less than 2% of housing stock was affordable for very low income households, 5% for low income households and 25% for moderate income households\(^\text{25}\).

Housing prices have increased significantly for a number of reasons, including high population growth, increasing construction costs and our appetite for investing in property. Wage growth has not kept pace, and the disparity between what households earn and the homes that they can afford to buy has increased.

More recently, housing prices across Australia have fallen from a peak in late 2017. Between June 2018 and June 2019 house prices in Newcastle and Lake Macquarie fell by 9%\(^\text{26}\). The cooling of house prices is allowing for more owner-occupiers to enter the market, particularly first home buyers. However, housing still remains unaffordable to purchase for very low to moderate income households.

Housing affordability in the Newcastle LGA varies between suburbs. The Study compared the affordability of housing in different suburbs by examining the ratio of dwelling prices to household income. This measure is often called the *price to income ratio* or *median multiple*. The key findings of the Study’s analysis are presented below for detached dwellings and, separately, townhouses and apartments. This recognises that size and separation are major trade-off factors when choosing a location.

---

\(\text{25} \text{FACS 2019a} \) \(\text{26} \text{CoreLogic 2019} \)
Buying a detached dwelling

As of 2018, the median price for a detached dwelling in the Newcastle LGA was around 11 times the median household income\(^{27}\). The most unaffordable suburbs have a price to income ratio of 15 or above, meaning that the median detached dwelling price in these suburbs is over 15 times the median household income. These suburbs, listed in Table 10, are high amenity areas and have a lower proportion of detached dwellings compared to other suburbs. This suggests locational advantages, as well as the scarcity of this product, are both contributing factors to the unaffordability of the area.

The most affordable suburbs for detached dwellings have a price to income ratio between 5 and 8, meaning that the detached dwelling price in these suburbs is around 5 to 8 times the median household income. These suburbs tend to be in more outlying areas, and generally have a higher proportion of, or are entirely comprised of detached dwellings.

Table 10. Price to income ratio for detached dwellings, by suburb (2018)

<table>
<thead>
<tr>
<th>Top 10 least affordable suburbs to purchase a detached dwelling</th>
<th>Top 10 most affordable suburbs to purchase a detached dwelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newcastle East (24.2)</td>
<td>Beresfield (5.4)</td>
</tr>
<tr>
<td>Newcastle West (22.5)</td>
<td>Tarro (5.5)</td>
</tr>
<tr>
<td>The Junction (20.7)</td>
<td>Shortland (6.2)</td>
</tr>
<tr>
<td>Merewether (18.1)</td>
<td>Jesmond (6.5)</td>
</tr>
<tr>
<td>Hamilton East (17.6)</td>
<td>Birmingham Gardens (6.6)</td>
</tr>
<tr>
<td>The Hill (17.5)</td>
<td>Wallsend (7.0)</td>
</tr>
<tr>
<td>Newcastle (17.2)</td>
<td>Maryland (7.0)</td>
</tr>
<tr>
<td>Bar Beach (15.7)</td>
<td>Waratah West (7.3)</td>
</tr>
<tr>
<td>Cooks Hill (15.4)</td>
<td>Minmi (7.6)</td>
</tr>
<tr>
<td>Hamilton South (15.1)</td>
<td>Mayfield West (7.8)</td>
</tr>
</tbody>
</table>

(source: CPSD, adapted from data provided by PRD Nationwide 2019)

---

\(^{27}\) The median household income for the Newcastle LGA as of 2018 was $73,300 it has been calculated based on 2016 ABS Census data and accounting for the inflation rate over two years.
Buying an attached dwelling

Apartment and townhouse prices are slightly more affordable throughout the LGA, costing on average 7.4 times the median household income. The most expensive areas for townhouses and units, listed in Table 11, and are all areas with high amenity. The inner city areas of Newcastle, Newcastle East and Newcastle West have a high proportion of apartments and townhouses, which indicates the location may be a strong influence on affordability than simply the scarcity of dwellings.

The most affordable suburbs for attached dwellings have a price to income ratio between 2 and 6, meaning that the price in these areas is between 2 and 6 times the median annual household income. The most affordable suburbs for attached dwellings closely match those for detached dwellings also and tend to be Newcastle’s outer suburbs including those that surround the UoN Callaghan Campus. There is likely to be a high demand for low cost rental housing in these areas from students wanting to live close to where they study.

In Newcastle’s least affordable suburbs...

If a household earning Newcastle’s median annual income of $73,300 could only save 15% of their weekly earnings after other expenses, it would take them 20 years to save for a 20% deposit on a median priced house in Cooks Hill ($1.27million).

For a household earning Newcastle’s median annual income and saving 15% of this income each year, it would take a household 15 years to save for a 20% deposit on a median priced townhouse or unit in The Junction ($825,000).

In Newcastle’s most affordable suburbs...

For a household earning Newcastle’s median annual income and saving 15% of this income each year, it would take the household over 7 years to save for a 20% deposit on a median priced house in Shortland ($415,000).

For a household earning Newcastle’s median annual income and saving 15% of this income each year, it would take the household over 3 years to save for a 20% deposit on a median priced attached dwelling in Mayfield West ($193,000).

Table 11. Price to income ratio for detached dwellings, by suburb (2018)

<table>
<thead>
<tr>
<th>Top 10 least affordable suburbs to purchase townhouses + units</th>
<th>Top 10 most affordable suburbs to purchase townhouses + units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newcastle East (17.3)</td>
<td>Mayfield West (2.6)</td>
</tr>
<tr>
<td>Maryville (11.9)</td>
<td>Tarro (4.0)</td>
</tr>
<tr>
<td>Carrington (11.3)</td>
<td>Jesmond (4.5)</td>
</tr>
<tr>
<td>The Junction (11.3)</td>
<td>Beresfield (4.6)</td>
</tr>
<tr>
<td>Bar Beach (10.4)</td>
<td>Elermore Vale (5.3)</td>
</tr>
<tr>
<td>Adamstown Heights (10.2)</td>
<td>Georgetown (5.7)</td>
</tr>
<tr>
<td>Hamilton North (10.1)</td>
<td>Shortland (5.7)</td>
</tr>
<tr>
<td>Newcastle (9.2)</td>
<td>Wallsend (5.7)</td>
</tr>
<tr>
<td>Tighes Hill (8.7)</td>
<td>Maryland (6.0)</td>
</tr>
<tr>
<td>Newcastle West (8.4)</td>
<td>Waratah (6.0)</td>
</tr>
</tbody>
</table>

(source: CPSD, adapted from data provided by PRD Nationwide 2019)
5.2.4. Ability to Rent Housing

With home ownership beyond the reach of moderate-income households in most suburbs, more households must secure housing through the rental market. Between 2011 and 2016, the number of households renting within the Newcastle LGA increased by 1.5%, while the number of households who owned their home either outright or with a mortgage decreased by 1.5%.

Housing is generally unaffordable to rent in Newcastle for very low to low-income households, but affordable for moderate income households, as illustrated in Figure 13. In 2017, 14% of housing stock was affordable for very low-income households, 36% for low-income households, and 82%, for moderate-income households.

Historically, rents have been tied to wage growth rather than property prices and have been a more affordable form of tenure for people on lower incomes. More recently, rents have increased at a faster rate than wage growth. Over the last 10 years rents across the Australia have increased by 76%. Between 2006 and 2016, the median weekly rent of the Newcastle LGA increased by 74% while household incomes have only increased by 55%.

*Figure 13. Percentage of housing stock that is affordable to rent, by household income type (Newcastle LGA)*

(Source: FACS 2019a)
The least affordable areas to rent in the Newcastle LGA in 2016, based on median weekly rental payments, are shown in Figure 14. These tend to relate to areas within or adjoining Newcastle’s City Centre, where land values are highest. This suggests the amenity of these areas are a major contributing factor to rental costs.

Notably, some of the least affordable areas surround the University of Newcastle’s campus in the City Centre, suggesting that students may struggle to find affordable rental housing close to where they study. This is also relevant for low-wage earners (e.g. retail, hospitality, and service staff) reliant on employment provided in the City Centre. This may push many of these types of households into outlying areas and should be considered alongside planning for adjustments to public and active transport networks.

Some of the least affordable areas also include middle and outer suburbs with relatively cheaper land values compared to the City Centre. These areas tend to have fewer rental properties available (e.g. a higher proportion of owner-occupied dwellings), and limited diversity in the stock available (e.g. mostly detached dwellings). This suggests that limited housing types in these areas is affecting affordability.

The most affordable rental areas, based on median weekly rental payments, are shown in Figure 15. These include inner suburban areas with a high proportion of social housing (Bar Beach and Hamilton South-Hamilton East). They also include Newcastle’s outer suburbs with older housing stock. This suggests that households on the lowest incomes are reliant on housing located in amenity-poor areas, and where rental products may be in poor condition.
Rental stress

The Study analysed the level of housing stress across the community to consider whether households are generally able to access appropriate and affordable housing within the LGA. This can also serve as an indicator of overall community wellbeing, as experiencing housing stress is likely to impact upon a person’s quality of life. A high level of housing stress can indicate that there is strong demand for more affordable housing options to be provided locally.

A household is defined as being under ‘housing stress’ if they are in the lowest 40% of incomes and are paying more than 30% of their household income on housing costs.

As of 2016, around 13% of households in the Newcastle LGA were experiencing housing stress. Housing stress is much more acute in renting households than mortgaged households. Less than 1 in 10 of Newcastle’s households with a mortgage were experiencing housing stress compared with nearly 1 in 3 renting households. This figure is higher than broader NSW which is around 1 in 4 renting households.

Table 12 below shows the number of households in the very low to moderate income households experiencing rental stress. In 2016, 95% of very low income households, 73% of low income households and 33% of moderate income households were experiencing rental stress. This high level of housing stress indicates that there is significant demand for more affordable housing options including social and affordable housing products – discussed in Section 7.

<table>
<thead>
<tr>
<th>Household income</th>
<th>No. of households in stress</th>
<th>% of households in stress</th>
<th>Total no. of households renting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very low</td>
<td>3,128</td>
<td>95%</td>
<td>3,304</td>
</tr>
<tr>
<td>Low</td>
<td>2,567</td>
<td>73%</td>
<td>3,523</td>
</tr>
<tr>
<td>Moderate</td>
<td>1,255</td>
<td>33%</td>
<td>3,833</td>
</tr>
</tbody>
</table>

(Source: FACS 2019c)
Rental stress is evident, to varying degrees, across all of Newcastle’s community profile areas. The exception to this is Merewether Heights, where, at 2016, there were no households recorded as being under rental stress. This suggests households that tend to experience rental stress may be entirely priced out of Newcastle’s most expensive rental suburb.

Table 13 shows the distribution of renting households experiencing rental stress for every community profile area in the Newcastle LGA, as of 2016. These are categorised to illustrate where the highest proportion (more than 30%) of rental households are experience stress, and where the lowest proportion (fewer than 25%) is occurring.

In 2016, the proportion of renting households experiencing rental stress was highest in the Birmingham Gardens – Callaghan area (1 in 2 households) and lowest in the Newcastle City Centre area (1 in 5 households).

The areas with the lowest proportion of rental stress generally coincide with the areas that are least affordable to rent or purchase. This indicates that very low and low-income households are being ‘priced out’ of these areas. It suggests a likely unmet demand for more affordable housing options in these areas, particularly close to jobs and other services in and around Newcastle’s City Centre.

The areas with the highest proportion of rental stress generally reflect the areas that are most affordable to rent. This indicates that low-income households may be opting to rent in these areas, in part, based on their affordability. Several of these areas also surround the University of Newcastle’s Callaghan Campus, and likely reflect the higher number of students (on lower incomes) living in these areas.

Table 13. Distribution of households experiencing rental stress, by community profile area (2016)

<table>
<thead>
<tr>
<th>Highest % of rental stress (≥30%)</th>
<th>Moderate % of rental stress (30-25%)</th>
<th>Lowest % of rental stress (&lt;25%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birmingham Gardens - Callaghan (52%)</td>
<td>Warabrook (30%)</td>
<td>Islington (24%)</td>
</tr>
<tr>
<td>Jesmond (43%)</td>
<td>Tighes Hill (30%)</td>
<td>Merewether (23%)</td>
</tr>
<tr>
<td>NER (42%)</td>
<td>Hamilton (29%)</td>
<td>The Hill (23%)</td>
</tr>
<tr>
<td>Shortland-Sandgate (39%)</td>
<td>Bar Beach (28%)</td>
<td>Fletcher-Minmi (21%)</td>
</tr>
<tr>
<td>Beresfield-Tarro (38%)</td>
<td>Maryland (28%)</td>
<td>Cooks Hill (21%)</td>
</tr>
<tr>
<td>Elermore Vale (35%)</td>
<td>Stockton (27%)</td>
<td>Adamstown Heights (21%)</td>
</tr>
<tr>
<td>Wallsend (34%)</td>
<td>Adamstown (27%)</td>
<td>New Lambton Heights (20%)</td>
</tr>
<tr>
<td>Rankin Park (33%)</td>
<td>New Lambton (27%)</td>
<td>Newcastle-Newcastle East-Newcastle West (18%)</td>
</tr>
<tr>
<td>Waratah West (32%)</td>
<td>Broadmeadow-Hamilton North (27%)</td>
<td>Merewether Heights (0%)</td>
</tr>
<tr>
<td>Lambton (32%)</td>
<td>Hamilton South - Hamilton East (26%)</td>
<td></td>
</tr>
<tr>
<td>Mayfield East (32%)</td>
<td>Carrington (26%)</td>
<td></td>
</tr>
<tr>
<td>Mayfield West (32%)</td>
<td>Maryville-Wickham (26%)</td>
<td></td>
</tr>
<tr>
<td>Mayfield (32%)</td>
<td>The Junction (25%)</td>
<td></td>
</tr>
<tr>
<td>Kotara (31%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Lambton (31%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waratah (31%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Georgetown (31%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Source: .id social atlas 2018)
6. NEWCASTLE’S HOUSING SUPPLY

The Study considered a range of factors influencing housing supply across the Newcastle LGA. This included the collection of data to estimate what housing is already available, and what is already in the ‘pipeline’ for delivery. It also involved considering the housing supply from a longer-term perspective by looking at the capacity and feasibility of new housing supply being delivered within the LGA over the next 20 years, based on Newcastle’s current planning controls.

Comparing current and future housing demand, with housing supply allowed for the identification of housing supply gaps recommended to be addressed in Council’s Local Housing Strategy. This includes consideration for groups known to have specific housing needs, which are discussed in Section 7.

KEY INSIGHTS

- Census data showed Newcastle had around 69,250 dwellings in 2016. The housing stock, at the time, was predominately made up of detached dwellings (69%), followed by attached dwellings (1-2 storeys) (22%) and attached dwellings (3+ storeys) (8%).
- ABS data suggests the composition of Newcastle’s housing stock is changing quickly. Since 2016, around 75% of all buildings approved were attached dwellings.
- A study completed by DPIE estimated that, at mid-2017, the planning controls applying in the Newcastle LGA would allow the market to, in theory, create 60,000 additional dwellings. This is three times the number of dwellings expected to be required by 2041 based on current underlying demand projections. Of this theoretical capacity:
  - 92% is in ‘infill’ areas, and 8% in ‘greenfield’ areas.
  - 44% is assumed to be dual occupancy housing in the R2 Low Density Residential zone.
- Data prepared as part of the Study showed that between August 2016 (the Census date) and August 2019 there were 9,150 new dwellings in the supply pipeline. Around 7,500 (82%) of the pipeline supply is in infill areas.
- Of the pipeline supply, 4,600 dwellings were already built or were under construction at August 2019, which suggests the LGA has already exceeded the number of dwellings expected to be required by 2021, based on underlying demand.
- Based on the pipeline supply still considered unconstructed (e.g. DA approved or under assessment) as of August 2019, the LGA is also on track to meet the implied dwelling demand to 2026. However, the distribution of this supply shows some areas are growing faster than projections expected.
6.1. Current Housing Stock

In 2016, on Census night there were around 69,250 dwellings recorded in the Newcastle LGA. This figure includes both private and public dwellings.

Figure 16 shows the proportion of Newcastle’s housing stock by dwelling type. This highlights that the housing stock is currently dominated by detached dwellings, with over two-thirds being of this type. Of the attached dwelling types, the majority are attached up to 2 storeys, which is characteristic of ‘low rise medium density’ housing.

Figure 16. Proportion of dwelling types within the Newcastle LGA (2016)

(Source: .id profile 2018)

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28 ID Profile, Forecast Dwellings and Development May 2018 (uses ABS Census 2016 data and includes both private and public dwellings)
Table 14 breaks down the housing stock by type for separate areas across the LGA. This illustrates that, despite the predominance of detached dwellings across the whole of the LGA, there are some areas where it is not as prevalent. This tends to be Newcastle’s inner suburban areas, particularly those with historic terraces, such as Newcastle East and Cooks Hill. Apartment blocks of 3 or more storeys are primarily concentrated within Newcastle’s City Centre (the Newcastle – Newcastle East – Newcastle West area) and some inner suburban areas.

Newcastle’s outer suburbs (both infill and greenfield areas) offer a lower order of housing diversity. These typically consist of nearly all (80% or more) detached dwellings.

<table>
<thead>
<tr>
<th>Area</th>
<th>No. dwellings</th>
<th>Detached</th>
<th>Attached (1-2)</th>
<th>Attached (3+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newcastle – Newcastle East – Newcastle West</td>
<td>2,913</td>
<td>4%</td>
<td>18%</td>
<td>78%</td>
</tr>
<tr>
<td>The Hill</td>
<td>1,150</td>
<td>12%</td>
<td>48%</td>
<td>39%</td>
</tr>
<tr>
<td>Cooks Hill</td>
<td>2,009</td>
<td>19%</td>
<td>59%</td>
<td>22%</td>
</tr>
<tr>
<td>Bar Beach – The Junction</td>
<td>1,100</td>
<td>34%</td>
<td>42%</td>
<td>24%</td>
</tr>
<tr>
<td>Maryville - Wickham</td>
<td>1,358</td>
<td>47%</td>
<td>39%</td>
<td>9%</td>
</tr>
<tr>
<td>Jesmond</td>
<td>1,269</td>
<td>47%</td>
<td>41%</td>
<td>12%</td>
</tr>
<tr>
<td>Hamilton</td>
<td>2,083</td>
<td>58%</td>
<td>34%</td>
<td>4%</td>
</tr>
<tr>
<td>Hamilton South – Hamilton East</td>
<td>2,376</td>
<td>59%</td>
<td>20%</td>
<td>21%</td>
</tr>
<tr>
<td>Carrington</td>
<td>981</td>
<td>62%</td>
<td>35%</td>
<td>3%</td>
</tr>
<tr>
<td>Merewether – Merewether Heights</td>
<td>5,521</td>
<td>63%</td>
<td>28%</td>
<td>9%</td>
</tr>
<tr>
<td>Adamstown</td>
<td>2,681</td>
<td>67%</td>
<td>28%</td>
<td>5%</td>
</tr>
<tr>
<td>Georgetown - Waratah</td>
<td>2,995</td>
<td>68%</td>
<td>28%</td>
<td>4%</td>
</tr>
<tr>
<td>Islington – Tighes Hill</td>
<td>1,726</td>
<td>71%</td>
<td>26%</td>
<td>3%</td>
</tr>
<tr>
<td>Mayfield West - Warabrook</td>
<td>1,630</td>
<td>72%</td>
<td>28%</td>
<td>0%</td>
</tr>
<tr>
<td>Broadmeadow – Hamilton North</td>
<td>1,249</td>
<td>73%</td>
<td>24%</td>
<td>3%</td>
</tr>
<tr>
<td>Lambton</td>
<td>2,227</td>
<td>74%</td>
<td>25%</td>
<td>1%</td>
</tr>
<tr>
<td>Mayfield – Mayfield East</td>
<td>5,217</td>
<td>75%</td>
<td>24%</td>
<td>1%</td>
</tr>
<tr>
<td>Shortland - Sandgate</td>
<td>1,815</td>
<td>78%</td>
<td>21%</td>
<td>1%</td>
</tr>
<tr>
<td>Stockton</td>
<td>1,820</td>
<td>79%</td>
<td>18%</td>
<td>1%</td>
</tr>
<tr>
<td>Wallsend</td>
<td>5,538</td>
<td>79%</td>
<td>20%</td>
<td>1%</td>
</tr>
<tr>
<td>New Lambton – New Lambton Heights</td>
<td>4,776</td>
<td>80%</td>
<td>19%</td>
<td>1%</td>
</tr>
<tr>
<td>Birmingham Gardens - Callaghan</td>
<td>984</td>
<td>82%</td>
<td>14%</td>
<td>4%</td>
</tr>
<tr>
<td>Elermore Vale – Rankin Park</td>
<td>2,760</td>
<td>83%</td>
<td>17%</td>
<td>0%</td>
</tr>
<tr>
<td>North Lambton</td>
<td>1,411</td>
<td>85%</td>
<td>15%</td>
<td>0%</td>
</tr>
<tr>
<td>Waratah West</td>
<td>1,144</td>
<td>89%</td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td>Kotara</td>
<td>1,700</td>
<td>90%</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>Beresfield – Tarro - NER</td>
<td>2,406</td>
<td>91%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Maryland</td>
<td>2,838</td>
<td>92%</td>
<td>8%</td>
<td>0%</td>
</tr>
<tr>
<td>Adamstown Heights</td>
<td>1,718</td>
<td>96.5%</td>
<td>3.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Fletcher - Minmi</td>
<td>1,850</td>
<td>98%</td>
<td>2%</td>
<td>0%</td>
</tr>
</tbody>
</table>

(Source: Adapted from .id community profile 2018)
6.1.1. Available Number of Bedrooms

Figure 17 identifies the typical size of dwellings available within the current housing stock by number of bedrooms. This indicator was chosen as it is known to be an important deciding factor for households when choosing a home.

In 2016, the Newcastle LGA’s housing stock was predominantly made up of larger dwellings, with around two-thirds of homes having 3 or more bedrooms.

Comparing this with historic data showed that, between 2006 and 2016, the proportion of 4 and 5-bedroom dwellings increased, while the proportion of 2-bedroom dwellings decreased. This change is partly attributed to the large number of ‘family houses’ constructed in outer greenfield suburbs such as Fletcher-Minmi over that time period. Other factors contributing to this spike in larger dwelling sizes also include additions to existing 2 and 3 bedroom homes in established suburbs such as Merewether and New Lambton for family housing, and also in areas around the University of Newcastle such as Birmingham Gardens, Waratah West and Jesmond for student housing.

(Source: .id community profile. 2018)
6.1.2. Rental Vacancy Rates

Rental vacancy rates provide an indication of the available supply of rental housing in the private rental market. As a benchmark, a vacancy rate of 3% is generally reflective of a good balance between supply and demand. A vacancy rate below 3% indicates an undersupply.

Rental vacancy rates as of mid-2018 across the Newcastle LGA generally suggest an undersupply, with nearly all suburbs experiencing a rental vacancy rate below 3%. These figures only account for dwellings within the private rental market and do not account for short-term (e.g. holiday) rentals.

Those suburbs with the lowest rental vacancy rates are illustrated in Table 15, the vacancy rates indicate a chronic undersupply of available rental housing in these areas. The only suburbs with a rental vacancy rate above 3% were Newcastle West (6%) and Shortland (3%), which either indicates that these areas have adequate supply of rental housing, or that the available rental housing in these areas is not meeting the needs of the market and people are choosing to rent elsewhere.

<table>
<thead>
<tr>
<th>Suburbs with the lowest rental vacancy rate (1 - 1.4%)</th>
<th>Suburbs with the middle rental vacancy rate (1.5 - 1.9%)</th>
<th>Suburbs with the highest rental vacancy rate (2 - 6%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrington</td>
<td>Kooragang</td>
<td>Maryville - Wickham</td>
</tr>
<tr>
<td>New Lambton</td>
<td>Mayfield - Mayfield East</td>
<td>Georgetown - Waratah</td>
</tr>
<tr>
<td>New Lambton Heights</td>
<td>Mayfield North</td>
<td>Waratah West</td>
</tr>
<tr>
<td>Hamilton</td>
<td>Mayfield West - Warabrook</td>
<td>Islington</td>
</tr>
<tr>
<td>Hamilton South</td>
<td>Sandgate</td>
<td>Bar Beach</td>
</tr>
<tr>
<td>Hamilton East</td>
<td>Broadmeadow</td>
<td>Cooks Hill</td>
</tr>
<tr>
<td>Adamstown</td>
<td>Hamilton North</td>
<td>Newcastle</td>
</tr>
<tr>
<td>Adamstown Heights</td>
<td>Beresfield - Tarro</td>
<td>Newcastle East</td>
</tr>
<tr>
<td>Kotara</td>
<td>NER</td>
<td>The Hill</td>
</tr>
<tr>
<td>Merewether</td>
<td>Tighes Hill</td>
<td>Jesmond</td>
</tr>
<tr>
<td>Merewether Heights</td>
<td>Stockton</td>
<td>Lambton</td>
</tr>
<tr>
<td>The Junction</td>
<td>Birmingham Gardens</td>
<td>North Lambton</td>
</tr>
<tr>
<td></td>
<td>Elermore Vale - Rankin Park</td>
<td>Shortland</td>
</tr>
<tr>
<td></td>
<td>Fletcher – Minmi</td>
<td>Newcastle West</td>
</tr>
<tr>
<td></td>
<td>Maryland</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wallsend</td>
<td></td>
</tr>
</tbody>
</table>

(Source: PRD Nationwide 2019)
6.1.3. Dwelling Vacancy Rates

The dwelling vacancy rate is the supply of unoccupied housing in an area on Census night. Comparing the 2016 Census night dwelling vacancy rate of the Newcastle LGA (9.4%) and NSW (9.3%) indicates that the Newcastle LGA has a similar vacancy rate to broader NSW.

Dwellings can be vacant for a range of reasons, including being in poor (e.g. uninhabitable) condition, used as holiday home (personally or through short-term rental arrangements), or temporarily unoccupied whilst being listed for sale/rent.

Dwelling vacancy rates vary across Newcastle’s community profile areas. Figure 18 lists the 10 areas with the highest dwelling vacancy rates as of 2016. Dwelling vacancy rates in these areas remained high throughout 2018 and 2019.

Most of the areas with a high rate of vacant dwellings are in Newcastle’s City Centre and inner suburbs, which have seen a high rate of apartments constructed over the last five years. This suggests dwelling vacancy rates may, in part, be due to a proportion of stock being listed for sale or rent as new projects are completed.

These areas also tend to have a higher level of amenity, which suggests a significant proportion of apartments in these areas may be occupied part-time, but not used as a primary residence. This appears to be substantiated by availability of short-term (holiday) rentals, with over 300 listings in these areas on popular holiday-rental websites as of 2019.

![Figure 18. Areas in the Newcastle LGA with the highest dwelling vacancy rates (mid-2016)](image)

(Source: Adapted from .id social atlas 2018)
6.2. Housing Capacity

In mid-2017, DPIE completed a modelling exercise to estimate the theoretical capacity for additional dwellings in the Newcastle LGA under planning controls applying at the time. This found that the Newcastle LGA had the potential to, in theory, create around 60,000 additional dwellings, or 15% of the entire Hunter region’s total dwelling capacity.

This theoretical capacity is also over three times the total number of dwellings projected to be required within the LGA (19,450 dwellings) by 2041, based on underlying demand.

DPIE’s study assumed the market would deliver the ‘best and highest’ residential use available within each zone. This generally assumed residential growth would predominantly occur through:

- The creation of new residential lots through subdivisions in urban release areas and, to a lower level areas zoned R2 Low Density Residential;
- Intensification through dual occupancy lot developments in the R2 Low Density Residential zone exclusively;
- Townhouse developments in the R3 Medium Density Residential zone exclusively; and
- Residential flat building developments in the R4 High Density Residential zone and Business zones.

Figure 19 breaks down the total estimated housing capacity by dwelling type, based on these assumptions. This highlights the heavy reliance of this capacity on the delivery of dual occupancy housing in areas zoned R2 Low Density Residential (44% of the theoretical capacity) and townhouses in the R3 Medium Density Residential zone (22% of the theoretical capacity).

---

29 DPIE 2017b
DPIE’s study also considered whether development was likely to occur as infill or greenfield development. The study defined “greenfield” as land identified as an ‘Urban Release Area’ under Council’s LEP. This may have resulted in the development capacity of areas typically considered to be greenfield (e.g., previously undeveloped for any urban use) to be counted as infill.

Figure 20 presents DPIE’s estimations of the dwelling capacity for greenfield (urban release area) areas and infill areas (by zone). This found the primary source of additional dwelling capacity (92% of all additional dwellings modelled) to be infill areas, with a theoretical potential to provide around 55,250 new dwellings. Achieving this level of growth would rely on half of all residential growth in infill areas occurring as attached dwellings, and nearly half (44%) of the remaining growth occurring as dual occupancy in the R2 Low Density Residential zones.

DPIE found Newcastle’s greenfield (urban release areas) areas had the theoretical potential to deliver around 5,000 dwellings, or 8% of the total estimated dwelling capacity. This supply is assumed to be exclusively delivered through residential subdivisions for, presumably, detached dwellings.

On review, the Study found that, although DPIE’s modelling suggests the Newcastle LGA has the theoretical capacity to deliver three times its projected dwelling requirements to 2041, the likelihood of achieving this level of growth in full relies on the ability and appetite of the market to deliver medium and higher density projects in established areas.
6.3. Housing Supply in the ‘Pipeline’

The housing supply ‘pipeline’ estimates the number of new dwellings expected to become available in the marketplace. Estimating this supply draws on data to identify where new dwellings have recently been constructed, are currently under construction, have been approved for construction, or are under assessment (and so may be constructed, subject to approval).

Analysing ‘pipeline’ housing supply provides insights as to where, when, and how many new dwellings are likely to be built. While some pipeline supply data was available for the Newcastle LGA, the Study identified there was no reliable data at the suburb level. This limited the extent to which spatial analysis could be undertaken. This information is necessary to track whether new housing supply is likely to meet the implied demand for new dwellings, as discussed in Section 5.1 of this Report.

To fill this gap, the project team completed a housing supply audit in early-August 2019. This involved a review of Development Applications (DAs) approved or under assessment since August 2014, noting most approvals are afforded a 5-year timeframe to commence construction. Complying Development Certificates (CDCs) were reviewed dating back to 2016 noting these are more likely to proceed to construction within a year or so. The audit relied on desktop methods to identify where new dwellings had been constructed since mid-August 2016, to align with the Census date when the number of dwellings in each suburb was recorded, and which has been used as the basis for current population and household projections.

Table 16 presents the findings of this audit.

**Housing supply audit approach**

The supply audit reviewed all DAs and CDCs listed on Council’s online DA Tracker and the NSW Planning Panels online Development and Planning Register. Dwellings built or under construction were determined by analysing current aerial imagery available on NearMap.

Dwellings were categorised as:

- **Built/ under construction**, where DA consent had been granted since August 2014 and they either appeared to have been built since 2016 or appeared to be under construction at the time of the audit (mid-August 2019). Dwellings that were approved to be demolished were subtracted from the number of dwellings approved to be created.

- **DA approved**, where DA consent had been granted since August 2014, but no construction activities were apparent. Dwellings that were approved to be demolished were subtracted from the number of dwellings approved to be created.

- **Under assessment**, where a DA was lodged, but not determined as of August 2019. Dwellings that would be demolished, subject to approval, were subtracted from the number of dwellings proposed to be created.

- **CDC Approved**, where a CDC has been issued between August 2016 and August 2019. This included dwellings that had been approved and those that appeared to have been built or were under construction.

Each new dwelling was attributed to its relevant community profile area (id area) to provide consistency in comparing data with other population and housing data or projections.
Table 16. Pipeline housing supply in the Newcastle LGA (August 2016 - August 2019)

<table>
<thead>
<tr>
<th>.id area</th>
<th>Built / Under Construction</th>
<th>DA Approved</th>
<th>DA under Assessment</th>
<th>CDC Approved</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adamstown</td>
<td>105</td>
<td>262</td>
<td>16</td>
<td>6</td>
<td>389</td>
</tr>
<tr>
<td>Adamstown Heights</td>
<td>25</td>
<td>33</td>
<td>0</td>
<td>3</td>
<td>61</td>
</tr>
<tr>
<td>Bar Beach – The Junction</td>
<td>5</td>
<td>13</td>
<td>15</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>Beresfield – Tarro - NER</td>
<td>42</td>
<td>28</td>
<td>4</td>
<td>6</td>
<td>80</td>
</tr>
<tr>
<td>Birmingham Gardens - Callaghan</td>
<td>53</td>
<td>27</td>
<td>1</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>Broadmeadow – Hamilton North</td>
<td>78</td>
<td>40</td>
<td>86</td>
<td>1</td>
<td>205</td>
</tr>
<tr>
<td>Carrington</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Cooks Hill</td>
<td>34</td>
<td>2</td>
<td>65</td>
<td>0</td>
<td>101</td>
</tr>
<tr>
<td>Elermore Vale – Rankin Park</td>
<td>321</td>
<td>105</td>
<td>55</td>
<td>7</td>
<td>488</td>
</tr>
<tr>
<td>Fletcher - Minmi</td>
<td>327</td>
<td>16</td>
<td>0</td>
<td>212</td>
<td>555</td>
</tr>
<tr>
<td>Georgetown – Waratah</td>
<td>87</td>
<td>113</td>
<td>7</td>
<td>8</td>
<td>215</td>
</tr>
<tr>
<td>Hamilton</td>
<td>103</td>
<td>27</td>
<td>57</td>
<td>1</td>
<td>188</td>
</tr>
<tr>
<td>Hamilton South – Hamilton East</td>
<td>7</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Islington – Tighes Hill</td>
<td>98</td>
<td>71</td>
<td>0</td>
<td>3</td>
<td>172</td>
</tr>
<tr>
<td>Jesmond</td>
<td>8</td>
<td>142</td>
<td>6</td>
<td>5</td>
<td>161</td>
</tr>
<tr>
<td>Kotara</td>
<td>36</td>
<td>27</td>
<td>18</td>
<td>2</td>
<td>83</td>
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</table>

<table>
<thead>
<tr>
<th>.id area</th>
<th>Built / Under Construction</th>
<th>DA Approved</th>
<th>DA under Assessment</th>
<th>CDC Approved</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lambton</td>
<td>39</td>
<td>28</td>
<td>1</td>
<td>11</td>
<td>77</td>
</tr>
<tr>
<td>Maryland</td>
<td>31</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>43</td>
</tr>
<tr>
<td>Maryville - Wickham</td>
<td>552</td>
<td>293</td>
<td>232</td>
<td>0</td>
<td>1,077</td>
</tr>
<tr>
<td>Mayfield – Mayfield East</td>
<td>216</td>
<td>142</td>
<td>67</td>
<td>6</td>
<td>431</td>
</tr>
<tr>
<td>Mayfield West - Warabrook</td>
<td>10</td>
<td>9</td>
<td>0</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Merewether – Merewether Heights</td>
<td>72</td>
<td>32</td>
<td>12</td>
<td>6</td>
<td>122</td>
</tr>
<tr>
<td>New Lambton – New Lambton heights</td>
<td>93</td>
<td>36</td>
<td>6</td>
<td>4</td>
<td>139</td>
</tr>
<tr>
<td>Newcastle – Newcastle East – Newcastle West</td>
<td>1545</td>
<td>1028</td>
<td>369</td>
<td>0</td>
<td>2942</td>
</tr>
<tr>
<td>North Lambton</td>
<td>214</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td>237</td>
</tr>
<tr>
<td>Shortland - Sandgate</td>
<td>281</td>
<td>46</td>
<td>33</td>
<td>12</td>
<td>372</td>
</tr>
<tr>
<td>Stockton</td>
<td>37</td>
<td>17</td>
<td>1</td>
<td>2</td>
<td>57</td>
</tr>
<tr>
<td>The Hill</td>
<td>3</td>
<td>1</td>
<td>172</td>
<td>0</td>
<td>176</td>
</tr>
<tr>
<td>Wallsend</td>
<td>165</td>
<td>142</td>
<td>246</td>
<td>26</td>
<td>579</td>
</tr>
<tr>
<td>Waratah West</td>
<td>11</td>
<td>9</td>
<td>1</td>
<td>11</td>
<td>32</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4,604</td>
<td>2,721</td>
<td>1,475</td>
<td>352</td>
<td>9,152</td>
</tr>
</tbody>
</table>

(Source: CPSD utilising data from CN 2019 DA Tracker, DPIE Development and Planning Register 2019 and NearMap)
The audit estimated that around 4,600 new dwellings had been built since August 2016 or were under construction as of August 2019. This suggests the Newcastle LGA has already delivered the total number of additional dwellings expected to be required by 2021, based on current projections (discussed in Section 5.1).

An additional 4,500 dwellings are estimated to remain in the pipeline (e.g. DA approved or under assessment). While there is less certainty about the delivery of this supply, it does suggest the LGA is on track to achieving its implied dwelling demand to 2026. If current construction and approval rates continue, this demand could also be exceeded earlier than projections had expected.

### 6.3.1. Greenfield vs Infill Housing Supply in the Pipeline

It is widely recognised that the Newcastle LGA has a limited availability of additional greenfield land that would be suitable for urban / residential rezoning, particularly when compared to the other Greater Newcastle LGAs (Cessnock, Lake Macquarie, Maitland, and Port Stephens). This means that the majority of Newcastle’s residential growth will be reliant on supply emerging within established suburbs and existing (already zoned) urban release areas.

The Study’s housing supply audit estimated around 18% (1,650) of the pipeline supply was, or will be, new dwellings being delivered in greenfield areas. The remaining 82% (7,500) of pipeline supply was, or will be, new dwellings in existing infill areas. This ratio far exceeds the metropolitan-wide target identified within the Greater Newcastle Metropolitan Plan for 60% of new housing to be delivered through infill.

**Housing supply audit approach**

The housing supply audit categorised an area as ‘greenfield’ if it was a parcel of land that had not previously been subject to urban development (e.g. residential, commercial, or industrial). The suburbs of Fletcher and Minmi were generally categorised greenfield suburbs. Larger parcels of residential-zoned land in areas such as Elermore Vale, North Lambton, Shortland and Wallsend were also recognised as greenfield areas. Smaller subdivisions (fewer than 5 dwellings) were not considered greenfield.
6.3.3. Dwelling Types in the Pipeline

The Study’s housing supply audit did not distinguish between dwelling types, although this data could be supplemented in future.

Based on building approvals data (presented in Figure 21), the mix of dwelling types in the Newcastle LGA is changing, with a much higher proportion of attached dwellings expected to be built compared with detached dwellings. Between 2016-2019, the number of new attached dwellings has generally been more than double the number of new detached dwellings. This was particularly relevant in 2017-2018, when Newcastle experienced an ‘apartment boom’ in and around the City Centre. Over the last year, apartment approvals have slowed in line with a national downturn in the property market and, in part, due to the introduction of more restrictions to accessing finance. The proportion of lower risk developments such as detached dwellings and attached dual occupancies has remained relatively consistent.

DPIE’s completed an audit of infill housing pipeline supply for the whole of the LGA in April 2018. This found that 69% of infill housing supply was being delivered through attached dwellings (3+ storeys), 30.5% through attached dwellings (1-2 storeys), and only 0.5% through detached dwellings as shown in Figure 22. This reinforces the likelihood that detached dwelling supply is expected to dwindle, particularly as greenfield land in the Newcastle LGA is exhausted.

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30 DPIE 2018b, Greater Newcastle’s Infill Development p. 12
6.4. Housing Supply Over the Long Term

Underlying dwelling demand projections (presented in Section 5.1) provide an estimate of how many dwellings are likely to be needed to accommodate population and household changes. Residential development forecasts provide an estimate of the likely number of new dwellings that will be built, based on the current rate of development activity, dwelling approvals and the potential for residential infill and greenfield development.

Forecasting the future level of residential development over the long term is complex. It is influenced by multiple factors, including the capacity of land use controls, development feasibility, housing market conditions, the achievable rate of development activity (e.g. approvals and constructions), and population growth drivers influencing underlying housing demand.

The Study relied on residential development forecasts prepared by .id, in consultation with Council’s planners, which provided an indication of new housing supply over the long term. These estimate around 19,500 new dwellings will be built in the Newcastle LGA between 2016 and 2041, which broadly aligns with the theoretical demand for 19,450 new dwellings over this same period.

Comparing this data with the Study’s housing supply audit findings, provided insight into how development activity (approvals and construction) across the Newcastle LGA is tracking against forecasted residential development. A summary of this comparison for each area in the Newcastle LGA is shown in Table 16. These forecasts also provided an indication of where new residential development is expected to be sustained at current rates (e.g. Wickham and Newcastle - Newcastle East - Newcastle West), take off (e.g. Adamstown and Jesmond), or slow down (Fletcher - Minmi and North Lambton).

Overall, residential development forecasts expect, on average, around 900 new dwellings to be built each year between 2016 and 2021. The Study’s housing supply audit suggests that the residential development activity is occurring at over 1,000 new dwellings per annum, which is substantially higher than forecasted.

Comparing pipeline supply with residential development forecasts

Housing supply audit data for Built/Under Construction and CDC Approved dwellings were combined to identify the estimated total number of ‘supplied dwellings’ for comparison with residential development forecasts.

To clarify, a ‘supplied dwelling’ identified in Table 17 was counted

- where DA consent had been granted since August 2014 and they either appeared to have been built since 2016 or appeared to be under construction at the time of the audit (mid-August 2019). Dwellings that were approved to be demolished were subtracted from the number of dwellings approved to be created; or
- where a CDC has been issued between August 2016 and August 2019. This included dwellings that had been approved and those that appeared to have been built or were under construction.

Dwellings counted as ‘additional pipeline supply’ in Table 17 combine housing supply audit data for:

- DA approved, where DA consent had been granted since August 2014, but no construction activities were apparent. Dwellings that were approved to be demolished were subtracted from the number of dwellings approved to be created.
- Under assessment, where a DA was lodged, but not determined as of August 2019. Dwellings that would be demolished, subject to approval, were subtracted from the number of dwellings proposed to be created.
<table>
<thead>
<tr>
<th>ID area</th>
<th>Supplied dwelling (2016-2019)</th>
<th>ID new dwellings forecast 2016 to 2041</th>
<th>Difference</th>
<th>Additional pipeline supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adamstown</td>
<td>111</td>
<td>940</td>
<td>829</td>
<td>278</td>
</tr>
<tr>
<td>Adamstown Heights</td>
<td>28</td>
<td>98</td>
<td>70</td>
<td>33</td>
</tr>
<tr>
<td>Bar Beach – The Junction</td>
<td>6</td>
<td>205</td>
<td>199</td>
<td>28</td>
</tr>
<tr>
<td>Beresfield – Tarro NER</td>
<td>48</td>
<td>253</td>
<td>205</td>
<td>32</td>
</tr>
<tr>
<td>Birmingham Gardens – Callaghan</td>
<td>62</td>
<td>106</td>
<td>44</td>
<td>28</td>
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<tr>
<td>Broadmeadow – Hamilton North</td>
<td>79</td>
<td>974</td>
<td>895</td>
<td>126</td>
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<tr>
<td>Carrington</td>
<td>6</td>
<td>50</td>
<td>44</td>
<td>5</td>
</tr>
<tr>
<td>Cooks Hill</td>
<td>34</td>
<td>259</td>
<td>225</td>
<td>67</td>
</tr>
<tr>
<td>Elermore Vale – Rankin Park</td>
<td>328</td>
<td>1,716</td>
<td>1,388</td>
<td>160</td>
</tr>
<tr>
<td>Fletcher – Minmi</td>
<td>539</td>
<td>2,376</td>
<td>1,837</td>
<td>16</td>
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<tr>
<td>Georgetown – Waratah</td>
<td>95</td>
<td>326</td>
<td>231</td>
<td>120</td>
</tr>
<tr>
<td>Hamilton</td>
<td>104</td>
<td>406</td>
<td>302</td>
<td>84</td>
</tr>
<tr>
<td>Hamilton South – Hamilton East</td>
<td>8</td>
<td>230</td>
<td>222</td>
<td>6</td>
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<tr>
<td>Islington – Tighes Hill</td>
<td>96</td>
<td>314</td>
<td>218</td>
<td>71</td>
</tr>
<tr>
<td>Jesmond</td>
<td>13</td>
<td>72</td>
<td>99</td>
<td>148</td>
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</table>

<table>
<thead>
<tr>
<th>ID area</th>
<th>Supplied dwelling (2016-2019)</th>
<th>ID new dwellings forecast 2016 to 2041</th>
<th>Difference</th>
<th>Additional pipeline supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kotara</td>
<td>38</td>
<td>467</td>
<td>429</td>
<td>45</td>
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<tr>
<td>Lambton</td>
<td>50</td>
<td>102</td>
<td>52</td>
<td>27</td>
</tr>
<tr>
<td>Maryland</td>
<td>36</td>
<td>141</td>
<td>105</td>
<td>7</td>
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<tr>
<td>Maryville - Wickham</td>
<td>552</td>
<td>1,430</td>
<td>878</td>
<td>525</td>
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<tr>
<td>Mayfield – Mayfield East</td>
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<td>1,368</td>
<td>1,146</td>
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<tr>
<td>Mayfield West – Warabrook</td>
<td>12</td>
<td>50</td>
<td>38</td>
<td>9</td>
</tr>
<tr>
<td>Merewether – Merewether Heights</td>
<td>78</td>
<td>356</td>
<td>278</td>
<td>44</td>
</tr>
<tr>
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<td>42</td>
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<td>2,922</td>
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<tr>
<td>North Lambton</td>
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<td>255</td>
<td>39</td>
<td>21</td>
</tr>
<tr>
<td>Shortland - Sandgate</td>
<td>293</td>
<td>464</td>
<td>171</td>
<td>79</td>
</tr>
<tr>
<td>Stockton</td>
<td>39</td>
<td>150</td>
<td>111</td>
<td>16</td>
</tr>
<tr>
<td>The Hill</td>
<td>3</td>
<td>75</td>
<td>72</td>
<td>173</td>
</tr>
<tr>
<td>Wallsend</td>
<td>191</td>
<td>1,319</td>
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<td>Waratah West</td>
<td>22</td>
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<td>34</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>4,951</td>
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<td>14,551</td>
<td>4,194</td>
</tr>
</tbody>
</table>
Table 18 provides a comparison of areas where residential development appears to be happening faster or slower than forecasts expected, based on recent (2016-19) supply rates. This comparison is also illustrated on the maps provided in Figure 23 and Figure 24.

Most of the areas tracking furthest ahead of forecasted levels are in Newcastle’s established outer suburbs. Areas within or surrounding Newcastle City Centre are also tracking ahead of forecasted levels, which is reflective of the popularity of these high amenity areas.

Further investigation is warranted for areas tracking below their forecasted levels, particularly where these have achieved 15% or less of their total forecasted supply. The lower level of supply may indicate a persistent or unforeseen blockage.

Table 18. Comparison of new housing supply and residential development forecasts by areas in the Newcastle LGA (2016-2019)

<table>
<thead>
<tr>
<th>Areas with significantly more residential development than forecast</th>
<th>Areas with a slightly higher level of residential development than forecast</th>
<th>Areas with a similar level of residential development than forecast</th>
<th>Areas with a lower level of residential development than forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>35%+ of 25 year residential development forecast</td>
<td>25% - 35% of 25 year residential development forecast</td>
<td>20% - 25% of 25 year residential development forecast</td>
<td>Less than 20% of 25 year residential development forecast</td>
</tr>
<tr>
<td>North Lambton (84%)</td>
<td>Newcastle-Newcastle East - Newcastle West (34%)</td>
<td>Mayfield West - Warabrook (24%)</td>
<td>Elermore Vale - Rankin Park (19%)</td>
</tr>
<tr>
<td>Shortland – Sandgate (63%)</td>
<td>Islington - Tighes Hill (30%)</td>
<td>Fletcher - Minmi (22%)</td>
<td>Jesmond (18%)</td>
</tr>
<tr>
<td>Birmingham gardens – Callaghan (58%)</td>
<td>Georgetown - Waratah (29%)</td>
<td>Merewether - Merewether Heights (21%)</td>
<td>Beresfield - Tarro - NER (18%)</td>
</tr>
<tr>
<td>Lambton (49%)</td>
<td>Adamstown Heights (28%)</td>
<td>New Lambton - New Lambton heights (20%)</td>
<td>Mayfield - Mayfield East (16%)</td>
</tr>
<tr>
<td>Waratah West (39%)</td>
<td>Stockton (26%)</td>
<td>Mayfield West - Warabrook (24%)</td>
<td>Wallsend (14%)</td>
</tr>
<tr>
<td>Maryville - Wickham (38%)</td>
<td>Hamilton (25%)</td>
<td>Fletcher - Minmi (22%)</td>
<td>Cooks Hill (13%)</td>
</tr>
</tbody>
</table>

(Source: CPSD housing supply audit 2019 and .id population forecast 2018)
Figure 23. Map of ‘supplied dwellings’ by community profile area (August 2016- August 2019)

New dwellings built, under construction or approved as CDCs 2016-2019
(Source: CPSD housing supply audit 2019)
Figure 24. How housing supply (2016 - 2019) is tracking against .id's residential development forecasts between 2016 and 2041

(Source: adapted from CPSD housing supply audit 2019 and .id population forecast 2018)
7. HOUSING FOR SPECIFIC NEEDS

An aim for planning is to ensure all residents within the Newcastle LGA should have access to housing that meets their specific needs. This includes considerations for affordability, tenure, integrated services, and/or design. This section discusses cohorts that are considered most likely to experience barriers to accessing housing that meets their needs, based on existing evidence. This includes separate considerations for housing specifically catering for:

- Very low to moderate income households (social and affordable housing as defined below);
- Seniors, including those with additional care needs;
- Non-seniors with additional care needs; and
- Students.

The purpose of this discussion is to consider pathways to alleviating the instance of housing stress (defined previously in this Report) within the LGA. Groups most likely to be under housing stress include people who are unemployed/underemployed, students, seniors on a pension, and residents with a disability. Many of the community’s key workers (people who work in essential services required by a community such as a nurse or childcare workers) also fall into the low to moderate income brackets and experience housing stress including those employed in healthcare and social assistance, retail, hospitality, cleaning and other similar services.

There may be other cohorts of the community that were not included in the scope of this Study but would benefit from a focused consideration of their housing needs. This includes but is not necessarily limited to: Aboriginal and Torres Strait Islanders; people seeking temporary, emergency, or supported crisis accommodation; and people seeking lower-cost or lower-impact forms of housing such as cooperative/communal housing or tiny homes. CPSD recommend these groups are considered in future studies to inform strategic planning and plan-making.

KEY INSIGHTS

- There is a significant unmet need for social and affordable housing units within the LGA. The Housing Strategy will need to consider suitable mechanisms to address this supply gap, particularly in locations accessible to relevant jobs, services and public transport.
- The current pipeline supply of dedicated seniors housing appears to be keeping pace with projected growth. However, there may be unmet and growing demand for two and three bedroom attached dwellings, which local seniors prefer to ‘age in place’. The Housing Strategy should consider opportunities to encourage this type of housing, particularly in well-serviced and walkable locations in Newcastle’s middle and outer suburbs.
- Further investigation is required to better understand and quantify the housing requirements to support younger (non-senior) residents with additional care needs. The Housing Strategy should consider the range of opportunities that would support residents to live as independently as possible given their level of care needs. This may include living at home with a carer, living independently (or partly assisted), or living in a managed group home or care facility.
- There is likely to be an unmet demand for more affordable student accommodation options. This also requires further investigation to quantify, particularly given the recent growth in tertiary education and university services within Newcastle City Centre. The Housing Strategy should consider opportunities to encourage affordable student housing in locations that are walkable or otherwise readily accessible by public transport to both Newcastle City Centre and the university campus at Callaghan.
7.1. Limited Income Households

**KEY TERMS**

**Social housing** is secure and affordable rental housing available to households on a very low or low income that are unable to access suitable accommodation in the private rental market.

Social housing encompasses:
- Public housing, which is funded and delivered by government;
- Community housing, which is subsidised by government but delivered and managed by not-for-profit housing organisations; and
- Aboriginal housing, which is owned by the Aboriginal Housing Office.

**Affordable housing** is secure and affordable housing available to a broader range of household incomes (very low to moderate) that struggle to access suitable housing in the private rental market. This is sometimes the case for “key workers” who are required to live in areas where private rents may be prohibitive in order to be close to their place of work.

Affordable housing is managed more like private rental property, but there are eligibility requirements as with social housing. Affordable housing stock is generally managed by not-for-profit community housing providers and rents are often set at a discount of the market rent (between 20% to 25%) below market prices of an area.

Household income categories for Newcastle LGA relate to the NSW median income, which is updated each year.
- **Very low income** (<50% median) tends to include people working at minimum wage or reliant on government benefits.
- **Low income** (51-80% median) tends to include jobs such as childcare workers, secretaries or cleaners.
- **Moderate income** (80-120% median) may include teachers, police, or nurses, particularly those in the early stages of their career.

7.1.1. SAH demand considerations

Limited income households tend to rely on rented properties. Depending on their level of income, these households may be eligible for a range of housing assistance products. These can include direct subsidies that would help alleviate rental stress or provide access to private rental housing that would otherwise be cost-prohibitive. This section considers the number of households influencing demand for dedicated Social or Affordable Housing (SAH) units.

Demand for SAH in Newcastle arises from three main cohorts:
- Households currently living in SAH, but requiring different arrangements (e.g. re-location or size of unit);
- Households who are currently classified as homeless, and have been unable to access any form of housing in the private rental market; and
- Households who are experiencing rental stress, being those in the lowest 40% of incomes, who are paying more than 30% of their gross weekly income on rent.

Table 19 provides underlying demand considerations for SAH arising from these three cohorts, noting:
- The NSW Housing Register lists approved applicants waiting for social housing only. Individual community housing providers may have additional applicants for social housing that have not been registered.
- Individual community housing providers also have approved applications for affordable housing. That information was not collected as part of this Study.
- Some homeless or rental stress households may be eligible for housing assistance options or products other than SAH units (e.g. private rental subsidies, affordable student accommodation, or affordable seniors’ accommodation, etc.).
Table 19. Underlying demand considerations for SAH within the Newcastle LGA

<table>
<thead>
<tr>
<th>Social Housing</th>
<th>Affordable Housing</th>
<th>Homeless (2018)</th>
<th>Rental stress (2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Other HR applicants (2019)</td>
<td></td>
<td>1,190</td>
</tr>
<tr>
<td></td>
<td>Living in affordable housing (2016)</td>
<td></td>
<td>206</td>
</tr>
<tr>
<td></td>
<td>Applicants</td>
<td></td>
<td>Unknown</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>652</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6,674</td>
</tr>
</tbody>
</table>

(Source: adapted from .id community profile 2018, ABS Homelessness Estimate 2018, NSW Housing Register 2019)

A conservative estimate of between 15-20% of homeless or rental stress households meeting the eligibility for SAH units suggests an underlying demand in the order of 7,000 to 7,500 SAH units.

7.1.2. SAH supply considerations

Existing supply

Newcastle’s existing SAH supply is predominantly provided under the National Rental Affordability Scheme (NRAS). In 2016, Newcastle had 3,907 social housing (combined public housing, community housing, and Aboriginal housing) units and 206 affordable housing units available under the NRAS\(^{31}\).

While the current SAH supply is broadly dispersed throughout the Newcastle LGA, some suburbs have a higher proportion of SAH dwellings and other suburbs have very few or none. Areas with the highest proportion of SAH, are generally those areas with historic public social housing estates, such as Hamilton South-Hamilton East (493 units), Wallsend (430 units), Mayfield-Mayfield East (340 units), Georgetown-Waratah (275 units), and Cooks Hill (212 units)\(^{32}\).

Suburbs with the fewest SAH dwellings are Fletcher-Minmi (6 units), Kotara (7 units), Birmingham Gardens-Callaghan (8 units), The Hill (40 units) and Carrington (47 units).
The current supply of social housing is understood to be entirely occupied. Expected wait times for approved applications (priority and non-priority) are shown in Table 20, indicating a minimum wait time of two years for any form of social housing and in excess of 10 years for larger properties.

Table 20. Social housing wait times in the Newcastle LGA

<table>
<thead>
<tr>
<th>Dwelling type</th>
<th>Expected waiting time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio/ 1 bedroom property</td>
<td>2 to 5 years</td>
</tr>
<tr>
<td>2 bedroom property</td>
<td>5 to 10 years</td>
</tr>
<tr>
<td>3 bedroom property</td>
<td>5 to 10 years</td>
</tr>
<tr>
<td>4+ bedroom property</td>
<td>10+ years</td>
</tr>
</tbody>
</table>

(Source: FACS 2019b)

The age and quality of the existing social housing stock may mean it is not entirely suitable to meet current applicants’ needs. For example, as of 2014, two thirds of public housing stock in Newcastle was above ground floor which is prohibitive for tenants with certain physical or mobility limitations. Some of Newcastle’s social housing estates are also perceived as ‘troubled complexes’, and those on social housing waiting lists are known to forego housing in these complexes due to safety concerns.

Subsidised affordable housing under the NRAS only exists in the following selected areas: Wallsend (61 units), Newcastle-Newcastle East-Newcastle West (35 units), Islington-Tighes Hill (32 units), Waratah (28 units), Mayfield (22 units), Adamstown (18 units), Lambton (6 units) and Jesmond (4 units).

Pipeline supply

Information on pipeline SAH supply is limited to what was revealed through CPSD’s pipeline housing supply audit. This information should be supplemented through direct engagement with SAH providers, including NSW Family and Community Services. Compass Housing, Ecclesia, Hume and Pacific Link are also known to be active within the LGA and may have proposed projects.

Our pipeline housing supply audit did not identify any new social housing development projects within the Newcastle LGA. Given the age of the current social housing supply and the predominance of publicly owned stock, it is reasonable to assume the social housing supply will reduce in coming years.

CPSD’s pipeline housing supply audit did identify 112 new affordable housing dwellings in the pipeline. The proposed developments, which have all been approved, are in Adamstown (50 units), Wickham (16 units) and Newcastle (30 units) and Wallsend (16 units). An additional 20 units are also proposed in Mayfield under the NRAS (subject to a future DA).

Affordable housing units approved under existing State Environmental Planning Policies are required to be leased at 20% below the market rate for 10 years, with rents subsidised by NRAS funding. Funding under the NRAS is expected to be phased out, and no new funding mechanism has been identified that would facilitate the retention of existing stock beyond the 10-year obligation. It is reasonable to assume that as each affordable housing project reaches its 10-year obligation, a large proportion of affordable housing units will be converted to full market price private rental dwellings.

The 132 SAH units in the pipeline fall substantially short of the assumed underlying demand (in the order of 7,000 to 7,500 units). This is compounded by the possibility of reduced SAH stock in coming years. This indicates a significant supply gap that will need to be addressed in future Strategies.

33 Compass 2014 p. 16
34 Compass 2014 p. 16
35 Australian Government 2019
7.1.3. Other SAH planning considerations

Locating SAH in areas that are within walking distance or otherwise well-served by public transport to relevant jobs and services can provide additional benefits by reducing the overall cost of living, particularly transport.

The biggest local industries employing very low to moderate income earners in Newcastle are healthcare and social assistance, education, retail & accommodation, childcare, and food & hospitality services. It is important for workers in these industries to live close to where they work, as they may be required to work irregular shifts or respond to emergency situations.

The main centres that provide the largest sources of employment for key workers include:

- The John Hunter Hospital (including Newcastle Private Hospital and HRMI), which provides employment for nurses, other low-paid health professionals, cleaners and hospitality workers;
- The Calvary Mater Hospital in Waratah, which also provides employment for nurses, other low-paid health professionals, cleaners and hospitality workers;
- Kotara Shopping Centre and Homemaker Centre, which provides employment for retail and hospitality workers;
- Newcastle City Centre (Newcastle – Newcastle East – Newcastle West), which provides many sources of employment for a range of key workers including retail, hospitality, health and social assistance, cleaning and accommodation and includes Marketown Shopping Centre; and
- Charlestown Centre, which, although in the neighbouring Lake Macquarie LGA, is a key source of employment for retail, hospitality and health workers living in the Newcastle LGA.

Future strategic work should focus on identifying mechanisms to encourage and expedite the delivery a higher level of SAH within, or within walking distance to these major centres, or on direct public transport routes.

There are also several smaller centres that are important sources of services and employment, particularly for the retail and hospitality sector, including:

- Darby Street shopping strip, Cooks Hills;
- Beaumont Street, Hamilton;
- The Junction Village and Junction Fair;
- Broadmeadow Shopping Centre;
- Waratah Village;
- Stockland Jesmond Shopping Centre;
- Wallsend Village; and
- The University of Newcastle Campus at Callaghan/Shortland which provides employment for hospitality, cleaning and administration staff.

With the exception of Hamilton and Broadmeadow, these smaller centres are not generally well-served by public transport, which may suggest a strong focus should be given to identifying opportunities for SAH in walking distance to each.
7.1.4. Key implications for SAH

There is already a substantial supply gap for SAH, compounded by anticipated reductions to the current stock over the next 10 years. The Housing Strategy will need to consider appropriate mechanisms to address this, focusing on opportunities to expedite supply in locations with good access to jobs, services and public transport.

Development opportunities for SAH are discussed in Section 10.2 and include the possibility of an affordable housing contribution scheme.
7.2. Living with a Disability or High Care Needs

KEY TERMS

**Residential care facility** is a special-purpose facility that provides accommodation along with some form of assistance with day-to-day living, intensive forms of care (including 24-hour nursing care), and/or other support towards independent living to residents. While residents tend to be frail and elderly, younger people with highly complex care needs may also rely on placements in residential care facilities, either temporarily or permanently, if alternative accommodation is not available.

**Specialist Disability Accommodation (SDA)** is housing that has been specially designed to suit the needs of people who have a severe functional impairment or highly complex support needs. SDA may include special designs for people with very high needs or may provide a location or feature that make it feasible to provide complex or costly supports for independent living. It may include built-for-purpose apartments, townhouses, detached dwellings or group home / assisted living environments.

**Accessible Housing** is any other type of built-for-purpose housing that has been constructed or modified to enable independent living for people with a disability.

**Demand considerations**

Estimating the underlying demand for housing to accommodate people living with a disability or high care needs is challenging. Disability can come in many forms, and drives demands for a diverse range of highly specialised housing requirements that suit individuals' specific needs. Broadly speaking, this can range from full-time managed care facilities, to group homes, to extensively modified housing, to housing with minimal or no modifications. It can relate to large facilities or individual homes (rented or owned).

In 2016, there were approximately 9,222 people or 6% of Newcastle’s population that reported needing help in their daily lives to care for themselves due to a disability. This figure does not capture all people living with a disability in Newcastle, only those most in need of assistance due to a severe or profound disability.

Newcastle’s aging population is also a key factor contributing to the demand for appropriately designed homes to support aging in place, or care facilities to assist older people with higher care needs. The likelihood of living with a disability increases with age. One third of 55 to 64 year olds are living with a disability, this figure jumps to nine in ten people for people aged 90 and over.

The National Disability Insurance Scheme (NDIS), was recently introduced across Australia to provide individualised support to eligible people with a disability, regardless of age or means. The NDIS assessment considers the level of home modification required to suit the individual’s need. Under the Scheme, Specialist Disability Accommodation (SDA) funding can be provided for capital works and will create a marketplace for built-for-purpose facilities. Those who are not eligible for SDA may also receive funding for some form of modification (accessible housing), whether in private rental accommodation, managed by a specialist housing provider or living with family.

The Commonwealth Home Support Program (CHSP, commonly referred to as 'My Aged Care') provides access to support services for people as they...
age. This may include the provision of in-home care or support services. It may also provide access to funding for placements in residential aged care facilities. To qualify for CHSP assessment, an individual must be aged 65 or older (50 or over for Aboriginal or Torres Strait Islander people), or 50 years or older (45 years or older for Aboriginal and Torres Strait Islander people) and on a low income, homeless, or at risk of being homeless. In some cases, younger people with high and complex care needs may be referred through the NDIS for assessment under this programme for placement in a residential aged care facility where alternative (age-appropriate) care is not available.

In addition to government-funded placements, individuals may choose to self-fund home modifications or placements in SDA or aged care facilities.

**Residential care facilities**

Demand for residential aged care placements in Newcastle is expected to increase, reflective of the aging population.

**SDA**

While there is no cap on the number of SDA places the NDIS will fund in 2011, the Productivity Commission estimated that only around 6% of NDIS participants will require SDA funding at full scheme. That suggests around 432 people are expected to be eligible for SDA funding in the Newcastle and Lake Macquarie SA4 area.

Prior to the introduction of the NDIS, there were around 674 people living in SDA across the Newcastle and Lake Macquarie SA4 area. This indicates the likely demand for SDA in Newcastle and Lake Macquarie (SA4 area) may be higher than the 6% estimation.

**Accessible Housing**

Council requires new housing to include universal design features to promote flexible housing for all residents. The *Liveable Housing Design Guidelines* set out basic design standards for key features of a house to facilitate liveable housing design. Council’s DCP requires new housing to be designed to Silver level for universal design features. This will help to meet the needs of some people with a disability but will not meet the needs of those with higher mobility needs, who require housing designed to Platinum Level under the *Liveable Housing Design Guidelines*.

Further research is required to consider the take-up of this requirement.
7.2.1. Supply considerations

Residential care facilities

The most common form of residential care facilities in Australia are for elderly residents (Residential Aged Care). According to independent search websites, the existing supply currently consists of around 2,000 beds in 23 residential aged care facilities across the Newcastle LGA.

Our pipeline housing supply audit identified 127 beds in the later stages of completion. This, along with the low vacancy rate of existing facilities suggests a supply shortfall that will need to be addressed in the Housing Strategy.

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of facilities</th>
<th>No. of units/ beds</th>
<th>Advertised Vacancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential aged care</td>
<td>23</td>
<td>2,021</td>
<td>12</td>
</tr>
</tbody>
</table>

(Source: DPS Publishing Aged Care Guide 2019)

Table 21. Existing residential aged care housing in the Newcastle LGA

Table 22. New residential aged care housing in the Newcastle LGA (2016-2019)

<table>
<thead>
<tr>
<th>Type</th>
<th>Built/ Under Construction (units/ rooms)</th>
<th>Approved (units/ rooms)</th>
<th>Under assessment (units/ rooms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential aged care</td>
<td>127</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

(Source: CN DA Tracker 2019)

SDA

Across Australia, the most common types of SDA are apartments and group homes. A 2019 study on SDA supply across Australia suggests that Newcastle and Lake Macquarie (SA4 area) currently has the largest supply of SDA in NSW relative to the number of estimated NDIS-funded places. The Newcastle and Lake Macquarie area also has the largest supply of SDA in the pipeline compared to all other regions in NSW.

As modelled, the 2019 study appears to suggest an oversupply of SDA in Newcastle and Lake Macquarie (SA4 area). We note this modelling assumes a reduction in the number of SDA placements based on an estimation of NDIS-funding eligibility, rather than the true assessed need or broader needs individuals. Further investigation will be required to identify what, if any, shortfall is expected.

SDA is a built-for-purpose produce that is designed to suit a specific user's needs. That means existing SDA stock may not be suitable for re-use by a new user without further modification.

Accessible housing

There is currently no evidence base available to measure the current or future supply of accessible dwellings in the Newcastle LGA.

7.2.2. Other considerations

Future development is unlikely to adequately deliver accessible, or adaptable housing without some form of intervention via the planning framework. Newcastle's DCP 2012 requires that new housing should be designed to the Silver level for universal design features under the Liveable Housing Design Guidelines. This may meet the needs of some people with a disability, however for housing to be fully accessible and provide support for people with higher mobility needs housing must be designed to Platinum Level under the Liveable Housing Design Guidelines.
7.2.3. Key implications

There is currently insufficient evidence to confidently establish the underlying demand for built-for-purpose residential care placements, SDA units, or Accessible Housing units. Future planning and plan-making could be supported through more detailed evidence collected from NDIS and CHSP, and engagement with local providers.

SDA supply under the NDIS only meets the needs of a fraction of Newcastle’s residents with a disability. Further consultation with these residents, their carers and the broader industry is needed to better understand the available supply of other forms disability housing in Newcastle, and the unmet demand for housing to meet their varied needs.
7.3. Retirement accommodation

KEY TERMS

Senior is currently defined in Planning Instruments and other legislation as someone:
- aged 55 or more years, or
- (regardless of age) who is resident at a facility that provides residential care, or
- (regardless of age) who has been assessed as eligible to occupy housing for aged persons provided by a social housing provider.

Seniors housing: is housing that is intended to be permanently used to accommodate seniors, as described above. It may include:
- Residential aged care facility, where managed personal care and/or nursing services are provided on-site;
- Hostels or group homes, which are managed (staff on-site) and provide some shared services for residents such as meals, laundry or cleaning; or
- Independent living units, where seniors live relatively self-sufficiently.

Adaptable Housing is a dwelling that has been designed to accommodate lifestyle changes without the need to demolish or substantially modify structures. It allows, for example, larger family homes to be eventually divided into two smaller homes, enabling residents to continue living in a familiar environment. It can also be modified to become an accessible house. This type of purpose-built housing is becoming increasingly popular in Australia, supporting more people to continue living independently for longer.

7.3.1. Demand considerations

As of 2016, there were 42,920 people aged over 55 living in the Newcastle LGA – around a quarter of the population - and the proportion of the population classified as a ‘senior’ is expected to grow.

As households age, household sizes tend to shrink as children leave the nest, or adverse life events such as bereavement or marital breakdowns occur. As of 2016, there were 5,251 couple households (aged 65+) without children, and another 6,822 lone person (aged 65+) households living in the Newcastle LGA, collectively these households make up nearly 20% of Newcastle’s households and therefore account for one fifth of Newcastle’s total housing demand.41

Although there is a common assumption that older households will downsize into smaller private market dwellings or dedicated seniors housing (e.g. retirement villages or aged care facilities), evidence suggests this is not often the case. The average age of residents entering a retirement village is 75 years, and the average age of residents living in retirement villages is 81 years.42

While some older households are choosing to downsize or take up dedicated seniors housing options, many older households are choosing to age in place, either in their own home or a privately rented home.43 The proportion of older Australians living in four or five bedroom homes increased between 2006 and 2016, while the proportion living in two or three bedroom homes has decreased.44

This trend is evident in the Newcastle LGA. Areas with the highest proportion of older (aged 65+) couples without children are located in Newcastle’s outer suburbs, as illustrated in Figure 25, which are typically characterised by larger dwellings and less diversity of housing options compared to the middle and inner ring suburbs.

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41. id profile 2018
42. PwC & Property Council 2018
43. AHURI 2019a
44. AHURI 2019a
Recent research by AHURI looked at the housing preferences of older Australians, providing the following insight into the housing needs of this age group:

- The housing most preferred by older Australians is a three bedroom house in the middle and outer suburbs of a city.
- Most older Australians aspire to stay in their current home and age in place, primarily due to the feeling of home. Those living in a house are largely happy with their current dwelling and their housing aspiration gap is minimal.
- For the 10% that wanted to move, downsizing was cited as the main reason for moving.
- Those living in two and three bedroom homes are the most satisfied, and those living in larger or smaller sized houses would prefer to live in three bedroom and to a lesser extent two bedroom homes however there are limited options available to reduce dwelling size.
- For older Australians living in social housing, there is unmet demand for larger social housing dwellings.
- Less than half of older Australians living in an apartment are happy with their dwelling, however they have chosen an apartment due to its better access to amenities and the cheaper price compared to a house. Older households would prefer to be living in a house in the same location.
- Seniors housing, such as retirement villages, is unappealing to a large range of older Australians due to the leasehold nature of the dwelling and the high entry and exit fees. These high fees also often restrict seniors living in private rental or social housing dwellings.
- Current patterns of housing supply are not meeting the diverse needs of older Australians with too many apartments and large separate dwellings and not enough mid-sized product.
- A growing number of older Australians are falling out of home ownership and are renting into retirement. A supply of subsidised rental housing is essential to meet demand as Commonwealth Rental Assistance is not enough to make housing affordable.

Newcastle’s aging population is also a key factor contributing to the demand for appropriately designed homes to support aging in place, as discussed previously in this Report.
7.3.3. Supply considerations

According to independent search websites, the existing supply currently consists of around 400 ILUs in 15 retirement villages across the Newcastle LGA. As of August 2019, these showed a very low vacancy rate.

Most ILU’s were two-bedroom villas or units with some one bedroom dwellings. There were very few three bedroom dwellings, which suggests there may be a shortfall in the type size of dwelling most seniors prefer.

Prices for ILUs ranged from $260k to over $660k with the majority in the $400k to $500k range.

Table 24. Known number of seniors housing in the Newcastle LGA (2019)

<table>
<thead>
<tr>
<th>Seniors housing type</th>
<th>No. of facilities</th>
<th>No. of units/ beds</th>
<th>Advertised Vacancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retirement Village (ILU)</td>
<td>15</td>
<td>406</td>
<td>13</td>
</tr>
</tbody>
</table>

(Source: DPS Publishing Aged Care Guide 2019)

Our pipeline audit identified 667 ILUs currently in the pipeline in the Newcastle LGA, with nearly one third already built or under construction. Once complete the Newcastle LGA will have doubled the supply of ILU’s. An additional 148 ILUs are currently under consideration as part of a Site Compatibility Certificate proposal.

The number of new non-seniors dwellings in the pipeline that are designed to support aging in place is unknown.

Table 25. Seniors housing in the supply pipeline in the Newcastle LGA (2019)

<table>
<thead>
<tr>
<th>Seniors housing type</th>
<th>Built/ Under Construction (units/ rooms)</th>
<th>Approved (units/ rooms)</th>
<th>Under assessment (units/ rooms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retirement Village (ILU)</td>
<td>410</td>
<td>34</td>
<td>223</td>
</tr>
</tbody>
</table>

(Source: CN DA Tracker 2019)

46 These findings were based on an internet search of both ILU and aged care facilities in Newcastle, therefore it may not have captured all ILUs and nursing homes. The number of units and rooms were found for all facilities.

7.3.4. Other considerations

The supply of housing in the Newcastle LGA that has been designed to support aging in place is unknown, however planning controls under the Newcastle DCP 2012 require that universal design features are included in new dwellings to promote flexible housing for all dwellings. The benchmark for dwellings that are not a seniors housing development to be designed to the Silver Level for universal design features under the Liveable Housing Design Guidelines.

7.3.5. Key Implications

The analysis of current and future housing demand and supply for seniors indicates that there is a steady supply of dedicated seniors housing in the pipeline for the Newcastle LGA. However, housing preferences of seniors indicate that there is an unmet demand for well-designed two and three bedroom attached dwellings in high amenity locations which are walking distance to shopping, health services and public transport.

The housing strategy should consider how to facilitate this type of housing in the right locations to meet the current and future needs of the Newcastle LGA’s growing seniors population.
7.4. Student accommodation

**KEY TERMS**

**Purpose Built Student Accommodation (PBSA)** is housing that is specifically built for occupation by students and is designed to meet their specific needs. PBSA is a form of residential accommodation and the specific dwelling type can vary. It can include Residential Flat Buildings (RFB) featuring self-contained units. PBSA can also be in the form of a boarding house which may have shared facilities and is not required to provide private kitchen or bathroom facilities. PBSA can be supplied by universities or by private providers off campus.

**Informal student accommodation** involves students occupying dwellings that have not been built as student accommodation and can include shared houses or living in the family home.

7.4.1. Demand considerations

The demand for student accommodation is driven predominantly by the availability of enrolled places in tertiary education and university institutions. The student population within the Newcastle LGA is largely associated with the University of Newcastle and TAFE NSW. In 2016, students made up around 10% of the LGA’s population, with around 12,600 people living in Newcastle attending University and another 3,550 residents attending TAFE.

The location of institutional and other student facilities plays a key role in where demand for student accommodation arises. At present, students attend University of Newcastle at Callaghan and City Centre (Civic and Honeysuckle) campuses. TAFE offers three campuses within the LGA in the City Centre (Hunter Street), City Centre West (Parry Street), and Tighes Hill. This is associated with a high demand for student accommodation in and around these suburbs, or along direct public transport routes as illustrated in Figure 26. Newcastle’s outer suburbs and ‘heights’ (Adamstown Heights, Merewether Heights and New Lambton Heights) have the lowest proportion of student residents.

![Figure 26. Newcastle’s suburbs with the highest proportion of people attending University (2016)](source: adapted from .id community profile 2018)
Demand for student accommodation is expected to increase consistently over the next 10 years, noting:

- Full-time student numbers at the University of Newcastle campuses in the Newcastle LGA grew by around 4% between 2016 and 2017.
- The University of Newcastle will continue to expand in the City Centre and at Callaghan, increasing the offering of courses and student numbers.
- Discussions with the University of Newcastle staff has also revealed that they have strong aspirations to grow the number of international students across their Newcastle Campuses.
- New institutions, such as Nihon University, are also establishing within the LGA.
- The general location of higher-education campuses (irrespective of provider) is expected to remain primarily focused around the City Centre and Callaghan.

There appears to be unmet demand for affordable student accommodation in Newcastle. This acknowledges that students are likely to make up a proportion of the households experiencing rental stress due to their limited and inconsistent income, along with the coincidence of high levels of rental stress in areas where a higher proportion of residents are students (refer to Section 0). Further investigation is required to quantify this demand.

**STUDENT ACCOMMODATION: BROAD TRENDS**

Research into regional student accommodation undertaken by Urbis looked at the key drivers affecting students housing choice. These include price, location, access to public transport and security/support which are discussed below:

**Price:** is often the primary factor for students seeking housing. The average income of a full-time university student in Regional NSW is $398 per week which means for housing for be ‘affordable’ a student can only spend $120 on rent per week. Students unable to live at home and in the private rental market will therefore choose the cheapest possible option which is often renting a room in a share-house.

**Location:** students overwhelmingly choose to live close to where they study, therefore on-campus accommodation and suburbs surrounding the Callaghan and City Centre campuses are likely to be the most in demand and logical areas for new student housing.

**Public transport access:** for students not living within walking distance to campus, available public transport options is a key consideration. This is likely to be more important for students studying in the City Centre campuses which will have limited car parking.

**Security and support:** Younger and first year students will often choose on-campus accommodation as there is a higher level of support, meals can be catered, and there is likely to be an increased level of security. Older or locally based students often choose to live in private accommodation or remain living with their parents.
7.4.2. Supply considerations

There are currently 1,818 known PBSA rooms within the Newcastle LGA as shown in Table 26 below. This equates to an average of 8.2 full time students per bed based on 2016 enrolment numbers. As of 2017 this accommodation was effectively full. Most of these rooms are located on Campus at the University of Newcastle’s Callaghan Campus.

There is no known PBSA within the Newcastle City Centre or surrounding suburbs servicing the University of Newcastle’s City Campus.

Table 26. Known number of PBSA in the Newcastle LGA (2018)

<table>
<thead>
<tr>
<th>PBSA Supplier</th>
<th>No. of Facilities</th>
<th>No of Beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Owned</td>
<td>5</td>
<td>1,691*</td>
</tr>
<tr>
<td>Private</td>
<td>4</td>
<td>127</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>1,818</strong></td>
</tr>
</tbody>
</table>

(Source: Urbis 2018, *revised number based on discussion with University of Newcastle staff 2019)

In addition to PBSA there are several boarding houses located throughout the LGA that offer accommodation to students. As of 2019, there were 64 registered boarding houses within the Newcastle LGA. While boarding houses are a form of affordable accommodation available to the wider community, there are some boarding housing which are marketed as solely offering student accommodation. The 4 boarding houses located in Tighes Hill opposite the TAFE are known as student accommodation, and the 10 boarding houses surrounding the University of Newcastle Callaghan Campus located in Birmingham Gardens, Jesmond and Waratah provide student accommodation.

The remainder of student accommodation is provided in the private rental market. A search of available properties listed on the University of Newcastle’s preferred partner for off-campus accommodation provider indicated that 70 ‘student housing’ properties were available for rent, and most were located in Birmingham Gardens, Jesmond and Waratah. Only one was available in the Newcastle City Centre and surrounding suburbs.

Pipeline student housing supply

The University of Newcastle provided 778 new PBSA beds within the Callaghan Campus in 2015 and currently has no plans for further student accommodation at the Callaghan Campus.

There is student accommodation (off-campus) in the pipeline in the suburbs surrounding the Callaghan Campus. Larger developments include a RFB development providing 155 dwellings and a multi-dwelling development providing 27 dwellings. These are both currently under construction directly opposite the Callaghan campus. Smaller infill development in the suburbs surrounding the campus will also continue to increase student housing supply.

There is also student accommodation in the pipeline close in the City Centre. The University of Newcastle are currently in the planning process to develop PBSA with around 300 beds on the site of their future Honeysuckle Campus. An 11-room boarding house targeted at student accommodation has also been approved on King Street in Newcastle.
7.4.3. Key Implications for Student Housing

There is a clear market opportunity for student accommodation in Newcastle, with the resident student population expected to continue growing in the coming years. The largest unmet demand appears to be in the City Centre (Newcastle-Newcastle East-Newcastle West) and surrounding suburbs of Cooks Hill, The Hill, Hamilton and Wickham. This coincides with substantial investment by University of Newcastle, TAFE NSW, and other providers to provide additional institutional and student facilities on new or expanding campuses. The Housing Strategy should consider new opportunities for PBSA in these areas, particularly within 500 metres of the University of Newcastle City Campuses or along a key public transport routes.

The affordability and other aspects of student accommodation requires further investigation to ensure it is relevant to the types of students taking up enrolments within the LGA. This recognises the distinct needs and expectations of, for example, first year versus postgraduate students, or Australian versus international students.
8. INTEGRATED PLANNING CONSIDERATIONS

Planning for housing within the Newcastle LGA will be influenced by other locational factors. These include considerations for the accessibility of new homes to jobs, education and health services, transport networks, and opportunities for recreation or leisure. Residential development opportunities may also be limited by, or require more careful consideration in response to, a range of environmental factors.

The Study considered these at a broad level to identify where specific locations or circumstances may warrant further investigation when preparing Council’s Local Housing Strategy.

8.1. Employment and education centres

Increasing residential densities in and around key employment and education centres will allow more residents to live close to where they work or study. This can, in turn, put a downward pressure of the overall cost of living, particularly where travel costs can be substantially reduced.

Key employment centres within the LGA include the Newcastle City Centre, The John Hunter Hospital in New Lambton which employs around 3,000 full time staff, The Calvary Mater Hospital in Waratah which employs around 1,000 full time staff, Westfield Shopping Centre in Kotara, and Beresfield Business Park. Other smaller employment centres including Broadmeadow, Adamstown, Mayfield, Wallsend, The Junction, among others.

Key education centres, which are also employment centres, include the University of Newcastle Callaghan Campus, the recently built NeW Space Campus in the City Centre, the proposed Honeysuckle Campus in the City Centre and TAFE campuses in the City Centre, Hamilton, and Tighes Hill. Many of these education centres are growing, which will drive an increase in student number and the demand for affordable housing.

Many employment centres, such as Kotara and New Lambton currently offer limited housing diversity to suit the needs of local workers. In Kotara for example, 90% of the housing stock is detached dwellings, and over 80% are 3 or more bedroom homes. The limited dwelling types offer few affordable housing options for local workers to live in the area.

8.2. Transport networks

Access to public and active forms of transport is a critical factor when planning for new housing, particularly when increasing residential densities in established urban areas. The planned areas to accommodate the most growth in residential housing (urban renewal corridors and catalyst areas) have already been identified in large part due to their public transport accessibility.

These existing areas are also the proposed focus locations for future public transport investment including the expanded light rail network to Broadmeadow and the John Hunter Hospital in New Lambton. Transport for NSW has not yet released the Light Rail Extension ‘Business Case’ study it is working on. Council should continue to work with Transport for NSW to identify and protect future public transport corridors as more information becomes available.

In the meantime, higher densities in renewal corridors and catalyst areas will increase the feasibility of delivering new and more frequent public transport servicing these areas including the potential for a rapid bus program.

There is clear community demand to provide better cycling networks between Newcastle’s strategic centres. Some areas already have established cycling networks such as through Maryville, Islington and Wickham, whereas other areas, particularly the Newcastle City Centre have insufficient cycling networks. Improvements to the cycling network, particularly from high density residential areas to employment and education centres, such as the University of Newcastle campuses, will increase amenity in residential areas and provide more affordable transport options.
8.3. Open space and recreation

Walkable (within 400m) access to public open space will become increasingly important as more people choose to live in medium and high density forms of housing with limited open space. High density housing should be prioritised in renewal corridors and catalyst areas with walkable access to public open space such as the Islington and Adamstown Renewal Corridors. Opportunities to deliver new public open space should be investigated in renewal corridors and catalyst areas with limited public open space such as Newcastle West and the Mayfield Urban Renewal Corridor.

Nearby schools and health services, while important, are not always a defining factor in the location of new housing in infill areas as these services are readily dispersed throughout the Newcastle’s established suburbs and people are willing to travel further to access these services as opposed to public open space. However, as the population ages proximity to local health services will become a more important factor.

8.4. Environmental factors

8.4.1. Biodiversity

While most of Newcastle is urbanised the LGA still has a high diversity of natural areas including bushland areas, wetlands and creeks. These areas are home to varied ecosystems supporting an array of plants and animals. Natural areas also contribute to the character of Newcastle, provide important recreational opportunities and help keep the city cool. Conserving these areas is fundamental to protecting the diverse habitat of plans and animals and ensuring a sustainable future.

Encouraging new housing in already established urban areas helps to lessen the impact on Newcastle’s remaining bushland areas. Some new housing is likely to be developed outside of Newcastle’s existing urban areas. In these area, new housing that proposes to impact on biodiversity values will be subject to an environmental assessment against the relevant legislation including the EP&A Act and the Biodiversity Conservation Act 2016.

8.4.2. Contamination

Newcastle has a long history of sustaining light and heavy industry and many sites throughout the LGA are potentially contaminated, the most obvious sites being those previously used for industrial activity, as service stations, or for landfill. While there are options to develop new housing on potentially contaminated land, the cost implications can make some remediation exercises prohibitively expensive. Contaminated sites may require higher densities in order to make development financially feasible.

8.4.3. Natural hazards

The Newcastle LGA is at risk of a number of natural hazards including bushfire, mine subsidence and flooding which can all act as considerable constraints to building new housing in affected areas.

Flooding

Large areas of Newcastle are flood affected which can occur from the flooding of the Hunter River, flash flooding from other local catchments and ocean flooding from very high tides. The vast extent of flooding across Newcastle and the unpredictability of flood patterns makes planning for flooding a complex issue.

In the past, some floodway areas of Newcastle such as Wallsend have been developed despite being at high risk of flash flooding affecting the property and safety of residents. In these areas Council, who is responsible for managing flood risk, may need to fund flood mitigation measures including the acquisition of high risk flood land.

Council supports the wise and rational development of flood prone land, however some flood prone areas are not suitable for certain types of residential development such as seniors housing. Developing in moderate to high flood prone areas can also add substantial costs to development. Future planning for new housing should continue to consider these
constraints as well as continuing to manage flood risk in areas where people already live.

**Mine Subsidence**

Mine subsidence is a significant natural hazard affecting the feasibility of certain types of residential development across Newcastle. Newcastle’s coal mining history has left an extensive mosaic of underground coal mines throughout the LGA. In these areas the ground surface is at risk of collapsing as a result of the failings of remaining supporting infrastructure in historical underground mines.

Subsidence Advisory NSW has identified and mapped areas that may be affected by mine subsidence, which are known as Mine Subsidence Districts. Any new development proposed within a Mine Subsidence District must be referred to Subsidence Advisory NSW for investigation and approval.

The presence of mine subsidence particularly affects the feasibility of residential development over three storeys or those with larger structures. While these types of development can occur within areas affected by mine subsidence remediation works such as pumping ‘grout’ underground may be required to stabilise the site and can be prohibitively expensive.

Most of the Newcastle LGA is identified as being within a Mine Subsidence District including the Newcastle City Centre. However, many areas that are identified focus areas for higher density residential development are not affected by mine subsidence and include the Adamstown, Broadmeadow, Islington and Mayfield Urban Renewal Corridors.

**Bushfire**

Bushfire is another natural hazard that must be considered and planned for when building new housing. Areas in Newcastle identified as being at risk of bushfire are remaining areas of bushland and land within 100 to 30 metres of these areas. These areas are concentrated in the west of the LGA and in other bushland pockets including New Lambton, Callaghan and Merewether Heights. It is important to avoid locating high density residential development in these areas to minimise potential risk. Most other established areas of Newcastle have limited remaining bushland and are therefore do not face the same level of bushfire risk.

New development on land mapped as bushfire prone land is subject to additional planning controls to ensure that the development is designed to minimise bushfire hazard. It is important that bushfire prone land mapping is regularly updated as areas develop to avoid unnecessary bushfire assessment.

**8.4.4. Incompatible uses**

Heavy and light industry remains a significant land use across the LGA, particularly around Newcastle Port, which is recognised as a State significant industrial precinct, and extending along the Hunter River up to Hexham. Other industrial areas are located in Beresfield, Mayfield, Broadmeadow, Lambton and Kotara.

Balancing the competing demands of industry and residential uses in these areas is needed to ensure that residential development is not affected by amenity issues (noise, dust, odour and light) and that the continued growth of industry is not affected by residential encroachment. This is particularly important around Beresfield and Black Hill to ensure that adequate land is available over the long term to support the expansion of industry in Newcastle.

Mixed use areas enable the co-location of a range of land uses including residential, shops and services to support day and night-time activities. There are many benefits to mixed use areas including walkability and activation however some land uses can end up incompatible if not designed...
well. A primary example would be pubs that provide live music adjacent residential development which can result in land use conflict over noise. As Newcastle’s mixed use areas grow and develop, it is important that these potential land use conflicts are considered and that planning controls adequately seek to reduce impacts.

8.4.5. Heritage

Newcastle’s rich history means that the LGA contains many sites of both Aboriginal and non-Aboriginal heritage significance. These sites include specific places, buildings, structures, and objects as well as archaeological sites, landscapes and conservation precincts.

The presence of heritage can act as a major constraint to development on a site depending on the level of heritage significance and the specific site constraints. All new housing developments are required to consider and address any potential impacts upon heritage through the development approvals process.

Heritage items and areas are protected and managed through National, State and local legislation, strategies and plans. Aboriginal heritage is generally managed by the Office of Environment and Heritage (OEH) under the National Parks and Wildlife Act 1974, and through planning controls in Council’s LEP and DCP.

Non-Aboriginal heritage is also managed at a state level by OEH under the Heritage Act 1977, and at a local level through planning controls under Council’s LEP and DCP and supporting strategies and guidelines.

Council’s LEP lists non-Aboriginal heritage items of local or state significance and development that is likely to impact upon these heritage items is subject to additional planning controls under the NLEP and NDCP to ensure these impacts are mitigated.

There are also eight heritage conservation areas (HCAs) located within the Newcastle LGA. They are particularly located within the City Centre and Newcastle’s inner suburbs and are listed below:

- Cooks Hill HCA;
- Glebe Road Federation Cottages HCA;
- Hamilton Business Centre HCA;
- Hamilton Residential Precinct HCA;
- Hamilton South ‘Garden Suburb’ HCA;
- Newcastle City Centre HCA;
- Newcastle East HCA; and
- The Hill HCA

Substantial growth and change in these areas will generally be limited to protect the heritage significance, which can not only include buildings but also the subdivision patterns and tree canopies. The exception is the Newcastle City Centre where substantial growth and change is encouraged but in a way that respects the heritage significance, for instance the adaptive reuse of existing heritage buildings.

8.4.6. Local Character

Some of Newcastle’s existing suburbs have unique local characteristics which may limit the level or form of infill development. Local character is discussed in more detail in Section 9.
8.5. Essential Services

Established areas of Newcastle are generally serviced with appropriate infrastructure including water, sewer, telecommunications and electricity to support infill housing. Council has in place a Newcastle Local Infrastructure Contributions Plan 2019 which sets out development contributions requirements to support the cost of new and upgraded local infrastructure across the LGA. Any new development with an estimated cost of over $100,000 is required to pay an infrastructure levy ranging from 0.5% to 3%, building a single dwelling on a single lot is exempt from paying the levy, as are alterations and additions.

How development contributions will be spent is provided in the Newcastle Local Infrastructure Contributions Plan 2019 and includes new and upgraded community facilities, social infrastructure, open space and recreation, public domain and public transport works, extension of the bicycle network, and local centre, library and pool upgrades.

New housing development in greenfield areas has additional infrastructure requirements as these areas are not serviced. New greenfield residential development will be required to pay an infrastructure levy under the proposed Hunter Region Special Infrastructure Contribution Plan (SIC) to fund new State and regional infrastructure including roads, schools, health and emergency services. The SIC is currently at the draft stage but proposes that a levy of $9,857 will be required per lot for residential development.

Key State infrastructure currently planned for the Newcastle LGA includes the proposed Newcastle Inner City Bypass between Rankin Park and Jesmond and the redevelopment of the John Hunter Hospital. Both of these projects however are still in the early planning and inception stages. Council should continue to work with the State Government to ensure that planning for future housing aligns with future planned infrastructure.

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53 City of Newcastle 2019b
54 Environmental Planning and Assessment (Special Infrastructure Contribution – Hunter Region) Determination 2018
9. LOCAL CHARACTER

Local character is an important consideration when planning for new housing. Council staff identified a concern that, in some circumstances, planning controls are not directing new infill development to where it is intended which is causing local character in some areas of Newcastle to be compromised.

This section presents the Study’s findings in response to key local character issues identified by Council staff and considers how local character has been considered through the planning process to date. It also provides a high level assessment of Newcastle’s local character areas as a basis for directing future planning and plan-making.

9.1. What is Local Character?

“The key to understanding local character is to consider the features of a place holistically and how they come together to form ‘character’. This relies on understanding the human, social, environmental and economic factors influencing an area, and how these are reflected in terms of land use and built form. A place’s recognised heritage features are relevant to, but are not the only evidence of, local character.

The NSW Government Architect’s Office developed an advisory note providing guidance for undertaking place analyses, which offers a useful reference point for the range of features that contribute to local character.ö

DPIE has recently published a Local Character and Place Guideline, Planning System Circular PS 18-001 Respecting and Enhancing Local Character in the Planning System, a Local Character and Place Collection e-book, and the Discussion Paper – Local Character Overlays. These collectively suggest the introduction of local character overlays (through Council’s LEP) as a planning mechanism to address local character concerns.

Under the new local character framework for NSW, local character should be considered when preparing new long-term strategies and plans. An important feature of Council’s Local Housing Strategy, for instance, will be to identify where new housing will be built to accommodate a growing community, while also encouraging housing that respects and enhances local character.

The concept of ‘local character’ is not new, but the State Government is currently implementing a framework to place a stronger focus on local character when planning for places. This responds to increasing community concern that the planning system is creating development that is negatively impacting upon neighbourhood character and amenity.

“Character is what makes a neighbourhood distinctive and is the identity of a place. It encompasses the way it looks and feels. It is created by a combination of land, people, the built environment, history, culture and tradition including aboriginal and non-aboriginal, and looks at how they interact to make a distinctive character of an area.”

- - DPIE, 2019a, p. 7

55 The Advisory Note: Place analysis is found at the back of the Local Character and Place Guideline (DPIE 2019a).
9.2. Planning for Local Character in Newcastle

Newcastle’s urban form and character is continually evolving. It has been shaped by growth and development as a penal colony, coal mining settlement, and later steel making centre. It has experienced changes in technology, a decline in manufacturing, a severe earthquake, and a shift away from shopping strips to shopping centres. More recently, Newcastle is now evolving into a modern city at the heart of a wider metropolitan area, with opportunities in the thriving creative industries, health and education sectors.

These larger shifts have influenced the character of Newcastle’s suburbs at the local level. For instance, Newcastle’s older neighbourhoods were established before the advent of the car. In these areas, houses are closer to the street and are on smaller lots. By comparison, neighbourhoods built since cars became the dominant mode of transport have a much different urban form, typically featuring houses set back further from the street and fronted with garages.56

Newcastle’s suburbs will continue to change to accommodate population growth respond to cultural, social, economic and environmental shifts. Most new housing will continue to be built in well-established suburbs, given the limited opportunities for greenfield development. If managed well, new housing can enhance the local character of existing neighbourhoods whilst providing for the needs of a growing community.

Over the years, Newcastle Council has completed several studies and introduced planning control mechanisms aimed at identifying and protecting local character, which are briefly summarised below.

These studies generally recommended more detailed local character analysis was warranted for specific areas. To date, most of these more detailed analyses have not been completed. To fill this gap, the Study has collated local character issues and completed a preliminary assessment of local character for areas throughout the LGA.

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56 Coomes Consulting 2006 p. 53

57 Suters Architects 1997 p. 6/4
Newcastle City Wide Urban Design Guidelines 2006

This document provides general guidelines to encourage new development to be sited and designed in a manner that respects local character. A summary of the Guidelines has already been provided in Section 2.3.1 of this Report.

Community consultation undertaken to prepare the guidelines provided insight into local character across Newcastle’s suburbs and the preferred direction for future development.

“Participants considered that in order to maintain and enhance Newcastle’s distinctive features, developments should be concentrated around rail stations, city centres, along main roads, neighbourhood centres, new residential areas and the University area. New development in these areas will minimise the impact on existing neighbourhood features that are appreciated by residents and are considered important to local character.”
- Coomes Consulting, 2006, p. 28

Newcastle’s current residential growth framework broadly aligns with the expectations of the community in that higher densities are facilitated by planning controls within the City Centre, around rail stations and along key transport routes.

The guidelines recommend character analysis studies are prepared for Adamstown, Lambton, Mayfield, Waratah, Stockton as these suburbs were considered most at threat from poor development. The recommendations also suggest that increased densities should be investigated in in Hamilton North, Kotara, Waratah West/North Lambton, Broadmeadow, and Wickham/ Maryville.

Newcastle LEP and DCP 2012

The Standard Instrument LEP allows Council to include additional local objectives to address major land use issues that are not otherwise covered by the core objectives. The Newcastle LEP has included additional zone objectives in the residential zones (R2, R3, R4) to require the consideration of local character in development assessment.

A Council’s DCP can provide more detailed design and planning requirements, including to address local character. DCPs provide guidance only, which means that there is a greater level of flexibility in the assessment process, and variations can be made, where justified, in determining a Development Application.

The Newcastle DCP does include locality-specific provisions that address local character for the Newcastle City Centre including Wickham, the five Urban Renewal Corridors, and for selected areas such as Darby Street Cooks Hill, Beaumont Street Hamilton and the Royal Newcastle Hospital Site.

Many of Newcastle’s inner suburban areas including Cooks Hill, The Hill, Newcastle East, the Newcastle City Centre and Hamilton are mapped as Heritage Conservation Areas (HCAs) under the NLEP with locality specific provisions in the DCP. HCAs are areas that have been identified as having cultural heritage significance. While local character and heritage are distinctly different, heritage significance of an area can often be a defining element of local character (e.g. rows of historical terraced housing are consistent in building type, subdivision pattern and architectural style also creating a distinctive local character). HCA overlays are therefore somewhat effective in managing built form and, in some cases, vegetation elements that contribute to local character.
9.3. Local Character Issues

Many of Newcastle’s suburbs are experiencing a high level of development activity. While new development can enhance the local character it also has the potential to negatively impact upon unique features of these suburbs.

Council has noted that development in some areas of Newcastle has raised concerns with residents that it is inconsistent with local character. Key issues include:

- Permissible land uses in residential zones that are inconsistent with zone objectives, for instance the R2 Low Density Residential zone is an ‘open zone’ in that it permits nearly every type of residential development including multi-dwelling housing and residential flat buildings, which can be incompatible with the limited growth intent of the zone.
- Loss of private open space and tree canopy due to infill development in existing suburbs.
- Small lot housing controls, as the LEP allows for subdivision of lots down to 200m² with the addition of a new attached or detached dwelling in all residential zones. This can facilitate medium density housing in intended low density areas.
- Development occurring that is not consistent with the heritage significance of Heritage Conservations Areas (HCA), in cases where an R3 Medium Density Residential zone applies over a HCA.
- Other general controls such as the suitability of floor space ratios.

A recent court case concerning multi dwelling housing in the R2 Low Density Residential zone highlighted the need to review the land uses and development standards in residential zones to better respond to local character and amenity. Council has previously allowed for a wide range of residential land uses in the zones to encourage housing diversity across the LGA. However, as the findings of the court case demonstrate, housing that is not consistent with the intended character of particular areas can be developed under the current controls.

The Local Housing Strategy will provide an opportunity to address local character concerns, potentially through further local character analysis and a review of residential planning and design controls. Sections 9.4 and 0 provide a preliminary assessment of local character and present an analysis of potential options available to respond to local character concerns.

**Court Case Summary: Fleetqueen Pty Ltd v Newcastle City Council [2018] NSWLEC 1105**

- Council refused an application for multi-dwelling housing (8 dwellings) in an R2 Low Density Residential zone on the basis of inconsistency with the zone objectives, not exhibiting best qualities of urbanism, and issues raised by residents that establish unreasonable amenity impacts.
- The developer appealed the refusal through the Land and Environment Court and the appeal was upheld allowing the developer to proceed with the development.
- Key reasons for approval were that the proposed development met all of the standards and controls of the NLEP 2012 and NDCP 2012 and that the development did not contradict the aims and principles of Council’s Local Planning Strategy 2015.
- The Commissioner noted that if the intention is to limit or restrict this form of development in certain areas a strategic review of the current controls should be undertaken, and the review should consider the balance between the different public and private interests for this type of development (i.e. more housing diversity vs retaining local character)

**Implications for Local Housing Strategy**

There is a need to undertake a strategic review of the current residential development controls, particularly in the R2 Low Density Residential zone, considering the implications for both local character and encouraging housing diversity.

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58 Fleetqueen Pty Ltd v Newcastle City Council [2018] NSWLEC 1105.

59 Fleetqueen Pty Ltd v Newcastle City Council [2018] NSWLEC 1105.
9.4. Preliminary Assessment of Local Character

The Study included a high-level, preliminary assessment of selected local character precincts that had been identified for further investigation in the Newcastle City Wide Heritage Study. The purpose of this assessment was to consider whether the contributing attributes of local character within the identified precincts are still evident today. These findings can inform whether further analysis of specific local character of any of the previously identified precincts is warranted.

The Study approach was to build upon existing local character work rather than reinvent the wheel. However, the Newcastle City Wide Heritage Study only identifies the local character precincts recommended for further study and not the attributes that contribute to local character. To address this gap, the Study methodology developed five questions to underpin evaluations of built form and landscape attributes in each of the nominated local character precincts60. These are summarised in Table 27. These were applied through a desktop analysis of each of the local character precincts.

These questions focused only on the built form and landscape elements of local character, recognising that planning controls are predominantly tethered to measurable, physical planning outcomes.

It is expected that further analysis work into local character will consider additional cultural, economic and environmental factors and will be informed by community views through consultation.

Table 28 shows the results of the high-level character assessment for each nominated precinct.

### Table 27. Local character assessment methodology questions

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>The precinct has not been subject to substantial redevelopment?</td>
<td>Substantial redevelopment affects the ‘look and feel’ of an area resulting in a change to local character. New buildings are often constructed in contemporary materials and are not of the style, era and scale of existing buildings, this detracts from local character. In areas where substantial redevelopment has not occurred a consistent character is likely to be more evident.</td>
</tr>
<tr>
<td>Is the existing subdivision pattern still evident?</td>
<td>Areas developed over a single period generally have a consistent subdivision and street frontage pattern. Subdivision pattern is one of the most basic elements that contribute to local character as the width of the lot determines the type and size of dwellings that can be built and the appearance of street frontages. In areas where lots have been subdivided or amalgamated resulting in differing street frontages local character is likely to be impacted.</td>
</tr>
<tr>
<td>Are building types within the precinct consistent in character?</td>
<td>An area with uniform house types and form creates a cohesiveness which contributes to the local character of the place. In areas where new building types are introduced with a built form that does not respect existing built form, local character is impacted.</td>
</tr>
<tr>
<td>Does the built form contain a consistent architectural style?</td>
<td>Areas developed during a single period also generally have a consistent architectural approach which contributes to the distinctiveness and character of the area. Newcastle has various architectural styles reflecting the City’s historical development including Pre-War (1800s–1910), Inter-War (1911-1950), Contemporary styles (1951+). New development that does not respect to the surrounding architectural style can threaten the distinctiveness and result in a loss of character.</td>
</tr>
<tr>
<td>Does the precinct have a definable tree canopy or streetscape?</td>
<td>Tree canopies contribute significantly to the overall feel of streetscapes. Larger houses on smaller lots means that many trees are being lost which negatively impacts on the character and environmental quality of an area61.</td>
</tr>
</tbody>
</table>

(Source: CPSD 2019)

60 The questions were informed by Council’s previous studies on local character to date (discussed in Section 9.2), to build on the important work already undertaken and not to reinvent the wheel.

61 Coomes Consulting 2006
<table>
<thead>
<tr>
<th>Local Character Precincts</th>
<th>The precinct has not been subject to substantial redevelopment?</th>
<th>Is the existing subdivision pattern still evident?</th>
<th>Are building types within the precinct consistent?</th>
<th>Does the built form contain a consistent architectural approach?</th>
<th>Does the precinct have a definable tree canopy or streetscape?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adamstown Brunker Road - between Olney Road and Lockyer Streets, Glebe Rd between Bryant and Date St</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Adamstown - between Lockyer, Teralba, Glebe and Fellows Streets</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Bar Beach - between Darby, Nesca and Memorial Drive</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Birmingham Gardens - between Sandgate, Moore and Wilkinson St</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>Broadmeadow - Belford St between Chatham and Samdon Street</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Carrington Cowper Street - between Robertson Street and Darvall Street</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Carrington - area between Darvall Street and Hargraves Street</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hamilton Denison St - between Dumasqu, Beaumont, Denison and Chatham St</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hexham - Old Maitland Road along riverbank</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Islington - Maitland Road between May St and the railway, Beaumont St between Maitland Road and railway</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Kotara - north of the Railway including Gregory and Grinsell St</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Lambton - between Croudace, Newcastle, Lloyd and Howe</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Maryville - west of Hannell Street to Thosby Creek</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mayfield Maitland Road - between Silsoe and Tourie</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Mayfield - area north of Maitland Road from approximately Woodstock Street to Industrial Drive</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Merewether - Between Curry, Frederick and Merewether</td>
<td>X</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Merewether Glebe - Wilton, Selwyn and Morgan Streets</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Merewether Railway Street - Railway Street between Gordon Avenue and Lingard Street, and parts of Glebe Rd</td>
<td>X</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Local Character Precincts</td>
<td>The precinct has not been subject to substantial redevelopment?</td>
<td>Is the existing subdivision pattern still evident?</td>
<td>Are building types within the precinct consistent?</td>
<td>Does the built form contain a consistent architectural approach?</td>
<td>Does the precinct have a definable tree canopy or streetscape?</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>New Lambton Alma Road</strong> - between Regent St and Wallarah St, Rugby Rd to Evescourt Rd, Regent St between Alma Rd and Avondale Rd</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>New Lambton</strong> - between Alma, Bridges, Queen and Evescourt Roads</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Stockton</strong> - between Hereford Street and the foreshore</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Stockton Garden Suburb</strong> - North of Flint Street</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tarro</strong> - between Northern, Southern, Eastern and Western Avenues</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>The Junction</strong> - Glebe Rd between Farquhar and Bruce St, Union Street between Glebe Rd and Kemp St, Kenrick St between Union and Glebe Road</td>
<td>X</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Tighes Hill Maitland Road</strong> - between Ferndale and Tighes Terrace, Elizabeth Street between Maitland Road and William Street</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tighes Hill</strong> - area east of Maitland Road from Throsby Creek to the Railway and Industrial Drive</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Waratah Hanbury Street</strong> - Hanbury Street between Sunderland Street and the Railway</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
</tr>
</tbody>
</table>

(Source: adapted from Suters Architects 1997, CPSD 2019)
Many of the precincts identified in the 1997 Newcastle City Wide Heritage Study still retain character attributes that create a distinctive local character. Those precincts with the most character attributes remaining are listed in the very high-high column. Some precincts have experienced substantial redevelopment or change since 1997, and fewer of their character attributes remain. These precincts are listed in the moderate or low-very low columns.

The assessment also considered the likelihood of development activity within each precinct over the next five to ten years, drawing on data utilised to examine the LGA’s housing demand and supply. Table 29 presents the findings of this comparison. This is intended to assist with prioritising the timing of completing more detailed assessments and making relevant adjustments to Council’s planning controls.

Hamilton, Lambton, New Lambton, Birmingham Gardens, Maryville, Mayfield, Tighes Hill and Tarro are considered the highest priority areas as they have remaining character attributes and are already experiencing high to moderate levels of development pressure. Areas that have significant remaining character attributes but are not experiencing as much development activity, such as Carrington and Kotara (north of the railway), can be considered less of a priority.

Areas experiencing high levels of development activity, but have fewer identifiable local character features, such as Adamstown, Islington, Merewether, Broadmeadow and Waratah, should be also prioritised, as communities within these areas are likely to be concerned with how new development will affect their local area.

Table 29. Local character and development assessment matrix

<table>
<thead>
<tr>
<th>Likely development activity</th>
<th>Remaining character attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Very high – high</td>
</tr>
<tr>
<td></td>
<td>Hamilton - Denison Street</td>
</tr>
<tr>
<td></td>
<td>Lambton</td>
</tr>
<tr>
<td></td>
<td>New Lambton</td>
</tr>
<tr>
<td></td>
<td>New Lambton - Alma Road</td>
</tr>
<tr>
<td></td>
<td>Adamstown - Brunker Road</td>
</tr>
<tr>
<td></td>
<td>Adamstown</td>
</tr>
<tr>
<td></td>
<td>Waratah – Hanbury Street</td>
</tr>
<tr>
<td></td>
<td>Islington</td>
</tr>
<tr>
<td></td>
<td>Mayfield - Maitland Road</td>
</tr>
<tr>
<td></td>
<td>Merewether</td>
</tr>
<tr>
<td></td>
<td>Merewether Glebe</td>
</tr>
<tr>
<td></td>
<td>Merewether Railway Street</td>
</tr>
<tr>
<td></td>
<td>Tighes Hill – Maitland Road</td>
</tr>
<tr>
<td></td>
<td>Tighes Hill – east of Maitland ROAD</td>
</tr>
<tr>
<td></td>
<td>Tarro</td>
</tr>
<tr>
<td>Moderate</td>
<td>Birmingham Gardens</td>
</tr>
<tr>
<td></td>
<td>Maryville</td>
</tr>
<tr>
<td></td>
<td>Mayfield</td>
</tr>
<tr>
<td></td>
<td>Tighes Hill – east of Maitland ROAD</td>
</tr>
<tr>
<td></td>
<td>Stockton</td>
</tr>
<tr>
<td></td>
<td>Stockton Garden Suburb</td>
</tr>
<tr>
<td></td>
<td>The Junction</td>
</tr>
<tr>
<td>Low</td>
<td>Carrington - Cowper Street</td>
</tr>
<tr>
<td></td>
<td>Carrington</td>
</tr>
<tr>
<td></td>
<td>Kotara – north of railway</td>
</tr>
<tr>
<td></td>
<td>Bar Beach</td>
</tr>
<tr>
<td></td>
<td>Hexham – Old Maitland Road</td>
</tr>
</tbody>
</table>

(Source: CPSD 2019)
9.5. Mechanisms to address local character issues

There are several planning mechanisms that Council can explore to respond to the local character issues identified in Section 9.3. Below is a high-level analysis of potential options available to Council for consideration to strengthen the role of local character in the planning process.

9.5.1. Completing a local character study

The State Government is currently reviewing the NSW planning framework to ensure that local character is recognised and enhanced through the planning process. It is likely that all councils will eventually be required to produce local character statements that identify features contributing to the existing character of an area and set expectations for desired future character.

To date, previous studies have identified several areas that may qualify as having extraordinary character in the Newcastle LGA and have recommended further strategic work to prepare and implement future local character studies.

CPSD recommends that Council prepare a local character study to provide the strategic basis for amending LEP and DCP residential controls to enhance local character across the LGA. A local character study would also serve as a reference document to assist Council’s development assessment officers in interpreting residential land use zone objectives that require consideration of local character. The study would also provide greater certainty to the local community and developers as to the desired future character of Newcastle’s residential neighbourhoods.

The study should draw on the policy considerations set out by the NSW Government Architect’s office and be informed by community consultation. It should enable the creation of locality specific controls to encourage new housing that respects the current and intended future character.

For the Local Character Study to be effective and provide clear guidance to amend LEP and DCP controls it would likely need to provide the following for each identified local character area:

- Description of the existing local character
- Desired future character statement
- Key character elements that contribute to the distinctive local character (e.g. summary of material and form, setbacks, height, landscaping, car storage, street layout etc.)
- Objectives and design requirements that respond to character elements

9.5.2. Introducing a local character overlay with locality specific controls

The State Government is considering introducing a local character overlay and supporting clause in the Standard Instrument LEP (SI LEP). If introduced it could provide an additional mechanism for Council to manage local character issues through the planning framework.

At present, there is limited opportunity in the SI LEP, other than through the establishment of HCAs, to strengthen consideration of character. Relying solely on character controls in the DCP may not ensure effective consideration of character as DCPs are non-statutory and controls can be applied flexibly. The option to apply local character overlays within the LEP accompanied by additional assessment requirements would provide statutory weight to ensure that local character controls are considered and implemented effectively.

If introduced by the State Government, Council could consider applying local character overlays to specific areas where they and the community feel that the broader zone objectives are not adequate to manage change while supporting local character. Specific locations that may be suitable locations for local character overlays are areas of Hamilton, Lambton, New Lambton, Birmingham Gardens, Maryville, Mayfield, Tighes Hill and Tarro as discussed in Section 9.4 of this Report. This recommendation
would need to be substantiated through a local character study and community consultation.

Local character overlays are intended for areas with significant or exceptional character values. Therefore, each local character area should be supported by desired future character statements and clear and measurable development controls within the DCP to ensure that development proposals can be meaningfully assessed.

9.5.3. Review of permissible residential land uses in the NLEP

The R2 Low Density Residential zone currently allows a wide range of residential land uses such as multi-dwelling housing and residential flat buildings (RFBs). Council has identified that some new multi-dwelling housing developments do not respect the intended low density character of the R2 zone, as per the objectives of the zone.

Council could consider prohibiting multi-dwelling housing and RFBs in the R2 zone to ensure that permissible land uses better reflect the low density residential character of the zone. However, it is important to understand the implications of this action on new housing supply and housing diversity.

An analysis of the Study’s housing supply audit (presented in Section 6.2) suggests that this mechanism, if implemented in isolation, would significantly impact upon future housing supply both in terms of volume and diversity. The Study’s housing supply audit found that multi-dwelling housing in the R2 zone accounts for around 16% (748 new dwellings) of all new dwellings built or under construction between mid-2016 and mid-2019. The number of RFBs built over this same period was less than 10 indicating that they are currently having little impact upon local character.

Table 30 provides a comparison of new multi-dwelling housing supply in each of the residential zones and all new housing supply in the Newcastle LGA between August 2016 and August 2019. These findings show that over 80% of multi-dwelling housing development is occurring in the R2 zone.

<table>
<thead>
<tr>
<th>Area</th>
<th>Built/ under construction</th>
<th>Approved</th>
<th>Under assessment</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>New multi-dwellings in R2</td>
<td>748</td>
<td>381</td>
<td>65</td>
<td>1,194</td>
</tr>
<tr>
<td>New multi-dwellings in R3</td>
<td>100</td>
<td>121</td>
<td>6</td>
<td>227</td>
</tr>
<tr>
<td>New multi-dwellings in R4</td>
<td>11</td>
<td>8</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>All new dwellings in the Newcastle LGA</td>
<td>4,604</td>
<td>2,721</td>
<td>1,475</td>
<td>8,800</td>
</tr>
</tbody>
</table>

(Source: CPSD housing supply audit 2019)
Table 31 shows where the highest, middle and lowest levels of multi-dwelling development activity is occurring. Areas with the highest level of multi-dwelling development activity (Elermore Vale, North Lambton, Wallsend and Shortland) are suburbs that have not previously been identified as having extraordinary local character. Multi-dwelling housing in these areas is likely to be providing more affordable and diverse housing options in the outer suburbs.

However, a high to moderate level of multi-dwelling development activity is also occurring in areas that have been identified as having a distinctive local character (Mayfield, New Lambton, Birmingham Gardens, Maryville, Adamstown and Lambton). New multi-dwelling housing in these areas may be impacting upon local character. Substantial multi-dwelling development activity is also occurring in Kotara, although not in the area identified as having distinctive local character north of the railway line.

Based on these findings, prohibiting multi-dwelling housing in the R2 zone is likely to be effective in managing impacts on local character in some residential areas, but would simultaneously reduce housing diversity and supply by a substantial degree across R2 Low density residential areas.

To better manage these competing outcomes, CPSD recommends that Council explore this approach in conjunction with the introduction of the R1 General Residential zone under the NLEP (discussed below).

Table 31. Geographical distribution of multi-dwelling housing supply (built/under construction, approved, under assessment) in the R2 zone between mid-2016 and mid-2019

<table>
<thead>
<tr>
<th>Areas where new multi-dwelling housing supply is highest (41 or more)</th>
<th>Areas where new multi-dwelling housing supply is in the middle (11 to 40)</th>
<th>Areas where new multi-dwelling housing supply is the lowest (10 or less)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elermore Vale-Rankin Park (236)</td>
<td>Maryville - Wickham (35)</td>
<td>Bar Beach - The Junction (0)</td>
</tr>
<tr>
<td>North Lambton (207)</td>
<td>Adamstown (33)</td>
<td>Cooks Hill (0)</td>
</tr>
<tr>
<td>Wallsend (182)</td>
<td>Merewether - Merewether Heights (33)</td>
<td>Hamilton - Hamilton South (0)</td>
</tr>
<tr>
<td>Shortland - Sandgate (86)</td>
<td>Jesmond (31)</td>
<td>Newcastle - Newcastle East - Newcastle West (0)</td>
</tr>
<tr>
<td>Mayfield - Mayfield East (68)</td>
<td>Lambton (29)</td>
<td>The Hill (0)</td>
</tr>
<tr>
<td>Kotara (54)</td>
<td>Maryland (21)</td>
<td>Islington - Tighes Hill (5)</td>
</tr>
<tr>
<td>New Lambton (49)</td>
<td>Georgetown - Waratah (19)</td>
<td>Stockton (5)</td>
</tr>
<tr>
<td>Birmingham Gardens (43)</td>
<td>Adamstown Heights (18)</td>
<td>Waratah West (5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beresfield - Tarro (6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Broadmeadow - Hamilton North (8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fletcher - Minmi (9)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mayfield West - Warabrook (10)</td>
</tr>
</tbody>
</table>

(Source: CPSD housing supply audit 2019)
9.5.5. Introducing an addition residential zone: R1 General Residential

Planning controls within the R2 Low Density Residential zone currently allow for a wide range of dwelling types to be built across Newcastle’s residential areas, including those identified for limited growth and with special local character.

As the R2 zone is applied widely across the Newcastle LGAs residential areas, removing dwelling types that are out of character with limited growth areas such as multi-dwelling housing will negatively impact on housing supply. There are also moderate growth areas within the R2 zone, and limited growth areas with fewer local character constraints where multi-dwelling housing is appropriate.

CPSD recommends that Council consider introducing the R1 General Residential zone in conjunction with prohibiting multi-dwelling and RFBs in the R2 Low Density Residential zone. The R1 zone could be introduced in moderate and limited growth areas with few character constraints and that have suitable access to transport, shops and services. While the R2 zone, with multi-dwelling housing and RFBs prohibited, could apply to limited and moderate growth areas with special local character or with poor accessibility to transport, shops and services.

The application of the R1 and R2 zones should be underpinned by a local character study that identifies areas of special local character where multi-dwelling housing is not consistent with the desired future character. Council should also consider zone application based on the concept of ‘Newcastle Urbanism’ and the SAFE Criteria framework set out in the Local Planning Strategy. This framework has been used to identify boundaries for residential growth based on walking distance to transport, shops and services.

This approach would geographically limit housing types that are having the largest impact on local character and amenity, while continuing to encourage housing diversity in limited and moderate growth residential areas that are less constrained. It would also more clearly identify to the community and developers where Council want development to happen, and is less discretionary than other potential planning mechanisms such as reducing floor space ratio and site coverage.

9.5.6. Review of residential land use standards and controls in the NLEP and NDCP

Standards and controls established in the NLEP and NDCP such as height, floor space ratio (FSR), setbacks, landscaping and private open space are intended to support the achievement of ‘harmony’ in the built environment and to ensure that the character of the surrounding area is ‘respected’.

The existing standards and controls regulating residential development within the R2 Low Density Residential zone are currently allowing new development to occur that is not in ‘harmony’ with the existing built environment and that does not ‘respect’ the character of the surrounding area. Particular issues raised by the community include the visual intrusion of building bulks and loss of tree canopy and private open space in areas intended for limited growth.

An alternative to prohibiting multi-dwelling housing in the R2 zone is for Council to tighten existing standards and controls within the NLEP and NDCP to address character and amenity issues identified. CPSD recommends Council consider a review of FSR standards of the R2 zone within the NLEP and storey limit, rear setback and landscaping controls for multi-dwelling housing within the NDCP. Each of these approaches are discussed below.

Reducing FSR standards: maximum FSRs in the R2 zone currently range between 0.6:1 in limited growth precincts and 0.75:1 in moderate growth precincts. These maximum FSRs are considered high for intended low density residential areas and are more characteristic of medium density residential areas. It is generally accepted by the planning profession that open suburban character is most easily maintained when the FSR of

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62 Fleetqueen Pty Ltd v Newcastle City Council [2018] NSWLEC 1105.

63 This conclusion is based on CPSDs professional experience and a review of FSR controls within the following LEPs: Byron LEP 2014, Canada Bay LEP 2013, Hunters Hill LEP 2012, Mosman LEP 2012, Randwick LEP 2012, Shellharbour LEP 2013 and Wollongong LEP 2009.
buildings does not exceed 0.5:1. CPSD recommends Council consider reducing the maximum FSR to 0.5:1 in limited growth precincts and 0.6:1 in moderate growth precincts to encourage new dwellings that are compatible with the existing low density character and amenity within these areas.

**Storey limit at rear:** In addition to reducing maximum FSRs within the R2 zone, Council could introduce a development control that places a storey limit on multi-dwelling housing within the R2 zone. An increasing number of multi-dwelling developments within the R2 zone are built to 2 storeys both at the front and rear of the site fully utilising the building envelope. This can create developments of a mass and bulk that are not compatible with the low density character of R2 zoned residential areas. Council could consider introducing a development control that restricts the storey limit for multi-dwelling housing to single storey for dwellings at the rear, this would concentrate bulk and massing to the front of the lot which is more in character with existing low density suburbs.

This approach has been applied by Canterbury-Bankstown City Council with the following development control within Section 7 of the Bankstown DCP 2015:

“7.1 The storey limit for multi-dwelling housing is 2 storeys for front dwellings facing the street and single storey for the remaining dwellings at the rear.”

**Increasing landscaping, open space and rear setback controls:** A key local character issue identified by the community is the loss of tree canopy associated with infill residential development. Reducing FSRs and limiting storeys at the rear is unlikely to have a positive impact on site coverage and tree retention. CPSD recommends that Council consider a review of landscaping, open space and rear setback controls for multi-dwelling housing to encourage the retention of existing trees and planting of new trees at the rear of the site. Council could consider a rear setback requirement of 4 to 5 metres for multi-dwelling housing to be used as communal open space and for deep soil planting.

Reviewing standards and controls for multi-dwelling housing, such as those discussed, will help address key local character issues identified by the community and will better support the achievement of ‘harmony’ in the built environment.

Importantly, Council should review standards and controls in conjunction with a review of the controls required by the Low Rise Medium Density Housing Code. Currently there is little developer take up of multi-dwelling housing delivered as complying development through the Code. However, tightening standards and controls under the NLEP and NDCP may encourage further take up of the complying development approvals pathway. If this occurs the community and Council will have limited input in addressing local character and amenity outcomes of multi-dwelling housing.

9.5.7. Undertake an investigation of Heritage Conservation Areas within the R3 Medium Density Residential zone

Council has noted that development is occurring within HCAs that does not respect the heritage significance of the area, this is particularly the case in areas where an R3 Medium Density Residential zone applies over a HCA. This issue has previously been identified in Council’s Local Planning Strategy which includes the following strategic action for heritage:

“Evaluate the extent of R3 Medium Density zone within heritage conservation areas where identified desired character is inconsistent with zone objectives” – City of Newcastle, 2015a, p. 74

CPSD recommends that Council pursue this investigation to address this ongoing issue. A review of the R3 zone boundary within HCAs may also be considered in conjunction with other mechanisms including a review of DCP controls for HCAs.

CPSD notes that a previously suggested approach to address this issue is to strengthen the consideration of heritage within the R3 zone objectives. However, this is likely to have little effect as Clause 5.10 of the NLEP already requires consideration of heritage significance.
10. PLANNING FOR HOUSING IN NEWCASTLE

This section highlights the key issues emerging from evidence presented above to provide focused recommendations for future planning and plan-making for housing in the Newcastle LGA. This recognises that the available evidence indicates that the LGA has a sufficient supply of land available to accommodate the forecasted housing requirements in sheer numbers, but that additional efforts are required to ensure that the new housing that is delivered is meeting the community’s needs and expectations.

Discussion in this section focuses on where additional strategic planning efforts and policy development are required to:

- Establish a consistent and commonly-understood spatial planning framework that can be used to review and update land use and development controls, and otherwise guide investment to support residential development;
- Improve planning and policy for the largest ‘supply gaps’, particularly with respect to housing products for cohorts with specific needs; and
- Enhance the ‘lived experience’ of Newcastle’s residents, with considerations for enhancing the quality and liveability of housing as this relates to human and population health, overall cost of living, and local character.

Recommendations are also provided in each sub-section for improvements to assist with improving and monitoring the local housing ‘evidence base’ to inform future strategic planning initiatives.

10.1. Spatial planning

Long-term planning and plan making relies on a consistent evidence base to monitor past trends and progress over time, and to provide a basis for modelling future change scenarios. Aligning data-collection and reporting within a common spatial framework is fundamental to this process.

The current spatial framework to plan for housing in Newcastle includes several elements that have been inherited from previous strategy work completed separately by the NSW State Government and Council. These include:

- Thirty community profile areas, which are individual suburbs (or combinations thereof) covering the whole of the LGA. These are currently used for ongoing demographic analysis and forecasting (.id profile) and were the basis for neighbourhood-level visions and objectives in Council’s Local Planning Strategy.
- Seven catalyst areas, which were identified in the GNMP as places of metropolitan significance that need a collaborative approach to support the delivery of new jobs and homes. The higher-level of change anticipated in each of these areas will influence housing demand and supply throughout the LGA. Four of these areas have also been assigned specific residential growth delivery targets.
- A series of urban renewal corridors, which were most recently described in the GNMP as locations that will develop into high amenity areas with frequent and accessible transport, with the potential to be home to more people if planned well. Five corridors have been identified in previous regional and local strategies and incorporated into Council’s DCP, which includes strategic targets for a desired number of additional dwellings. The GNMP identifies three additional broad areas as a focus for further investigation and planning as urban renewal corridors.
- A series of residential growth precincts, identified by category (e.g. substantial, moderate, or limited), in Council’s Local Planning Strategy which have been mapped and incorporated into the DCP. Precinct categorisations are used to establish form-based guidelines for the design of residential developments as relevant to each category (e.g. limited, moderate or substantial growth), regardless of location (e.g.
suburb). In their current form, these precincts are not assigned growth targets in relation to a desired number of additional dwellings.

Currently, the spatial planning framework for housing provides a complex basis for plan-making. This sub-section provides recommendations to improve the spatial planning framework for Council to consider when preparing its LSPPS and Local Housing Strategy, with the aim of better aligning metropolitan and local-level planning in a way all stakeholders can readily understand.

### 10.1.1. Housing planning and profile areas

Long-term planning and plan making relies on a consistent evidence base to monitor past trends and progress over time, and to provide a basis for modelling future change scenarios. Aligning data-collection and reporting within a common geographical framework is fundamental to this process. This overarching framework should encompass the whole of the LGA to account for changes to residential development boundaries (e.g. re-zonings or up-zonings) that may occur over time.

At present, 30 ‘community profile areas’ covering the whole of the Newcastle LGA are used by Council and others for the purpose of ongoing demographic analysis and forecasting. These broadly align with established suburb boundaries, which rarely change, providing a long-term consistent basis for tracking population and dwelling data collected through the census.

These ‘community profile areas’ were recently utilised in Council’s Local Planning Strategy to describe neighbourhood-level planning outcomes (vision, objectives, and forecasted changes relevant to residential development). They were also utilised in this Study to disaggregate data and analysis to smaller areas, including our audit of the housing supply pipeline.

Alternative approaches to establishing housing profile and planning areas have been utilised elsewhere in NSW. These tend to define smaller areas based on people’s preferred search locations when looking for a new home to buy or rent (utilising migration data and surveys), and/or broad infrastructure catchment boundaries. This approach could provide a more meaningful basis for considering gaps in the supply of certain types of housing to ensure people have a range of options available to them within their preferred local area for the whole of their lives, and for aligning infrastructure planning and funding mechanisms to better align with growth and change.

**Recommendations for establishing and monitoring housing planning and profile areas:**

1. Continue utilising the 30 established community profile areas covering the whole of the Local Government Area as a basis for establishing dwelling forecasts and monitoring growth against these. This should include identifying opportunities to automate Development Application and Complying Development Certificate information as it comes in to keep the supply pipeline information up to date.

2. In the longer term, review the suitability of the current ‘community profile areas’ in the context of planning for future housing, and related infrastructure needs. Refer to studies completed by SGS for the Lower Hunter for more information on areas previously considered.
10.1.2. Catalyst Areas

The GNMP identifies 7 Catalyst Areas within the Newcastle LGA, which are expected to be the focus of future place-based planning. Refer to Appendix 3 for a more detailed review of each Catalyst Area’s role in delivering housing and a summary of current residential development activity.

Three Catalyst Areas predominantly relate to employment-generating uses. While these Catalyst Areas are not expected to be locations for significant residential growth, the provision of jobs and services in these locations will have a spatial implication for planning for housing across the LGA.

- Newcastle Port – 500 additional jobs;
- John Hunter Hospital – 1,700 additional jobs; and
- Beresfield-Black Hill – 800 additional jobs.

Four Catalyst Areas have been assigned specific targets for residential growth in the GNMP, which will form the basis for future planning and plan-making.

- Newcastle City Centre - 4,000 additional dwellings, 7,750 additional jobs, and a major destination for visitors;
- Broadmeadow - 1,500 additional dwellings; 550 additional jobs, and a major destination for sporting and events;
- Callaghan - 750 additional dwellings, 1,200 additional jobs, and a major destination for students; and
- Kotara - 400 additional dwellings, 800 additional jobs, and a major destination for retail.

The delivery of residential growth to achieve the dwellings targets assigned to each of the Catalyst Areas will rely heavily on private-sector investment. The expectation of changes to land use and development controls will influence investment decisions in these locations. Providing greater certainty to the market as to the timing of these changes, and interim procedures for considering land use changes in the meantime, can facilitate better outcomes to catalyse supply.

As the preferred location for metropolitan-level jobs and services, each Catalyst Area is also a focus area for the provision of specialised forms of residential development, including social and affordable housing, specialised disability housing, student accommodation, etc. Identifying desired outcomes for these types of products, supported by suitable policies and guidelines can also assist with providing greater certainty for investment.

Recommendations for Catalyst Areas:

3. Utilise the Catalyst Area dwelling targets identified in the Greater Newcastle Metropolitan Plan to provide further guidance as to the preferred types and mix of dwellings. This should include considerations for social and affordable housing, housing for people with a disability or high care needs, and student accommodation.

4. Prepare a policy and implementation program for considering changes to land use and development controls in Catalyst Areas. This should identify interim processes available for consideration of changes in advance of comprehensive (whole-of-area) studies.
10.1.3. Urban Renewal Corridors

The GNMP identifies a series of Urban Renewal Corridors across the Newcastle LGA and describes a two-stage approach to planning for these areas, based on established (Stage 1) and investigation (Stage 2) corridors.

Established (Stage 1) Urban Renewal Corridors

Five Urban Renewal Corridors have been identified through previous plans or strategies, with clearly defined boundaries and controls already incorporated into Council’s LEP and DCP. These are expected to be the focus for Council to amend local plans based on feasibility testing, and the GNMP broadly encourages Council to identify strategies to achieve urban densities of 50-75 jobs and people per hectare. Appendix 2 provides a more detailed review of each Established (Stage 1) Urban Renewal Corridor. This review did not reveal any significant constraints to development arising from environmental factors. Planning controls within several precincts within these corridors do appear to limit growth potential, warranting further investigation.

Feasibility also appeared to be a limiting factor to the take-up of medium-density residential development across several of the Established (Stage 1) Urban Renewal Corridors, based on anecdotal evidence. This was described as relating to lower and more volatile land values in each of the corridors.

The higher take-up in the Adamstown corridor has been described as resulting from high-risk investment decisions by specific investors rather than a result of coordinated planning efforts. Advice from the development industry indicates private investment is stimulated by public investment and expenditure in renewal areas. This is evidenced by the success of urban renewal in Newcastle City Centre, where there has been a strong focus of public sector investment and expenditure in the public domain and public transportation.

In recent years, Council has focused investment in public domain planning and capital works in Newcastle City Centre and selected Local Centres. To date, eight Local Centres have been the subject of Public Domain Planning, none of which are located in an Established (Stage 1) Urban Renewal Corridor.

Recommendations for Established (Stage 1) Urban Renewal Corridors

5. Review and update planning controls for each established (Stage 1) Urban Renewal Corridor, drawing on the information presented in Appendix 2, and the guidelines provided in this Report
6. Prepare public domain plans for each established (Stage 1) Urban Renewal Corridor to provide a focus for public sector investment and renewal.
7. Align data-collection and reporting mechanisms to track the following for each established (Stage 1) Urban Renewal Corridor:
   - Residential development approvals
   - Residential development completions
   - Development of different housing types (detached, attached 1-2 storeys, attached 3+ storeys)
Investigation (Stage 2) Urban Renewal Corridors

The GNMP identifies three broad areas as a focus for further investigation and planning as Urban Renewal Corridors. These are:

- The A15 corridor (Hamilton to Lambton, including Georgetown and Waratah); and
- Russell Road corridor (Broadmeadow to New Lambton); and
- Glebe Road corridor (Merewether to The Junction).

Much like the Catalyst Areas, future planning for the Investigation (Stage 2) Urban Renewal Corridors will rely on new studies to support land use and development controls changes, and other mechanisms to attract private and public investment. The expectation of changes to land use and development controls will influence investment decisions in these corridors. Providing greater certainty to the market as to the timing of these changes, and interim procedures for considering land use changes in the meantime, can facilitate better and more cost-effective supply outcomes.

Recommendations for Investigation (Stage 2) Urban Renewal Corridors:

8. Prepare a policy and implementation program for considering changes to land use and development controls in investigation (Stage 2) Urban Renewal Corridors. This should identify interim processes available for consideration of changes in advance of comprehensive (whole-of-corridor) studies.

9. Investigate each (Stage 2) Urban Renewal Corridor to:
   - consider its role and function within the broader network of centres and urban renewal;
   - define the boundary of properties expected to be the focus of new development;
   - identify growth targets, including additional dwellings and/or jobs as a basis for establishing land use and development controls;
   - within these targets, identify desired outcomes for, at minimum, social and affordable housing, housing for people with a disability or high care needs, and student accommodation.
10.1.4. Residential growth in and around Local Centres

Residential development will continue to occur in locations outside the Catalyst Areas and Urban Renewal Corridors identified by the GNMP. Council’s current approach is to encourage growth in locations that are readily accessible to a major Local Centre or railway station (e.g. walkable within 10 minutes). This is understood to be the basis for the residential growth precincts that are most recently reflected in Council’s Local Planning Strategy and have been mapped and incorporated into the DCP.

Commercial Centres across the LGA have been defined and categorised in Council’s Local Planning Strategy. The City Centre is identified as the Regional City. Other categories include Major Local, Minor Local, Neighbourhood, and Specialised Centres.

Several of the Centres already fall within the geographical scope of a Catalyst Area or Urban Renewal Corridor, and land use and development controls would be reviewed in conjunction with these. Planning controls for other Centres should also be reviewed to provide opportunities for greater residential densities in areas that either already or may in future benefit from convenient access to jobs and services. This may rely on the re-categorisation of some centres to Major Local Centres, to provide a common understanding of the future role and function of the locality.

Table 32 provides preliminary recommendations for centres that could be investigated to identify controls or other mechanisms that may facilitate greater residential densities. This identifies centres that are not currently considered Major Local Centres within areas but are expected to experience growth pressures, either as a result of deliberate urban renewal efforts or through other drivers. This suggests Council may need to identify specific projects (outside initiatives for Catalyst Areas and Urban Renewal Corridors) to review planning controls for centres in:

- Existing neighbourhoods like Cooks Hill and Stockton, recognising their easy accessibility to Newcastle City Centre.
- Greenfield areas like Fletcher and Maryland, where a high rate of growth is already occurring. These areas will rely on the establishment of controls ahead of growth to ensure higher residential densities can be achieved in future years.

Planning and plan-making for each of these centres should consider the capacity for residential growth, the need for targets to support specific housing needs (described later in this Report), and improvements to the public domain.

Recommendations for residential growth in and around centres:

10. Review the current hierarchy of centres within the LGA to consider re-categorising centres in areas planned for higher levels of growth as Major Local Centres, as a basis for reviewing land use and development planning controls. Refer to Table 32 for preliminary considerations. This should also include a review of Appendix C of Council’s Local Planning Strategy to determine if the recommended future zonings are still appropriate.
### Table 32. Recommended Spatial Framework for Local Centres in the Newcastle LGA

<table>
<thead>
<tr>
<th>Recommended Spatial framework category assignment</th>
<th>Established Major Local Centre As per Council’s Local Planning Strategy</th>
<th>Recommended for investigation as a Major Local Centre or Urban Renewal Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Catalyst Area</strong></td>
<td>▪ Broadmeadow</td>
<td>N/A</td>
</tr>
<tr>
<td>▪ Kotara</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Warabrook</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Urban Renewal Corridor</strong></td>
<td>▪ Adamstown (Brunker Rd)</td>
<td></td>
</tr>
<tr>
<td>Established (Stage 1)</td>
<td>▪ Hamilton (Tudor St)</td>
<td></td>
</tr>
<tr>
<td>▪ Islington</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Mayfield</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Urban Renewal Corridor</strong></td>
<td>▪ A15 corridor</td>
<td></td>
</tr>
<tr>
<td>Investigation (Stage 2)</td>
<td>▪ Hamilton (Beaumont St)</td>
<td></td>
</tr>
<tr>
<td>▪ Waratah (Station St)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Georgetown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Russell Rd corridor</td>
<td>▪ Lambton</td>
<td></td>
</tr>
<tr>
<td>▪ New Lambton</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Glebe Rd corridor</td>
<td>▪ Merewether</td>
<td></td>
</tr>
<tr>
<td><strong>Major Local Centre</strong></td>
<td>▪ Waratah (Kmart)</td>
<td></td>
</tr>
<tr>
<td>▪ Beresfield/Tarro</td>
<td></td>
<td></td>
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<tr>
<td>▪ Jesmond</td>
<td></td>
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<tr>
<td>▪ The Junction</td>
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<tr>
<td>▪ Wallsend</td>
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<tr>
<td>▪ Warabrook</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Infill</strong></td>
<td>▪ Cooks Hill (Darby St)</td>
<td></td>
</tr>
<tr>
<td>▪ Stockton</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Greenfield</strong></td>
<td>▪ Fletcher</td>
<td></td>
</tr>
<tr>
<td>▪ Maryland</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 27. Recommended spatial framework for Major Local Centres in the Newcastle LGA
10.2. Needs-based planning

Meeting the housing needs and expectations of some groups within the community requires a greater planning effort. This Study addressed ongoing concerns in relation to four main groups:

- People with limited incomes, relying on social and affordable housing;
- People living with a disability, including frail elderly people, relying on SDA and residential care facilities;
- Students; and
- Retired people.

Discussion in this section focuses on where additional strategic planning efforts and policy development are required to:

- Improve planning and residential development outcomes for the four main groups described above; and
- Identify and accommodate other needs-based groups that may emerge over time.

With the exception of SAH, there is limited opportunity to mandate or otherwise levy for the provision of the residential products upon which these groups rely. The approach described seeks to establish needs-based targets in relevant locations as a signal to the market, and support this with suitable policy mechanisms that facilitate or incentivise development to stimulate supply.

10.2.1. Social and affordable housing

Evidence discussed in Section 7.1 suggests a significant supply gap in social and affordable housing in the Newcastle LGA. At 2016, this related to an existing underlying demand in the order of 7,000 to 7,500 SAH units, and supply of 3,907 social housing (combined public housing, community housing, and Aboriginal housing) units and 206 affordable units. Our pipeline audit did not identify any new social housing development projects, and the 132 SAH units in the pipeline fall substantially short of the assumed underlying demand.

Council has committed to increasing the supply of SAH in Newcastle and has been working with community housing providers and the State Government to deliver new SAH projects across the LGA. However, existing projects are expected to contribute less than 2% of SAH needs as currently estimated.

In the coming years, the demand for SAH in the Newcastle LGA is expected to increase, driven by the in-migration of students, an aging population, and the creation of lower-wage jobs. Without substantial intervention, the supply of SAH is simultaneously expected to diminish as the current supply of publicly owned social housing reaches the end of its functional life, and NRAS funding (subsidising below-market-rent units) is discontinued.

This issue is not unique to Newcastle. There is a need, Australia wide for significant investment in SAH. SAH Policy and delivery mechanisms currently available in NSW are highly complex, and subject to ongoing review.

Council has the opportunity to impose development requirements, including through:

- The collection of development levies or requirement of works-in-kind (e.g. through conditions of consent, or Planning Agreements); or
- On-site requirements (e.g. percentage of units must be SAH)
Four separate models to leverage SAH funding or direct provision through the planning approvals process are considered in Table 33. Each of these would only be effective in specific locations or circumstances. Identifying these locations and circumstances as early as possible and advocating for SAH through the planning process will assist with delivery over time.

<table>
<thead>
<tr>
<th>Model</th>
<th>Principle</th>
<th>Levy examples</th>
<th>Suitable locations or circumstances</th>
</tr>
</thead>
<tbody>
<tr>
<td>User pays</td>
<td>Proponents pay according to a share of usage of planning infrastructure</td>
<td>Section 7.11 plans</td>
<td>None currently This model requires establishment of a nexus between additional development and SAH.</td>
</tr>
<tr>
<td>Impact mitigation</td>
<td>Proponents contribute 100% of the cost based on the creation of additional or reduction of existing SAH.</td>
<td>Conditions of consent</td>
<td>Re-development of existing SAH. Other circumstances would rely on establishment of a nexus between additional development and SAH.</td>
</tr>
<tr>
<td>Value sharing (by site/project)</td>
<td>Proponents share part of the uplift in land facilitated by spot rezoning or DA approval (development standard variation under clause 4.6)</td>
<td>Planning Agreements</td>
<td>Where planning controls are already established and not expected to change within 5 years. Catalyst areas (City Centre, Callaghan)</td>
</tr>
<tr>
<td>Value sharing (by precinct) Also known as Inclusionary provisions</td>
<td>Proponents share a part of the uplift in land by meeting on-site development obligations or payment of levies incorporated into planning controls.</td>
<td>Affordable Housing Contribution Schemes</td>
<td>Where an area is expected to be up-zoned Catalyst areas (Kotara and Broadmeadow), Urban Renewal Corridors, other Local Centres identified as preferred growth locations (e.g. Hamilton)</td>
</tr>
</tbody>
</table>

(Source: SGS Economics & Planning n.d.)

Council can also support the delivery of SAH by partnering with community housing providers or otherwise facilitating partnerships between private developers and community housing providers. This recognises the challenges community housing providers face when trying to deliver projects in higher-value areas like the City Centre. It relates to their ability to access finance, higher cost of construction, etc.

Support for community housing providers can be achieved through various mechanisms, including:

- Advocating for the including of SAH to new development projects during pre-lodgement discussions with applicants;
- ‘Gifting’ or heavily subsidising access to Council-owned land for the use of SAH;
- Waiving or discounting development levies where SAH forms part of a development;
- Discounting on-site requirements (e.g. car parking) where SAH forms part of a development.

These types of incentives must be signalled to the market in some way, such as through the introduction of a Council policy or signposting in LGA-wide plans and strategies.
Selected locational considerations for SAH

Newcastle City Centre (including Wickham): The City Centre is expected to remain the largest destination for jobs, services and visitors. It is readily accessible by public transport. Planning controls for the area are relatively well-established and there is already a considerable amount of development already in the pipeline. A Planning Agreement policy that enables new projects to access ‘bonus provisions’ in exchange for SAH provisions on-site or cash-in-lieu payments would be most suitable in this area.

Broadmeadow and Kotara: As Catalyst Areas, Broadmeadow and Kotara are nominated as focus areas for residential growth in the long-term. Broadmeadow, in particular, is readily accessible to public transport (rail, bus and potentially light rail). This location is immediately suitable for a Planning Agreement SAH policy approach and would be suitable for Inclusionary Provisions in line with anticipated broadscale changes to land use and development controls.

Kotara may be a suitable location for increased residential densities over the long-term in conjunction with inclusionary provisions for SAH. However, more detailed investigation is needed to define Kotara’s role as a catalyst area. Further investigations should assess potential for increasing residential densities against Kotara’s future role in the employment land hierarchy, and the viability of improving access to Kotara Train Station.

Hamilton: This Local Centre is readily accessible by public transport (rail and bus) and is well-served by local amenities (e.g. supermarket, open space, etc.) Subject to further investigation, specific sites north or south of the rail line within 800m of Hamilton railway station may be suitable for increased residential density over the long-term, which would enable the implementation of Inclusionary Provisions in line with any broadscale changes to land use and development controls. Areas of Hamilton are within a Heritage Conservation Area or have distinctive local character which will require consideration at the investigation stage.

Recommendations relating to Social and Affordable Housing:

11. Further investigate supply and demand considerations for social and affordable housing in the Newcastle Local Government Area, in consideration with social and affordable housing providers.

12. Incorporate investigations for social and affordable housing into the review of land use and development controls for all Catalyst Areas and Urban Renewal Corridors, including the preparation of Affordable Housing Contribution Schemes that underpin inclusionary provisions.

13. Establish a Council policy that identifies the locations and circumstances in which Council would consider Planning Agreements as a mechanism to re-zonings and development application approvals where projects incorporate social and affordable housing funding or on-site provision.

14. In the long term, review the potential of establishing a nexus between additional development and social and affordable housing to enable, for example, Section 7.11 funding or conditions of consent to support additional social and affordable housing.
10.2.3. SDA and Residential Care Facilities

Evidence presented in Section 7.2 suggests more detailed research is required to better understand and quantify needs for people needing in-home modifications or residential care facilities in the Newcastle LGA in order to establish a suitable policy response. The information that is currently available suggests that the SDA and residential aged care facilities within the LGA already have a high occupancy rate, and there are very few projects in the pipeline.

The number of households or individuals requiring SDA, other in-home modifications, or placements in residential care facilities is expected to grow. The most dominant driver being an increase in the number of people over the age of 75 (residential aged care). However, there is also expected to be a growing market for SDA accommodation as additional public funding becomes available through the NDIS.

While SDA and residential care facilities are privately-driven markets, they cater for some of the most vulnerable people in our community. The availability and location of this type of accommodation is also relevant to users’ level of care and lived experience. Council can support this by encouraging facilities to locate in areas that already have a higher level of access to health or other support services, and a public domain that safely accommodates all mobility levels. The approach for doing this would be similar to that recommended for SAH.

The preferred model of care is to support people with a disability or declining health to continue living independently for as long as possible. This will rely on the up-take of more adaptable forms of housing through new development projects. Better understanding the effectiveness of the current DCP requirements (Silver-level universal design features) will assist with future policy development in this regard. It may be appropriate to identify an Adaptable Housing Target in locations where a higher level of development activity is occurring or expected, to enable more residents to age-in-place in coming decades.

Recommendations to support people with a disability or high care needs:

15. Further investigate supply and demand considerations for specialist disability accommodation and residential care facilities in the local government area, in consultation with disability and carer support service providers.
16. Identify policy mechanisms to facilitate the incorporation of specialist disability accommodation or residential care facilities in locations with a higher level of accessibility.
17. Identify the level of take-up of Silver Level universal design features through recent approvals.
18. Consider establishing an 'adaptable housing target' in select locations to support longer-term opportunities for people to age-in-place.
10.2.4. Student accommodation

Tertiary education is one of Newcastle's fastest growing sectors, and evidence relating to student accommodation was discussed in Section 0 of this Report. This suggests that purpose-built student accommodation options are only catering for a fraction of the student population in Newcastle, which means students are heavily reliant on the private rental market. The correlation between suburbs with higher student populations and suburbs with higher proportions of households in rental stress suggests a lack of affordable student housing across the LGA.

Further research is required to better understand student housing needs and expectations based on the likely mix of students living in the LGA in future. This recognises the diversity of needs, depending on the stage of education (e.g. first year or postgraduate), cultural background (e.g. international students) and family situation (e.g. living at home or supporting a family of their own).

There is limited opportunity to mandate the or otherwise levy for the provision of student accommodation through the planning approvals process. That means Council will need to rely on other mechanisms, including advocacy and incentivisation to stimulate supply. Establishing Student Housing Targets in suitable locations will assist in this regard. This would be immediately appropriate for the City Centre, where substantial growth of tertiary institutions is already occurring, and surrounding suburbs with existing rail or future light rail connections to both the City Centre and Callaghan (e.g. Wickham, Hamilton, and Mayfield).

The process for assessing student accommodation DAs may also warrant review. This recognises that there is currently no land use definition for student accommodation under NSW planning legislation. Consequently, student housing is typically approved as another type of residential accommodation; most commonly boarding house, residential flat building, or dwelling housing. There may be advantages to preparing a DCP to specifically address development and design considerations for student housing.

Finally, students may need additional assistance to find appropriate accommodation, particularly if they are new to the local area. This is especially relevant for students from CALD backgrounds. Council may have a role to play working with education providers to advocate for improvements in this regard.

Recommendations for student housing,

19. Work with education providers to further investigate supply and demand considerations for student accommodation in the Local Government Area to better characterise the anticipated future student population.

20. Work with education providers to consider establishing a ‘student housing target’ in select locations as a signal to the market. This should be supported by suitable policy mechanisms that enable Council to advocate for and incentivise the provision of student housing.

21. Consider preparing a DCP to specifically address development and design considerations for student housing.

22. Work with education providers to identify opportunities to provide or otherwise advocate for services or technologies that can better assist students to find accommodation.
10.2.5. Retirement living

People’s housing requirements and expectations change when they retire. This is reflective of the change in lifestyle that occurs as they transition out of the workforce. The type home they eventually choose is influenced by a range of factors, including financial means, health considerations, and family / social ties.

The proportion of retired people living in the Newcastle LGA is expected to grow, including as the resident population ages and as more retired people choose the area as their preferred location to settle. Increasing the supply of housing that allows people to age-in-place and allows households to downsize as they shrink in size can create greater efficiencies across the whole of the housing market.

The current trend in retirement living involves larger dedicated seniors housing developments, such as retirement villages, which may or may not include residential aged care facilities. This type of development is a defined use for the purpose of applying planning controls. Seniors housing is generally permissible with consent in any urban zone through State-level planning instruments.

Within Newcastle, challenges may arise where seniors housing is proposed:

- **On the ground floor of a building in a commercial zone**, which may require seniors housing developments within the City Centre or other Local Centres to be delivered as mixed-use or buildings or shop-top housing. The requirement for ground-floor commercial uses may affect the financial feasibility of some projects, particularly in urban renewal corridors.
- **On non-urban zoned land**, which tends to relate to privately-run recreational clubs or sites adjoining greenfield residential subdivisions. Where eligible, these proposals rely on an additional level of assessment to secure a Site Compatibility Certificate from the State Government, which introduces a higher level of risk at the planning stage.

Seniors’ housing needs are diverse and retirement village living only caters to a proportion of seniors, particularly those who are over 75 and are expecting to require increasing levels of care. Local evidence suggests most retired residents living in the Newcastle LGA prefer to remain in their family home for as long as possible, and only re-locate to a more accessible low/maintenance home when they must (e.g. for financial or health reasons).

There appears to be limited options available for seniors that accommodate their housing needs and are in their preferred locations, which means this group often makes a large trade-off when choosing a new home. While there is an existing pipeline of apartment and resort-style products, early consultation indicates there may be an unmet demand for 2-3 bedroom units (attached or detached) that are single storey, adaptable, on flat land, with a small garden to maintain and within walking distance to shops, medical facilities and public transport. Facilitating new opportunities for this style of housing will be important to help meet the housing needs of Newcastle’s aging population. This could be supported by encouraging more:

- Low-rise medium-density housing in suitable locations; and
- Single dwellings with adaptable floor plans that allow them to be eventually divided into smaller housing units over time.
Recommendations to support retired people:

23. Further investigate the housing preferences of seniors currently living in the community as well as the expectations of residents expected to reach retirement age within the next 10 years to incorporate a longer-term perspective in forward planning.

24. Review the controls for seniors housing in Catalyst Areas, Urban Renewal Corridors and Local Centres to consider locations or circumstances where this would be acceptable as a ground-floor use.

25. Review the permissibility of seniors housing on non-urban zoned land and consider introducing this as an additional use, permissible with consent, in suitable locations.

26. Review, at suburb level, the extent to which the Low-Rise Medium Density Housing Code is applicable within the Local Government Area to determine whether additional policy development is required to stimulate supply in suitable locations.

### 10.2.6. Other needs-based groups

While this Study focused on four main groups that have specific housing needs, we recognise there are other groups that may also benefit from greater consideration through future planning and plan-making. Early considerations are presented below, noting this is not intended to be exhaustive.

The Awabakal Local Aboriginal Land Council has substantial landholdings across the LGA. Part of its service delivery includes the provision of housing for eligible Aboriginal households. It currently manages a portfolio of 33 social housing properties. There may be underlying demand for additional housing, noting the current Housing Waiting List is identified as approximately 5–7 years. There may also be additional opportunities for the LALC to offer private-market properties (to Aboriginal and non-Aboriginal households) through the development of land within its broader holdings. Further consultation would be required to support policy development.

A greater proportion of households are facing financial difficulty, making it increasingly difficult to become or remain homeowners. This trend is not unique to Newcastle and expected to continue. Cooperative housing and tiny home models have been suggested as an attractive form of housing for first-time homebuyers, couple households without children, students and seniors, as they can provide a more affordable housing option. Some may also offer both private and communal space to encourage a higher level of social interaction. The suitability of existing controls to cater for these emerging projects is currently uncertain.

Recommendations to consider other needs-based groups:

27. Engage with Awabakal Local Aboriginal Land Council to review opportunities that would increase the supply of their social housing portfolio and consider the development potential of their broader land holdings within the Local Government Area.

28. Further research emerging residential products such as cooperative housing or tiny homes and consider a partnership model to deliver pilot projects.
10.4. Enhanced quality and liveability

People’s lived experience is an important determinant of their quality of life. This is strongly influenced by the quality of the built environment around them, and the extent to which they are impacted by and identify with their local neighbourhood.

Discussion in this section focuses on where additional strategic planning efforts and policy development are required to improve the quality and liveability of residential areas across the LGA, with considerations for:

- Local character;
- People’s health and wellbeing; and
- Other cost-of-living considerations.

The concepts introduced in this section draw on emerging evidence bases and may rely heavily on Council leadership to assist with raising people’s awareness as to their relevance and importance.

10.4.1. Local character

The importance of local character in the Newcastle LGA context is discussed in Section 9 of this Report. This recognises the historical efforts made to identify and describe areas across the LGA where local character is strongly reflected in the built environment. Protecting and enhancing these features through the progressive densification of neighbourhoods or large-scale re-developments will continue to be a key challenge for planners.

Our review identified that people are most likely to experience a loss of local character where new housing is of a bulk and scale that is inconsistent with surrounding development. The impact to the streetscape is particularly noticeable where development occurs at the rear of a lot and the tree canopy is removed.

Planning controls currently allow for a wide range of dwelling types to be built across Newcastle’s residential areas, including those expected to experience limited growth. This approach may facilitate new housing that is not in keeping with local character, including attached or multi dwelling developments in the least-walkable or otherwise under-serviced areas. This is already considered a major concern for residents across the LGA and inconsistent with the outcomes for limited growth precincts identified in Council’s LPS.

The State Government is currently reviewing the NSW planning framework to ensure that local character is recognised and enhanced through planning. It is likely that all Councils will eventually be required to undertake local character studies and incorporate standards and controls within their LEP or DCP to strengthen the consideration of local character in planning and development assessment. Previous studies have identified several areas that may qualify as having extraordinary character. These should be reviewed to determine whether they may be eligible for enhanced LEP or DCP controls, drawing on the assessment provided in Section 9.4 of this Report.
Recommendations to strengthen the role of Local Character in the planning process:

29. Prepare a local character study to provide the strategic basis for amending LEP and DCP standards and controls to enhance local character across the LGA. This should draw on the policy considerations set out by the NSW Government Architect’s office. It should enable the creation of local character statements and locality specific controls to encourage new housing that respects the current and intended future character of residential areas.

30. Further investigate and identify the preferred planning mechanisms to strengthen the consideration of local character in the planning framework, drawing on the assessment of various planning mechanisms presented in Section 0 of this Report.

31. Further investigate any design or local character issues with the Low Rise Medium Density Housing Code and update controls within the DCP accordingly. The investigation should consider the identification of areas with special local character suitable for exclusion from the Code.

10.4.2. People’s health and wellbeing

How we plan for, and deliver new residential developments, and manage residential areas, strongly influences people’s health and overall wellbeing. This includes factors such as (but not limited to):

- Temperature. Over-exposure to high or low temperatures can affect people’s respiratory and cardiovascular health. In extreme cases, this can result in death.

The Newcastle LGA population snapshot suggests further investigation is warranted to consider the extent to which housing conditions may already be contributing to or otherwise exacerbating poor health outcomes for residents. This recognises that, in 2018, the LGA had higher rates of asthma, chronic obstructive pulmonary disease, and circulatory disease than the NSW average. The population also showed much poorer mental health outcomes than the NSW average, relating to high or very high psychological distress, chronic mental and behavioural problems, and hospitalisation rates for intentional self-harm.

Each of the above factors are strongly influenced by how homes are built and maintained, with structural deficiencies, lack of insulation and air tightness, and lack of heating/cooling systems being major contributors to poor health outcomes. There are opportunities to strengthen considerations for these types of factors through the planning process, and through other Council policies and programs (e.g. enforcement and education). This would rely on establishing a stronger evidence base to support decision making.

Recommendations to strengthen considerations for people’s health and wellbeing in the planning process:

32. Establish a local evidence base for Housing and Health, drawing on the World Health Organisation guidelines.

33. Consider incorporating development standards to improve thermal and acoustic outcomes within all new residential developments (e.g. requirements for double-glazed windows, etc.) into the DCP.
10.4.3. Other cost-of-living considerations

In addition to health considerations, other factors associated with residential development and the quality of the built environment in residential neighbourhoods can also influence the overall cost of living. This can often be a more important consideration than the price of a house when determining whether an area is affordable. Key factors generally include (but are not limited to):

▪ Energy and Water. The ability for people to minimise or offset the cost of energy required to run their households.
▪ Transport. The ability for people to walk or cycle to meet their daily needs, including getting to work, the supermarket, and places to relax or socialise.

Positive initiatives to reduce the cost-of-living tend to be associated with investment in ‘green infrastructure’, such as increased tree canopy cover (assists with thermal control inside the home), walking/cycle path networks, renewable energy technologies, and water storage/re-use systems. These are relevant to the planning process both in terms of residential construction and broader urban design and public domain considerations.

Some consideration for building sustainability is mandated through the Building Sustainability Index (BASIX) for all new residential development, which aims to deliver equitable, effective water and greenhouse gas reductions across the state. Opportunities may exist to encourage people to achieve sustainability standards beyond this, where they choose to do so. This would rely on community education programs.

Council plays a key role in planning for and managing the public domain in residential areas. Strengthening considerations for a ‘green infrastructure’ network can assist with reducing the cost of living.

Recommendations to strengthen considerations for cost of living in the planning process:

34. Consider preparing a ‘green infrastructure’ plan to support policy development for energy-reducing and active transport initiatives.
35. Investigate incentives to achieve 6 star green energy buildings in Urban Renewal Corridors and Catalyst Areas
36. Consider a community education initiative that would raise people's awareness of residential building sustainability considerations, and advocate for these considerations in pre-application discussions.
Table 34: Summary of recommendations

<table>
<thead>
<tr>
<th>Focus area</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spatial planning (Section 11.1)</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Housing planning and profile areas (Section 11.1.1)  | 1. Continue utilising the 30 established community profile areas covering the whole of the Local Government Area as a basis for establishing dwelling forecasts and monitoring growth against these. This should include identifying opportunities to automate Development Application and Complying Development Certificate information as it comes in to keep the supply pipeline information up to date.  
2. In the longer term, review the suitability of the current ‘community profile areas’ in the context of planning for future housing, and related infrastructure needs. Refer to studies completed by SGS for the Lower Hunter for more information on areas previously considered. |
| Catalyst Areas (Section 11.1.2)                      | 3. Utilise the Catalyst Area dwelling targets identified in the Greater Newcastle Metropolitan Plan to provide further guidance as to the preferred types and mix of dwellings. This should include considerations for social and affordable housing, housing for people with a disability or high care needs, and student accommodation.  
4. Prepare a policy and implementation program for considering changes to land use and development controls in Catalyst Areas. This should identify interim processes available for consideration of changes in advance of comprehensive (whole-of-area) studies. |
| Urban Renewal Corridors (Section 11.1.3)             | 5. Review and update planning controls for each established (Stage 1) Urban Renewal Corridor, drawing on the information presented in Appendix 2, and the guidelines provided in this Report.  
6. Prepare public domain plans for each established (Stage 1) Urban Renewal Corridor to provide a focus for public sector investment and renewal.  
7. Align data-collection and reporting mechanisms to track the following for each established (Stage 1) Urban Renewal Corridor:  
   - Residential development approvals  
   - Residential development completions  
   - Development of different housing types (detached, attached 1-2 storeys, attached 3+ storeys)  
8. Prepare a policy and implementation program for considering changes to land use and development controls in investigation (Stage 2) Urban Renewal Corridors. This should identify interim processes available for consideration of changes in advance of comprehensive (whole-of-corridor) studies.  
9. Investigate each (Stage 2) Urban Renewal Corridor to: |
consider its role and function within the broader network of centres and urban renewal corridors
- define the boundary of properties expected to be the focus of new development
- identify growth targets, including additional dwellings and/or jobs as a basis for establishing land use and development controls
- within these targets, identify desired outcomes for, at minimum social and affordable housing, housing for people with a disability or high care needs, and student accommodation

<table>
<thead>
<tr>
<th>Residential growth in and around Local Centres (Section 11.1.4)</th>
<th>10. Review the current hierarchy of centres within the LGA to consider re-categorising centres in areas planned for higher levels of growth as Major Local Centres, as a basis for reviewing land use and development planning controls. Refer to Table 32 for preliminary considerations. This should also include a review of Appendix C of Council’s Local Planning Strategy to determine if the recommended future zonings are still appropriate.</th>
</tr>
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**Needs-based planning (Section 11.2)**

<table>
<thead>
<tr>
<th>Social and affordable housing (Section 11.2.1)</th>
<th>11. Further investigate supply and demand considerations for social and affordable housing in the Newcastle Local Government Area, in consideration with social and affordable housing providers.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12. Incorporate investigations for social and affordable housing into the review of land use and development controls for all Catalyst Areas and Urban Renewal Corridors, including the preparation of Affordable Housing Contribution Schemes that underpin inclusionary provisions.</td>
</tr>
<tr>
<td></td>
<td>13. Establish a Council policy that identifies the locations and circumstances in which Council would consider Planning Agreements as a mechanism to re-zonings and development application approvals where projects incorporate social and affordable housing funding or on-site provision.</td>
</tr>
<tr>
<td></td>
<td>14. In the long term, review the potential of establishing a nexus between additional development and social and affordable housing to enable, for example, Section 7.11 funding or conditions of consent to support additional social and affordable housing.</td>
</tr>
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</table>

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<tr>
<th>Specialist disability accommodation and residential care facilities (Section 11.2.3)</th>
<th>15. Further investigate supply and demand considerations for specialist disability accommodation and residential care facilities in the local government area, in consultation with disability and carer support service providers.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16. Identify policy mechanisms to facilitate the incorporation of specialist disability accommodation or residential care facilities in locations with a higher level of accessibility.</td>
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<td>17. Identify the level of take-up of Silver Level universal design features through recent approvals.</td>
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<td></td>
<td>18. Consider establishing an ‘adaptable housing target’ in select locations to support longer-term opportunities for people to age-in-place.</td>
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</table>

| Student accommodation | 19. Work with education providers to further investigate supply and demand considerations for student accommodation in the Local Government Area to better characterise the anticipated future student population. |
### (Section 11.2.4)

#### 20. Work with education providers to consider establishing a ‘student housing target’ in select locations as a signal to the market. This should be supported by suitable policy mechanisms that enable Council to advocate for and incentivise the provision of student housing.

#### 21. Consider preparing a DCP to specifically address development and design considerations for student housing.

#### 22. Work with education providers to identify opportunities to provide or otherwise advocate for services or technologies that can better assist students to find accommodation.

### Retirement living (Section 11.2.5)

#### 23. Further investigate the housing preferences of seniors currently living in the community as well as the expectations of residents expected to reach retirement age within the next 10 years to incorporate a longer-term perspective in forward planning.

#### 24. Review the controls for seniors housing in Catalyst Areas, Urban Renewal Corridors and Local Centres to consider locations or circumstances where this would be acceptable as a ground-floor use.

#### 25. Review the permissibility of seniors housing on non-urban zoned land and consider introducing this as an additional use, permissible with consent, in suitable locations.

#### 26. Review, at suburb level, the extent to which the Low-Rise Medium Density Housing Code is applicable within the Local Government Area to determine whether additional policy development is required to stimulate supply in suitable locations.

### Other needs-based groups (Section 11.2.6)

#### 27. Engage with Awabakal Local Aboriginal Land Council to review opportunities that would increase the supply of their social housing portfolio and consider the development potential of their broader land holdings within the Local Government Area.

#### 28. Further research emerging residential products such as cooperative housing or tiny homes and consider a partnership model to deliver pilot projects.

### Enhanced quality and liveability (Section 11.4)

#### Local Character (Section 11.4.1)

#### 29. Prepare a local character study to provide the strategic basis for amending LEP and DCP standards and controls to enhance local character across the LGA. This should draw on the policy considerations set out by the NSW Government Architect’s office. It should enable the creation of local character statements and locality specific controls to encourage new housing that respects the current and intended future character of residential areas.

#### 30. Further investigate and identify the preferred planning mechanisms to strengthen the consideration of local character in the planning framework, drawing on the assessment of various planning mechanisms presented in Section 8 of this Report.

#### 31. Further investigate potential design or local character issues with the Low Rise Medium Density Housing Code and update controls within the DCP accordingly. The investigation should consider the identification of areas with special local character suitable for exclusion from the Code.

#### People’s health and wellbeing (Section 11.4.2)

#### 32. Establish a local evidence base for housing and health, drawing on the World Health Organisation guidelines.

#### 33. Consider incorporating development standards to improve thermal and acoustic outcomes within all new residential developments (e.g. requirements for new double glazed windows, etc.) into the DCP.
Other cost-of-living considerations (Section 11.4.3)

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</table>
11. ABBREVIATIONS

ABS – Australian Bureau of Statistics
CDC – Complying Development Certificate
DA – Development Application
DCP – Development Control Plan
DPIE – Department of Planning Industry and Environment
ERP – Estimated Resident Population
FACS – Family and Community Services
FSR – Floor Space Ratio
GNMP – Greater Newcastle Metropolitan Plan
HCCDC – Hunter and Central Coast Development Corporation
LEP – Local Environmental Plan
LHS – Local Housing Strategy
LPS – Local Planning Strategy
NDIS – National Disability Insurance Scheme
NER – Northern Environmental Region (includes the localities of Black Hill, Fullerton Cove, Hexham, Kooragang, Lenaghan, Mayfield North and the eastern part of Tighes Hill)
RFB – Residential Flat Building (e.g. apartment)
SAH – Social and Affordable Housing
SI LEP – Standard Instrument
SDA – Specialist Disability Accommodation
TfNSW – Transport for New South Wales
UoN – University of Newcastle
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Demography/Demography/Population-projections/Household-Projections-User-Guide


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Newcastle Housing Needs and Local Character Evidence Report: Appendices
# REPORT REVISION HISTORY

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<th>Revision</th>
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<th>Revision Description</th>
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<tr>
<td>01</td>
<td>4/10/19</td>
<td>Draft for client review</td>
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|          |             | **Prepared by** Jessica Veenhuyzen  
|          |             | *Project Planner* |
|          |             | **Verified by** Amanda Wetzel  
|          |             | *Executive Director* |
|          |             | **Signed** Robert Bisley  
|          |             | *Associate* |
| 02       | 13/11/19    | Exhibition Draft |
| 02a      | 14/11/19    | Final Report (re-issued) |
| 02b      | 27/11/19    | Final Report (minor clarification to Appendix 5) |
|          |             | **Prepared by** Jessica Veenhuyzen  
|          |             | *Project Planner* |
|          |             | **Verified by** Robert Bisley  
|          |             | *Associate* |
|          |             | **Signed** Amanda Wetzel  
|          |             | *Executive Director* |

**Disclaimer**

This report has been prepared by City Plan Strategy & Development P/L with input from a number of other expert consultants (if relevant). To the best of our knowledge, the information contained herein is neither false nor misleading and the contents are based on information and facts that were correct at the time of writing. City Plan Strategy & Development P/L accepts no responsibility or liability for any errors, omissions or resultant consequences including any loss or damage arising from reliance on information in this publication.

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<td>Analysis of the Broadmeadow Urban Renewal Corridor</td>
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<td>Table 5</td>
<td>Analysis of the Adamstown Urban Renewal Corridor</td>
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APPENDIX 1: SPATIAL FRAMEWORK
Figure 1. Spatial framework to plan for housing in the Newcastle LGA

**SPATIAL FRAMEWORK**

**Renewal Corridors:** Islington Corridor, Mayfield Corridor, Hamilton Corridor, Broadmeadow Corridor, Adamstown Corridor

**Catalyst Areas:** Newcastle City Centre, Callaghan, Newcastle Port, John Hunter Hospital Kotara, Broadmeadow, Beresfield – Black Hill

**Secondary Renewal Corridors:** Glebe Road Corridor, Lambton Road Corridor, Newcastle Road Corridor

**Infill Areas:** Across the NSW LGA. A few particular areas that aren’t identified in other areas are New Lambton, Stockton, Wallsend and Elwood Vale.

**Greenfield:** Most of Newcastle’s remaining greenfield supply is located in Wallsend, Fletcher and Minmi.
APPENDIX 2: STAGE 1 URBAN RENEWAL CORRIDORS
The Hunter Regional Plan, Greater Newcastle Metropolitan Plan (GNMP) and Newcastle Local Planning Strategy (LPS) all propose continued focus of significant additional housing in Newcastle’s urban renewal corridors. These areas provide links between the major local centres of Islington, Mayfield, Hamilton, Broadmeadow and Adamstown and offer the highest level of public transport accessibility.

Medium dwelling prices in 2018 across the five corridors (PRD data 2019):
- Islington, dwellings $665,000 and unit/townhouse $608,750
- Mayfield $600,000 and unit/townhouse $472,000
- Hamilton $786,000 and unit/townhouse $461,000
- Broadmeadow $612,500 and unit/townhouse $585,000
- Adamstown $720,000 and unit/townhouse $583,750

The following are the 2018 average square metre land values for the five renewal corridors (PRD data 2019):
- Islington $1,635
- Mayfield $901
- Hamilton $1,663
- Broadmeadow $1,192
- Adamstown $1,193

Based on an 400sqm average sized lot, which is typical for the Islington, Mayfield and Hamilton corridors, and the average square metre prices listed above, the price of buying a detached dwelling for infill redevelopment is roughly:
- Islington $654,000
- Mayfield $360,400
- Hamilton $665,200

Due to historical settlement patterns, average lots sizes within Broadmeadow and Adamstown renewal corridors are generally closer to 500sqm, meaning the price of buying a detached dwelling for infill redevelopment is roughly:
- Broadmeadow $596,000
- Adamstown $596,500

From discussions with local property developers, it was indicated that part of the reason infill development hasn’t seen significant take up rates is due to low land values. Specifically, based on Newcastle’s current market factors, developers require the value of land to be over $700,000, or to find specifically viable sites, to undertake medium density infill development.

The following pages show:
1) A snapshot of each corridor and current development currently occurring;
2) A constraints map showing the key opportunities and constraints for each renewal corridor; and
3) A table identifying the status of each precinct and details of how each is progressing
Figure 2. Stage 1 Urban Renewal Corridors in the Newcastle LGA
Figure 3. New housing supply (2016 - 2019) in the Islington Urban Renewal Corridor

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<tbody>
<tr>
<td>PRECINCT 1: ISLINGTON PARK</td>
<td>9 new dwellings</td>
<td>0 new dwellings</td>
<td>27 new dwellings by 2041</td>
</tr>
<tr>
<td>PRECINCT 2: VILLAGE CENTRE</td>
<td>55 new dwellings</td>
<td>17 new dwellings</td>
<td>72 new dwellings by 2041</td>
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<tr>
<td>PRECINCT 3: WICKHAM PARK</td>
<td>5 new dwellings</td>
<td>0 new dwellings</td>
<td>30 new dwellings by 2041</td>
</tr>
<tr>
<td>IN THE SUBURB</td>
<td>8 new dwellings (Islington)</td>
<td>37 new dwellings (Islington)</td>
<td>around 1 new dwelling per year</td>
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Figure 4. Opportunities and constraints of the Islington Urban Renewal Corridor
## Table 1. Analysis of the Islington Urban Renewal Corridor

<table>
<thead>
<tr>
<th>Precinct</th>
<th>Status</th>
<th>Development in pipeline</th>
<th>Forecasted development</th>
<th>Opportunities</th>
<th>Constraints</th>
<th>Controls</th>
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<tbody>
<tr>
<td>Islington Park (Precinct 1)</td>
<td>Existing land use is primarily commercial. Lots along Maitland Rd are large in nature. A number of sites are currently vacant.</td>
<td>9 new dwellings are currently under construction.</td>
<td>.id forecasts 27 dwellings to be built by 2041.</td>
<td>High degree of transport servicing and access to amenity at Islington Park. Large lot sizes present opportunity to accommodate higher density residential accommodation.</td>
<td>Several prime sites are occupied as industrial or service station. Remediation would be required for residential development. Several community uses exist (e.g. a church)</td>
<td>Existing development is well below the height and FSR controls.</td>
</tr>
<tr>
<td>Village Centre (Precinct 2)</td>
<td>Commercial is the predominant use. Most development is 1-2 storeys. Small number of detached and shop top housing. Several residential flat buildings are occurring close to Hamilton Station. Existing buildings are relatively old.</td>
<td>Take up, with residential flat buildings, occurring in the southern part of the precinct. - 55 new dwellings have been built since 2016 or are currently under construction. - 17 additional new dwellings have been approved or are currently under assessment.</td>
<td>.id forecasts 72 dwellings to be built by 2041. The current dwellings in the pipeline will meet .id’s forecast. The current number of new dwellings in the pipeline is 72, indicating that more residential development is occurring here than forecast.</td>
<td>High degree of transport servicing and amenity. The northern B4 zoned component of the precinct has opportunity for low-rise apartments.</td>
<td>B2 zoning limits residential development to shop top housing. Part of the precinct is Low Risk of flooding. Most larger lots are occupied by active commercial businesses.</td>
<td>Most of this precinct is zoned B2 to ensure shops and services are available to residents locally. The zoning is suitable for this precinct. Existing development is well below the height and FSR controls.</td>
</tr>
<tr>
<td>Wickham Park (Precinct 3)</td>
<td>Mix of residential and commercial buildings. Small total site area. Only 16 properties within this whole precinct.</td>
<td>5 new dwellings are currently under construction.</td>
<td>.id forecasts 30 dwellings to be built by 2041.</td>
<td>High degree of transport servicing and access to amenity at Wickham and Wickham Park. Very small lot sizes. Due to location between a main road and train line, would require a design solution to overcome environmental impacts.</td>
<td></td>
<td>Existing development is well below the height and FSR controls.</td>
</tr>
</tbody>
</table>
Figure 5. New housing supply (2016 - 2019) in the Mayfield Urban Renewal Corridor
Figure 6. Opportunities and constraints of the Mayfield Urban Renewal Corridor
**Table 2. Analysis of the Mayfield Urban Renewal Corridor**

<table>
<thead>
<tr>
<th>Precinct</th>
<th>Status</th>
<th>Development in pipeline</th>
<th>Forecasted development</th>
<th>Opportunities</th>
<th>Constraints</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tighes Hill (Precinct 1)</td>
<td>Mix of land uses from medium density housing and commercial buildings along Maitland Rd.</td>
<td>No development assessment applications for dwellings currently in the pipeline.</td>
<td>.id forecasts 29 dwellings to be built by 2041.</td>
<td>Limited opportunity for residential development, however lot sizes in the area are quite large, presenting opportunity for low-rise medium density development.</td>
<td>The precinct has significant flooding constraints.</td>
<td>The B1 zoning is accurate for the precinct. The height and FSR controls allow significant uplift to occur, pending feasibility.</td>
</tr>
<tr>
<td></td>
<td>Predominantly detached dwellings off the main road.</td>
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</tr>
<tr>
<td></td>
<td>Medium density residential development occurring.</td>
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</tr>
<tr>
<td>Dangar Park (Precinct 2)</td>
<td>Primarily single story industrial development fronting Maitland Rd.</td>
<td>20 new dwellings have been built since 2016 or are currently under construction.</td>
<td>.id forecasted 42 dwellings to be built by 2041.</td>
<td>Opportunity to deliver more dwellings than forecasted by .id within this precinct.</td>
<td>Most buildings are single storey and well below the 11m building height. Building in the area are quite old and there is opportunity for renewal.</td>
<td>The precinct has significant flooding and mine subsidence constraints.</td>
</tr>
<tr>
<td></td>
<td>Several detached dwellings and townhouses.</td>
<td></td>
<td></td>
<td></td>
<td>High degree of transport servicing and amenity.</td>
<td>India lots are narrow.</td>
</tr>
<tr>
<td>Mayfield Town Centre (Precinct 3)</td>
<td>Predominantly low rise retail premises fronting Maitland Rd.</td>
<td>There have been a number of non-residential developments occurring within this corridor.</td>
<td>.id forecasts 328 dwellings within Precinct 3 to be built by 2041.</td>
<td>A number of vacant former vehicle sales premises provide opportunity for residential flat buildings.</td>
<td>Limited opportunity due to well established existing commercial operations. Unlike to see the commercial buildings transition into residential opportunity.</td>
<td>The 11m building height for the R4 zoned area is quite low. The 11m height control provides limited opportunity to achieve the high density zoning objectives.</td>
</tr>
<tr>
<td></td>
<td>Several supermarkets and supermarket car parking take up largest parcels within the precinct.</td>
<td>No development assessment applications for dwellings currently in the pipeline.</td>
<td>.id only forecasted 42 new dwellings to be built by 2041.</td>
<td>With the number of competing large scale commercial land uses, this forecast will be difficult to achieve.</td>
<td>Some opportunity for amalgamation and redevelopment of smaller lots containing stand-alone dwellings that are not adjoining Maitland Rd.</td>
<td></td>
</tr>
<tr>
<td>Webb Park (Precinct 4)</td>
<td>Mostly commercial development with a few townhouses, detached dwellings and open space.</td>
<td>There has been no recent residential development activity, however 56 new dwellings have been approved or are currently under assessment.</td>
<td>.id only forecasted 42 new dwellings to be built by 2041.</td>
<td>Limited opportunity as commercial premises are well established.</td>
<td>Limited opportunity due to well established existing commercial operations.</td>
<td>Controls allow development at a much higher and denser rate that what is exists. Constraints are limiting development occurring near the control limits.</td>
</tr>
<tr>
<td>Hanbury Street (Precinct 5)</td>
<td>Primarily single story detached dwellings, Mayfield Ex-Services Club and carpark, and a few medium density attached dwellings.</td>
<td>There has been no recent residential development activity, however 34 new dwellings have been approved or are currently under assessment.</td>
<td>.id forecasts 413 dwellings within Precinct 5 to be built by 2041.</td>
<td>The rate of new development in this precinct is occurring slower than forecast.</td>
<td>Area with the most opportunity within the Mayfield Renewal Corridor. Amalgamation of a few lots could allow redeveloped for residential flat buildings.</td>
<td>Corridor is partly constrained by flooding. Existing development is well below controls. Controls do not appear to be restricting development opportunity.</td>
</tr>
</tbody>
</table>
Figure 7. New housing supply (2016 - 2019) in the Hamilton Urban Renewal Corridor
Figure 8. Opportunities and constraints of the Hamilton Urban Renewal Corridor
<table>
<thead>
<tr>
<th>Precinct</th>
<th>Status</th>
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<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tudor Street West</td>
<td>Predominantly low (1-2 storey) commercial premises. A few residential flat buildings. Commercial buildings mostly occupied.</td>
<td>64 new dwellings have been built since 2016 or are currently under construction.</td>
<td>.id forecasts 16 dwellings within Precinct 1 to be built by 2041.</td>
<td>Close to open space at Gregson Park and entertainment along Beaumont St. Walking distance to Newcastle Interchange and fronts a bus routes along Tudor Street.</td>
<td>Very few lots that could accommodate residential development. Precinct is subject to mine subsidence and flooding.</td>
<td>Controls allow development at a much higher and denser rate that what is exists.</td>
</tr>
<tr>
<td>(Precinct 1)</td>
<td></td>
<td></td>
<td>The number of new dwellings built recently have exceeded .id’s forecast. Opportunity to deliver more dwellings within this precinct.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Beaumont Street</td>
<td>Mix of residential flat buildings and commercial development.</td>
<td>No development assessment applications for dwellings currently in the pipeline.</td>
<td>.id forecasts 27 dwellings within Precinct 2 to be built by 2041.</td>
<td>Close to open space at Gregson Park and entertainment along Beaumont St. Walking distance to Newcastle Interchange and fronts a bus routes along Tudor Street.</td>
<td>Very few lots within this precinct that do not serve a cultural purpose or have not been subject to a DA within the last 10-15 years. Precinct is subject to the Hamilton Business Centre Heritage Conservation Area and mine subsidence.</td>
<td>The precinct has a B2 zoning which provides for shops, services and shop top housing. The zoning aligns with local character and heritage provisions.</td>
</tr>
<tr>
<td>(Precinct 2)</td>
<td></td>
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</tr>
<tr>
<td>Tudor Street East</td>
<td>Majority of this precinct is comprised of operational Vehicle Sales or Hire Premises.</td>
<td>No development assessment applications for dwellings currently in the pipeline.</td>
<td>.id forecasts 75 dwellings within Precinct 3 to be built by 2041.</td>
<td>Close to open space at Gregson Park and entertainment along Beaumont St. Walking distance to Newcastle Interchange and fronts a bus routes along Tudor Street. The Vehicle Sales or Hire Premises are located on lots with a large area.</td>
<td>There are a number of successful Vehicle Sales or Hire Premises located on land suitable for residential development. Incompatible land uses (a DA for a petrol station) have occurred due to the flexibility of the B4 zoning. Precinct is subject to mine subsidence and flooding.</td>
<td>Controls allow development at a much higher and denser rate that what is exists. Over time, additional height may be appropriate in the B4 component of the Precinct as development progresses on the eastern side of Donald/Parry St.</td>
</tr>
<tr>
<td>(Precinct 3)</td>
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</table>
Figure 9. New housing supply (2016 - 2019) in the Broadmeadow Urban Renewal Corridor

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PRECINCT 1: NINEWAYS CENTRE</td>
<td>7 new dwellings</td>
<td>0 new dwellings</td>
<td>145 new dwellings by 2041</td>
</tr>
<tr>
<td>PRECINCT 2: GREGSON PARK</td>
<td>22 new dwellings</td>
<td>6 new dwellings</td>
<td>40 new dwellings by 2041</td>
</tr>
<tr>
<td>IN THE SUBURB</td>
<td>4 new dwellings (Broadmeadow )</td>
<td>5 new dwellings</td>
<td>Around 5-6 new dwellings per year + 455 new dwellings in the catalyst area</td>
</tr>
</tbody>
</table>

BROADMEADOW CATALYST AREA – RESIDENTIAL DEVELOPMENT ACTIVITY
Figure 10. Opportunities and constraints of the Broadmeadow Urban Renewal Corridor
Table 4: Analysis of the Broadmeadow Urban Renewal Corridor

<table>
<thead>
<tr>
<th>Precinct</th>
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<tbody>
<tr>
<td>Nineways Centre</td>
<td>Covers a large area and a large range of uses. This ranges from open spaces, detached dwellings, smaller commercial operations, bulky goods premises, pubs, petrol stations. The primary land use present within the precinct is higher density residential development. A few vacant buildings along Lambton Rd, mostly tenanted.</td>
<td>7 new dwellings have been built since 2016 or are currently under construction.</td>
<td>.id forecasts 145 dwellings within Precinct 1 to be built by 2041. Substantial new residential development will need to occur to meet the .id forecast.</td>
<td>Highly serviced by rail at Broadmeadow Station and buses along Lambton Rd and Brunker Rd to Newcastle CBD.</td>
<td>The land between Lambton Road and Broadmeadow station is zoned B2, which restricts new residential development to shop top housing. Precinct is subject to mine subsidence and flooding.</td>
<td>Much of this precinct is zoned B2 to allow for shops and services with a local centre. The zoning is appropriate for the precinct. Increased height or FSR controls may be appropriate to encourage density close to Broadmeadow Station.</td>
</tr>
<tr>
<td>Gregson Park</td>
<td>A mix of detached dwellings, commercial premises and Hamilton Public School. Many of the detached dwellings contain heritage features.</td>
<td>22 new dwellings have been built since 2016 or are currently under construction. An additional 6 dwellings have been approved or are currently under assessment.</td>
<td>.id forecasts 30 dwellings within Precinct 2 to be built by 2041. .id predicts very little growth within Precinct 2.</td>
<td>Highly serviced buses along Lambton Rd to Newcastle CBD. Close to open space at Gregson Park and entertainment along Beaumont St.</td>
<td>Precinct is subject to mine subsidence and flooding.</td>
<td>The controls only support minimal height and density above what exists. Current controls unlikely to see much uplift or redevelopment.</td>
</tr>
</tbody>
</table>
Figure 11. New housing supply (2016 - 2019) in the Adamstown Urban Renewal Corridor
Figure 12. Opportunities and constraints of the Adamstown Urban Renewal Corridor
Table 5. Analysis of the Adamstown Urban Renewal Corridor

<table>
<thead>
<tr>
<th>Precinct</th>
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<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunker Road (Precinct 1)</td>
<td>A lot of variety in the precinct, ranging from detached dwellings to residential flat buildings, and small shop fronts to larger commercial operations. Several new residential flat buildings have been built over the past few years towards the northern end of the precinct.</td>
<td>There is substantial new development activity in the pipeline, making this Precinct one of the most successful precincts in all of the Urban Renewal Corridors. 45 new dwellings have been built since 2016 or are currently under construction. An additional 232 dwellings have been approved or are currently under assessment.</td>
<td>.id forecasts 374 dwellings within Precinct 1 to be built by 2041. Based on the current rate of development activity, it is likely .id’s forecast will be met, and most likely exceeded.</td>
<td>A number of residential flat buildings have already been built within the corridor. Infrastructure services (such as bus routes) have already been established. Many of the detached dwellings are prime candidates for amalgamation and more concentrated land uses.</td>
<td>Northern portion of the precinct is subject to mine subsidence. Due to the number of residential flat buildings and shop top houses coming online, there may be limited opportunity to find appropriate sites.</td>
<td>The R4 zoning, FSR and Height controls appear to be facilitating substantial development. No changes to the controls are necessary.</td>
</tr>
<tr>
<td>Glebe Road (Precinct 2)</td>
<td>The most common land use is detached residential dwellings on small to mid-sized lots. Also has several community facilities (post office and church) and a school. Several attached dwellings and small scale residential flat buildings have been built west of the Adamstown Town Centre.</td>
<td>3 new dwellings have been built since 2016, or are currently under construction. An additional 91 new dwellings have been approved.</td>
<td>.id forecasts 221 dwellings within Precinct 2 to be built by 2041. There is opportunity for additional new dwellings .id’s forecasts as development progresses along Brunker Rd over the long term.</td>
<td>There is opportunity for the detached dwellings along Glebe Road to amalgamate and transition into medium density housing. Streets set back from Glebe Rd (e.g. Victoria St) have been subject to medium density development.</td>
<td>A western component of the precinct is flood prone.</td>
<td>Glebe road has potential to accommodate higher density development. The controls (and market) do not appear to be facilitating redevelopment. After Brunker Rd is nears saturation, similar height controls could be applied to Precinct 2 to encourage redevelopment.</td>
</tr>
<tr>
<td>Adamstown Town Centre (Precinct 3)</td>
<td>Primarily small scale shop front commercial activities with a few community facilities. Very few vacancies.</td>
<td>16 new dwellings have been built since 2016 or are currently under construction. There are no additional new dwellings in the pipeline.</td>
<td>.id forecasts 30 new dwellings within Precinct 3 to be built by 2041.</td>
<td>Limited opportunities for shop top housing due to small scale shop fronts.</td>
<td>The controls provide limited opportunity for redevelopment for shop top housing.</td>
<td>The B2 zoning provides opportunity for shop top housing, however the 11m height limit provides limited opportunity to develop much beyond the existing built form.</td>
</tr>
<tr>
<td>Park Avenue Neighbourhood Centre (Precinct 4)</td>
<td>Predominantly smaller commercial shop front businesses and a pub. Several of the commercial shop fronts are vacant.</td>
<td>There has been no recent residential development activity, however 9 new dwellings have been approved or are currently under assessment.</td>
<td>.id forecasts 20 dwellings within Precinct 3 to be built by 2041.</td>
<td>Adamstown Station upgrades (completed) and the upcoming Glebe/Park Road upgrades will improve vehicle and pedestrian movements.</td>
<td>Limited number of sites within this corridor and a large component of this precinct is the pub which is a long-standing establishment.</td>
<td>There is limited opportunity to alter controls to deliver addition dwellings due to the size of this precinct. Controls appear sufficient.</td>
</tr>
</tbody>
</table>
APPENDIX 3: CATALYST AREAS
The Greater Newcastle Metropolitan Plan identified several Catalyst Areas. The Catalyse Areas will underpin new job opportunities, including health, defence and education industries. Some locations will also provide for new homes and help to meet the expected demand for diverse housing options close to jobs and services. There are seven catalyst areas located within the Newcastle local government area. The Newcastle City Centre, Callaghan, Kotara and Broadmeadow catalyst areas will play a role in delivering Newcastle’s housing.

1. Newcastle City Centre
   - Targeted to deliver 4,000 dwellings by 2036 with its desired role in Greater Newcastle:
   - Business district with significant commercial floor space;
   - Metropolitan civic, recreation and cultural facilities, and major events;
   - Education and innovation precinct;
   - Urban renewal precinct, meeting demand for medium and high-density housing that contributes to the heritage character of the city.

Newcastle City Centre catalyst area’s role for housing delivery
   - In Newcastle – Newcastle East – Newcastle West 96% of the current 2,913 dwelling stock is medium or high density.
   - In Maryville – Wickham, 50% of the current 1,358 dwelling stock is medium or high density.
   - Within the catalyst area there is currently 4,271 dwellings (Source: Adapted from ID Profile 2018)
   - From Council DA tracker and the Department of Planning, Industry and Environment’s Development and Planning Register, there is currently 4,019 dwellings in the pipeline.
   - Although not all of the 4,019 dwellings will be built, it is an indication that the Newcastle City Centre catalyst area is capable of achieving the 4,000 dwelling target established in the Greater Newcastle Metropolitan Plan. Furthermore, the Department of Planning, Industry and Environment and Council may wish to consider increasing the dwelling target to encourage additional development in Newcastle’s primary employment hub and most serviced precinct.

2. Callaghan
   - Targeted to deliver 750 dwellings by 2036 with its desired role in Greater Newcastle:
   - Tertiary education, research and innovation cluster based around the University of Newcastle;
   - Emerging mixed use centre that utilises Warabrook Station and bus routes, and acts as a catalyst for renewal of surround areas and centres.

Opportunities and role in delivering housing
   - It is noted that with the growth of Newcastle’s City Centre campus, future dwellings/student accommodation provided by the university is likely to occur in the Newcastle City Centre rather than at the Callaghan campus. The Student Accommodation Precinct contains a large volume of dwellings, however there has been no indication by the university to building additional dwelling accommodation within this precinct for the short-medium future.
   - The suburb of Jesmond, within the Callaghan Catalyst area is already experiencing renewal with 3 approved development applications accounting for 10% of the 2036 dwelling target (77 dwellings).
   - Within the Waratah precinct, development applications are in the pipeline for a boarding house for 29 dwellings and an aged care facility for 47 dwellings.
   - There is currently no substantial dwelling applications within the pipeline for the Warabrook precinct.
   - When discounting areas within the catalyst area covered by the university and employment lands, the main precinct likely to see dwelling growth is the Jesmond, Warabrook and Waratah Centres precinct. It is likely that the 750 dwelling target identified in the Greater Newcastle Metropolitan Plan will be incrementally delivered over time through mid-sized redevelopments. It is unlikely that intervention is needed to meet the dwelling target.
   - It is recognised that future dwelling within this precinct, particular Jesmond, need to be supportive of the future dwelling needs of students as this catalyst area is a key area for student accommodation.
3. Kotara

- Targeted to deliver 400 dwellings by 2036 with its desired role in Greater Newcastle:
  - Diverse employment centre with mixed-use and high density; residential connected to frequent public transport services.

Opportunities and role in delivering housing

- Above 90% of the current housing stock within the Kotara area are detached dwellings.
- From Council’s DA tracker, Kotara currently isn’t seeing a significant volume of infill occurring. Most development within the pipeline is in the form of dual occupancy development or small scale multi dwelling housing.
- Kotara’s current dwelling pipeline trajectory is unlikely to deliver the targeted 400 dwellings by 2036 without significant intervention.
- The Greater Newcastle Metropolitan Plan identifies the current home maker centre as the future Town Centre Precinct. It identifies that realignment of local plans and masterplanning will also need to occur to support the redevelopment of the large format retail to a mixed-use town centre. The shop top housing within the town centre will be a key component to deliver the catalyst area dwelling targets.
- Due to its location to employment and transport serviceability, it is recommended that Council explore additional GFA provisions to encourage the delivery of affordable and social housing within the new town centre Kotara precinct and also the Kotara Residential Precinct. These provisions could work similarly to those currently in place within the Wickam Master Plan (once the Wickham Master Plan provisions have successfully been introduced and evaluated).
- Should delivery of the Town Centre precinct see delays, Council will need to explore how medium density housing can be encouraged within the Kotara Residential Precinct to meet the dwelling targets.

4. Broadmeadow

- Targeted to deliver 1,500 dwellings by 2036 with its desired role in Greater Newcastle:
  - Nationally significant sport and entertainment precinct; and
  - Providing a mix of uses that facilitates growth and change in surrounding centres and residential areas.

Opportunities and role in delivering housing

- Outside of the Newcastle City Centre, the Broadmeadow catalyst area has been identified for the largest dwelling increasing out of all the catalyst areas and renewal corridors. With access to bus and train transport options and close proximity to the city centre, Broadmeadow presents itself as one of Newcastle’s most appropriate areas for higher residential developments.
- The Greater Newcastle Metropolitan Plan highlights the need to facilitate medium to higher density housing within the Nineways, Lambton Road, Broadmeadow Station, Broadmeadow Road and Locomotive Depot Precincts.
- At present, much of the redevelopment within the wider Broadmeadow area has been along the Brunker Road, outside of the Broadmeadow catalyst area. At present there are very few development applications for development within the Broadmeadow catalyst area, none of which contain substantial volumes of dwelling delivery. Amongst the development industry, there hasn’t been notable interest to undertake infill development within the Broadmeadow catalyst area.
- To deliver the 1,500 dwellings target, as part of the actions identified within the Greater Newcastle Metropolitan Plan, Council will need to master plan the Broadmeadow precinct. This master planning process will also need to evaluate the feasibility of medium to high density development and consider if adjustments to the planning controls are required to deliver the dwelling targets.
- Similar to the Kotara catalyst area, the provision of future housing within the Broadmeadow area provides Council with an opportunity to deliver affordable and social housing to meet shortfalls within the Newcastle LGA.
Figure 13. Residential Catalyst Areas in the Newcastle LGA
The Greater Newcastle Metropolitan Plan (GNMP) identified three Stage 2 Urban Renewal Corridors within the Newcastle LGA. Action 16.3 within the GNMP identifies that Council will undertake an investigation of renewal potential and ensure proposals do not prevent future redevelopment opportunities.

The three Stage 2 Urban Renewal Corridors are:

- **Newcastle Rd – Griffiths Rd – Donald St Corridor.** This corridor plays a role in providing entertainment (the showground, Harness Racing Club and McDonald Jones Stadium), employment (primarily light industrial) and residential (detached dwellings). There has been very little residential renewal over the past few years within this corridor. This corridor is also Newcastle’s primary East-West road link between Newcastle CBD and the M1 Motorway and future opportunities within the corridor will need to consider traffic impacts.

- **Lambton Rd – Russell Rd Corridor.** This corridor will be a westerly extension of the Hamilton and Broadmeadow Urban Renewal Corridors. The eastern component of this corridor is comprised primarily of light industrial and commercial land uses. The middle component of the corridor is predominantly residential transitioning into small scale commercial activities at New Lambton shops. The corridor has not seen much intense residential development and future uses within the corridor will need to be sympathetic with the local character of the area.

- **Glebe Road – Watkins St Corridor.** This corridor is largely comprised of residential detached dwelling land uses with a few medium density residential uses and smaller commercial operations. This corridor is located close to employment opportunities within the CBD. Future activation of the corridor will need to ensure transport and infrastructure are aligned to ensure additional residents within this corridor can be adequately serviced.

Once the Stage 2 Urban Renewal Corridors have been defined, Council can further consider how these corridors can contribute to the delivery of Newcastle dwelling requirements and play a role in delivering housing supply.
Figure 14. Stage 2 Urban Renewal Corridors in the Newcastle LGA
APPENDIX 5: GREENFIELD AREAS
The Greater Newcastle Metropolitan Plan identifies that for Greater Newcastle, in 2017, 50% of new dwellings will be delivered through greenfield development. This will transition to 40% of new dwellings being delivered as greenfield development in 2036.

Due to the interaction between the existing urban boundary, the LGA boundary and environmental constraints, Newcastle has little remaining opportunity to deliver substantial volumes of development through greenfield development. Due to Newcastle’s historical growth patterns, within the urban boundary Fletcher-Minmi area is one of the last opportunities for greenfield development for Newcastle LGA.

When considering urban zoned greenfield pipeline development for Fletcher-Minmi, that being, residential zoned subdivision lots under assessment (1,186), approved subdivision lots (616), vacant lots (110), lots with dwelling construction (58), multi-dwelling lots (71), there is potential for the delivery of almost 2,000 dwellings through zoned land (this is inclusive of the 144 Woodford Street, Minmi application that is currently under assessment for 962 additional lots).

If all of the 2,000 greenfield pipeline dwellings were developed over the next 25 years to 2041, they would only contribute 9.7% of Newcastle’s dwelling delivery.

Further to the zoned lots within the subdivision pipeline, there is only a few possible opportunities remaining within the Newcastle LGA for rezoning to accommodate large scale additional greenfield development. Once urban zoned land, National Parks and Environmental Management areas are discounted, there are only the two notable areas that could accommodate additional dwelling capacity, that being the land currently zoned E4 Environmental Living at Minmi and Black Hill.

The Minmi environmental living area is one of the largest bushland areas in proximity of Newcastle City. Any future development will be highly constrained by the site’s bushfire and biodiversity environmental impacts. When considering the future of the site, Council will need to think about the future importance of the trees in mitigating Newcastle’s future heat island impacts and if the land is important as a biodiversity corridor.

The Black Hill environmental living area is divided by the M1 Pacific Motorway. Land to the east of the M1 has been subject to larger lot settlement patterns and large lot residential development. There is currently limited opportunity to accommodate greater residential densities east of the M1 due to servicing constraints. Land to the west of the M1 is currently utilised for agricultural purposes or otherwise vacant. This area forms part of the ‘emerging Black Hill precinct’ within the Black Hill Catalyst Area and is expected to be subject to Council-led masterplanning initiative (jointly with Cessnock Council). Council should consider the suitability of land west of the M1 for rural residential subdivision through the preparation of its Local Housing Strategy to inform any future masterplanning initiatives.
Figure 15. Opportunities and constraints for greenfield areas in the Newcastle LGA
APPENDIX 6: INFILL AREAS
Although Council and the State Government have established centres for growth through the Urban Renewal Corridors and Catalyst Areas, smaller scale infill will also occur organically throughout the existing urban footprint. General infill development outside of the existing Urban Renewal Corridors and Catalyst Areas will play an important role in contributing to Newcastle’s dwelling requirements.

The infill development map identifies several established centres that have not been identified as Urban Renewal Corridors or Catalyst Areas but are still likely to experience considerable infill development under current controls. Since August 2016, Wallsend, New Lambton, Merewether, Cooks Hill and Stockton have seen considerable interest in infill development:

- Wallsend received 98 development applications in the pipeline for 330 dwellings;
- New Lambton received 46 applications in the pipeline for 129 dwellings;
- Merewether received 61 applications in the pipeline for 114 dwellings;
- Cooks Hill received 14 applications for 101 dwellings;
- Lambton received 25 applications in the pipeline for 66 dwellings; and
- Stockton received 43 applications in the pipeline for 55 dwellings.

The demand for infill residential development within these areas has generally been driven by a mixture of large lot sizes, infrastructure, serviceability and a desirable local character. Cooks Hill is an exception with smaller lot sizes and heritage constraints, however, most new dwelling activity is proposed as mixed-use and shop top housing along Darby Street where there are larger lot sizes and fewer heritage constraints.

Existing suburbs that have experienced little infill development and will continue to be low or no growth areas due to heritage and other constraints include Carrington, Hamilton South-Hamilton East and The Hill. The exception is the former NBN site at The Hill which is zoned for substantial redevelopment with a current application for 172 dwellings.

The infill development map on the following page also reinforces the need for Council and the State Government to align and clarify the spatial framework for residential growth. Overlaying the Stage 1 Urban Renewal Corridors, Catalyst Areas and Stage 2 Urban Renewal Corridors comprises about 1/3 of Newcastle’s urban footprint and currently provides little certainty to the community as to the focus of future residential growth.
Figure 16. Additional areas for infill development within the Newcastle LGA
ENDORSEMENT OF DRAFT LOCAL STRATEGIC PLANNING STATEMENT FOR EXHIBITION

Item 97 - Attachment C: Employment Lands Strategy
This report has been prepared for City of Newcastle. SGS Economics and Planning has taken all due care in the preparation of this report. However, SGS and its associated consultants are not liable to any person or entity for any damage or loss that has occurred, or may occur, in relation to that person or entity taking or not taking action in respect of any representation, statement, opinion or advice referred to herein.

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EXECUTIVE SUMMARY

Introduction

SGS Economics and Planning was commissioned by the City of Newcastle (Council) to update the Newcastle Employment Lands Strategy, which was adopted in 2013. This update will inform the planning of employment generating lands (including all land with an industrial, business or special activities zone) in the Newcastle LGA.

This Project is intended to provide an up-to-date evidence base which will inform Newcastle’s local strategic planning statement. It responds to the recent release of the NSW Government’s Greater Newcastle Metropolitan Plan 2036 and Hunter Regional Plan 2036 as well as to changes in the economy, land uses and land use projections since 2013.

Land use regions have been defined which split the LGA into five areas which represent broad retail and service sub catchments. Supply and demand results are reported for these planning regions.

PLANNING REGIONS WHICH HAVE BEEN USED TO REPORT LAND USE SUPPLY AND DEMAND
Newcastle’s economy

Newcastle has historically been viewed as an industrial city anchored by the steel industry, although this status began to decline in the 1980s as the number of workers in the steel industry decreased. Employment and economic profiling in this study revealed some signs that the local economy is undergoing a transition towards other sectors, many of which are more knowledge intensive.

The Newcastle LGA is a major regional employment destination with many more trips into than out of the LGA for work (approximately 49,300 vs 22,100). Knowledge intensive industries like professional and financial services are concentrated in the Newcastle LGA compared to the Hunter Region and NSW outside of Greater Sydney. However, knowledge intensive industries are much less concentrated than in Greater Sydney, and shift-share analysis showed that the Newcastle LGA has a negative competitive effect in these sectors compared with the broader NSW economy, which in industries like financial and professional services is dominated by Greater Sydney.

The largest employment sectors in the Newcastle LGA are health care and social assistance (20%) and education (10%), with traditionally industrial sectors like manufacturing, utilities and wholesale trade making up only a small portion of total employment (17% from six ANZSIC categories). Between 2006-2016 employment declined in traditionally industrial sectors (defined by grouping ANZSIC categories from the ABS), with particularly significant declines in manufacturing (-30% or approximately -2,600 jobs), although employment in transport and warehousing grew (+18%). At the same time health care & social assistance and education were the sectors with the highest growth rates (+31% and +25% respectively between 2006-2016), and there was modest growth in some knowledge intensive industries. Employment in the population serving sectors of accommodation, food services and public administration also grew between 2006-2016.

Educational attainment grew rapidly in the Newcastle LGA between 2006-2016 with the proportion of people with a bachelor level degree or higher increasing from 14.3% to 19.5%, although this is still lower than the proportion in Greater Sydney (28.3% in 2016). Newcastle is a destination for tertiary study, with many people migrating to the LGA to attend university, including from overseas. This presents a potential opportunity to attract people to stay in the area following their education, or to move back to the area later in life, attracted by the amenity and affordability of Newcastle compared to Sydney. This opportunity is expanded by increasing housing unaffordability across Greater Sydney.

SGS has identified the following other economic catalysts which present opportunities for economic development in the Newcastle LGA:

- The opening of the Newcastle Light Rail, with opportunities for increased permeability and development in Newcastle City Centre,
- Potential growth in the University of Newcastle and the proposed opening of additional universities in Newcastle,
- The expansion of the Port of Newcastle, which provides a competitive advantage to the Newcastle LGA in the freight and logistics sector,
- Tourism to the nearby Hunter Valley Wine Region and Port Stephens, with an opportunity for Newcastle to play a greater role as a base for visitors to the Hunter Region with visitors attracted by Newcastle’s urban amenity,
- Potential improvements in transport connectivity to Sydney, with faster rail connections under investigation by the NSW government, and
- The proposed expansion of the John Hunter Hospital to create a health and innovation precinct.
Industrial land uses

As noted above, employment in many traditionally industrial sectors like manufacturing declined between 2006-2016 in the Newcastle LGA. They are projected to continue to decline in the future. However, there is a difference between industrial ANZSIC categories in which employment estimates are projections are organised (the categorisation used by the ABS for economic sectors) and the economic activity that actually takes place in industrial lands, including in the Newcastle LGA.

Newcastle’s industrial land houses a diverse range of businesses from a variety of ANZSIC sectors. This includes sectors that would be traditionally defined as industrial such as manufacturing, as well as others like recreation services, retail trade (warehousing associated with retail businesses), rental services, health care and professional services. Even if employment in traditionally industrial ANZSIC sectors are predicted to continue to decline, overall employment in industrial areas in Newcastle is expected to increase. This means that there is likely to be demand for increased amounts of industrial floorspace.

Industrial land uses are changing across Australia in response to broader economic trends and drivers, impacting future land use requirements. Industrial employment is increasingly automated, meaning that the number of workers per square metre of floorspace is likely to be lower in the future. Opportunities in advanced manufacturing may mean that industrial activity becomes more knowledge intensive, with a higher economic output. Supply chain optimisation and the rise of online retail means that small industrial distribution facilities are required throughout populated areas, allowing rapid responses to orders for goods. This will heighten the importance of small and centrally located industrial precincts.

SGS has modelled the likely future demand and capacity for industrial floorspace in Newcastle LGA, which are shown in the table below. Industrial demand is based on employment projections produced by Transport for NSW, which are converted to projections by broad land use category and then floorspace requirements by use of average employment to floorspace ratios. Industrial capacity has been modelled under three scenarios, but only the medium scenario, which represents the most likely development outcome, is shown here.

### INDUSTRIAL LAND USE DEMAND AND CAPACITY

<table>
<thead>
<tr>
<th>Industrial land use demand</th>
<th>Light industrial</th>
<th>Heavy industrial</th>
<th>Industrial offices</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand (sqm) 2016-2036</td>
<td>122,983</td>
<td>-17,465</td>
<td>15,443</td>
<td>120,961</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Industrial land use capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner North</td>
</tr>
<tr>
<td>Capacity (sqm)-medium scenario</td>
</tr>
</tbody>
</table>

Industrial demand has been broken down by broad industrial use types, showing the differences in prospects of different industrial precincts. Demand for light industrial precincts and offices in industrial areas is likely to increase, while demand for heavy industrial premises is forecast to decline, driven by the forecast decline in traditionally industrial ANZSIC categories.

While there is significant industrial floorspace capacity in Newcastle overall, most is located in greenfield precincts in Mayfield North, Hexham and Beresfield (in the Inner North and Outer regions in the table above). Many light industrial premises are located in the other regions in which there is little capacity. However, much of the additional light industrial demand would be expected to occur in these areas given forecast population growth in them, making it important to protect the operation of existing small industrial precincts.
Given the varied prospects of different kinds of industrial land uses in Newcastle, future land use directions have been broken down by a classification of precincts as follows:

- **Light industrial and urban services precincts** are distributed throughout the LGA and contain predominately smaller premises housing a wide range of industrial uses which either service the local population or are important parts of the supply chains of other nearby industries and businesses. Increasing demand and limited capacity for these uses in established areas mean that these precincts should be preserved and protected where possible.

- **Strategic industrial precincts** are strategically located near major transport infrastructure, house relatively large premises and accommodate a narrower range of uses including large-scale freight and logistics. The supply of land in these precincts appears to be sufficient, and continued development is occurring, so little planning intervention is required.

- **Remnant industrial sites** are surrounded by non-industrial uses but house large current or former traditional industrial operations (such as factories). The continued decline in manufacturing and evolution of industrial uses may cause these sites to become vacant and not fit for purpose in the future, in which case rezoning and redevelopment may be necessary to accommodate other employment generating uses, or non-employment-generating uses if necessary for feasibility reasons.

- **Lands associated with the port**, which should be managed in association with the Port of Newcastle and NSW Government. Potential future expansion of the Port supports retention of this land. Principles for the former BHP intertrade site are provided in the action plan at the end of this Strategy.

### Retail land uses

Retail uses across the Newcastle LGA and surrounds have been profiled and an overview of the retail system is shown in the figure below. Kotara and the Newcastle City Centre (including Cooks Hill) are the two largest retail centres in the LGA. The large enclosed centres at Charlestown, Glendale and The Hunter Shopping Centre are near the LGA boundaries. Much (41%) of the retail floorspace in the Newcastle City Centre is devoted to hospitality, comprising 42% of all hospitality space in the LGA, while Kotara is a more broad-based regional shopping centre with a much broader retail mix.
Future retail floorspace demand has been modelled with a retail gravity model based on current floorspace and projections of population and expenditure. This is shown in the table below. As the population in the LGA increases, we expect an increase in floorspace demand of around 26%. The retail model assumes that the relative attractiveness of centres will remain the same in the future, and so the largest increases in floorspace demand are predicted to occur in the largest current retail centres near where population growth is expected. As such, Newcastle City Centre and the Inner West region have the largest expected increases (Kotara is in the Inner West Region).

The retail model presents one possible view of the future in which the retail landscape does not change dramatically. The results should be taken as a starting point for strategic planning and the model does not show what could occur if the roles of centres or their relative levels of attractiveness change. The model may over-estimate floorspace demand, as it assumes that retail floorspace demand and supply are currently in equilibrium, but the Newcastle LGA
Currently contains more retail floorspace per person than the benchmark area of Greater Sydney, suggesting that it may not be in equilibrium. This effect is likely to be most acute in the Newcastle City Centre, where there are high levels of retail vacancy.

**RETAIL FLOORSPACE DEMAND BY DISTRICT, 2016-2036**

<table>
<thead>
<tr>
<th>Area</th>
<th>2016</th>
<th>2026</th>
<th>2036</th>
<th>Increase</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newcastle City Centre</td>
<td>102,759</td>
<td>118,249</td>
<td>137,763</td>
<td>35,004</td>
<td>34.1%</td>
</tr>
<tr>
<td>Inner North</td>
<td>32,838</td>
<td>35,800</td>
<td>41,386</td>
<td>8,548</td>
<td>26.0%</td>
</tr>
<tr>
<td>Inner South</td>
<td>16,320</td>
<td>17,804</td>
<td>20,146</td>
<td>3,826</td>
<td>23.4%</td>
</tr>
<tr>
<td>Inner West</td>
<td>199,259</td>
<td>213,405</td>
<td>240,202</td>
<td>40,943</td>
<td>20.5%</td>
</tr>
<tr>
<td>Outer</td>
<td>56,605</td>
<td>63,702</td>
<td>72,928</td>
<td>16,323</td>
<td>28.8%</td>
</tr>
<tr>
<td>Total</td>
<td>407,782</td>
<td>448,960</td>
<td>512,426</td>
<td>104,645</td>
<td>25.7%</td>
</tr>
</tbody>
</table>

Source: MarketInfo, SGS Economics & Planning

Online retailing has been included in the retail model. However, the continued rise of online retailing and other changes in the retail sector introduce inherent uncertainty into retail futures as the impacts of online retailing may exceed current estimates. Some retail formats, including department stores, household goods, and to a lesser extent, fashion, are particularly susceptible to competition from online trade.

Retail supply and model results inform the competitive prospects of different centres. The Newcastle City Centre has declined in retail primacy, with Kotara surpassing it in total retail floorspace amount and retail mix. The City Centre’s unique attributes suggest a future as a lifestyle destination with a retail focus on hospitality, leisure, provision for local workers and boutique retail experiences which are not likely to be offered in large stand-alone shopping centres. This focus offers better prospects for the City than trying to compete directly with Kotara, Charlestown and Glendale as a broad-based regional retail centre.

Kotara functions as the largest broad-based shopping centre in Newcastle and surrounds and operates in direct competition with the Newcastle City Centre. As the Kotara Centre is not co-located with social infrastructure, a train station or a broad range of services (unlike the Newcastle City Centre), it is less suitable to take on a broader centre role than that of a retail centre. If a significant diversification of uses were permitted, this could hinder the intended transition of the Newcastle City Centre.

The homemaker centre in Kotara is the largest cluster of bulky goods floorspace in the Newcastle Region and the only consolidated homemaker centre which facilitates a broad range of comparison shopping in a single destination. This is an important retail role which should not be compromised by redevelopment for other uses.

**Commercial land uses**

Commercial (non-retail) floorspace demand has been modelled using employment projections and the same method as that for industrial floorspace demand. Commercial floorspace demand has been split into demand from two different kinds of business:

- Population serving firms like accountants and real estate agents, with demand expected to be located throughout the LGA, and
- Large firms and business serving firms, which are more selective about their location. Demand of this type is aggregated for the whole LGA and is likely to be concentrated in few locations with the highest business amenity.

Most employment in knowledge-intensive ANZSIC categories such as professional services occurs in commercial offices. Some employment in these industries such is located
throughout the LGA, including in office buildings in industrial precincts which are serving more of a business park role. However, by far the largest concentration of knowledge intensive employment currently is in the Newcastle City Centre. While some commercial development is likely to continue to occur in industrial areas, the City Centre is likely to continue to remain the most attractive place for commercial businesses in the Hunter Region in the future. As the commercial development market is influenced by perceived prestige and development momentum, Council should encourage continued commercial development and concentration in the Newcastle City Centre.

Commercial capacity has been modelled under three scenarios, but only the medium scenario, which represents the most likely development outcome, is shown in the table below.

There is a large amount of commercial development capacity in the Newcastle City Centre, particularly around the Honeysuckle Precinct and in the western end of the City around Newcastle Interchange Station. This is sufficient to accommodate likely future demand, but Council should continue to monitor the development market for any potential constraints on commercial development and to ensure that provision is left for development in the longer term.

There is also sufficient capacity to accommodate likely demand elsewhere, providing that some redevelopment of existing premises occurs.

### COMMERCIAL FLOORSPACE DEMAND AND CAPACITY

<table>
<thead>
<tr>
<th>Commercial and retail land use demand</th>
<th>Newcastle City Centre</th>
<th>Inner North</th>
<th>Inner South</th>
<th>Inner West</th>
<th>Outer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population serving commercial</td>
<td>6,762</td>
<td>4,387</td>
<td>2,841</td>
<td>7,658</td>
<td>11,733</td>
<td>33,381</td>
</tr>
<tr>
<td>Other commercial (including business serving)</td>
<td>249,882</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail (from table above)</td>
<td>41,766</td>
<td>12,935</td>
<td>6,667</td>
<td>48,601</td>
<td>28,056</td>
<td>138,025</td>
</tr>
</tbody>
</table>

| Commercial and retail land use capacity | Capacity (sqm) – medium scenario | 406,957 | 79,887 | 5,810 | 31,746 | 28,775 | 553,175 |

Newcastle City Centre

As noted in the sections above, the best future retail prospects for the Centre are as a vibrant mixed-use lifestyle, hospitality, entertainment and boutique retail destination. Projections indicate that there is also likely to be demand for additional commercial development and the City Centre is the most attractive place for this to occur, but this will depend on the future state of the commercial development market and the City Centre remaining competitive with other commercial destinations.

While the overall development prospects of Newcastle City Centre are strong, the different parts of Newcastle City Centre have different strengths and weaknesses. These have been conceptualised through the diagram below, which shows the identity of each part of the City Centre which would best take advantage of its evolving context. This is aligned with the NSW Government’s *Newcastle Urban Renewal Strategy*. 
The West End is nearest to the Train Line and has the most commercial development capacity as well as an evolving role as the major commercial destination in the City. In the future it should consolidate this role, providing A-grade commercial space and worker-serving retail.

The Centre contains multiple civic functions and a campus of the University of Newcastle. These are major anchor destinations and establish a strong precinct identity which should be consolidated.

The East End, including the Hunter Street retail area, has significant natural amenity relating to the built form, landscape and access to open space, but has declined as a retail destination. There are significant opportunities for redevelopment of this area as a mixed-use precinct and the primary hospitality destination in the LGA.

The connection of each of these precincts by the Newcastle Light Rail will allow people to travel between them and ensure that each part of the City Centre benefits from development elsewhere.

**Employment Lands Strategy**

The Employment Lands Strategy is divided into planning principles, which provide high level directions for land use planning, and specific actions for the City of Newcastle.

**Centres hierarchy**

**Planning principles**

- Maintain centres planning framework
- Provide flexibility in permitted uses and principal planning controls

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 1</td>
<td>Plan for small increases in retail floorspace across Newcastle’s centres</td>
</tr>
<tr>
<td>Action 2</td>
<td>Maintain flexibility in planning controls for local centres to allow uses to transition in response to the changing retail landscape</td>
</tr>
<tr>
<td>Action 3</td>
<td>Continue to improve the amenity of local centres through infrastructure investment, increasing their ability to compete with larger centres and online retail</td>
</tr>
</tbody>
</table>
Newcastle City Centre

Newcastle City Centre should continue to be the major regional centre for the Newcastle LGA. It should be the primary business and entertainment centre of the LGA, with a vibrant mix of uses and high amenity built form, next to the Hunter River, beaches and substantial open space.

Planning principles

▪ The western end should build on its current commercial role
▪ The eastern end should become a mixed-use precinct
▪ The centre of the City should consolidate its civic and educational role,
▪ Encourage commercial development
▪ Consolidate retail energy along the current retail spine
▪ Additional convenience-based retailing should be provided throughout Newcastle City Centre, increasing its retail amenity for local workers and residents.
▪ Provide flexible ground floor spaces in mixed-use developments
▪ Connections from Newcastle City Centre to other centres by public transport should be improved
▪ Permeability between different parts of the City Centre should continue to be improved following the opening of the Light Rail
▪ Encourage the night-time economy

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 4</td>
<td>Consult with commercial landlords and developers and where possible remove impediments to commercial development</td>
</tr>
<tr>
<td>Action 5</td>
<td>Limit new retail provision in the Western end of the City Centre to facilities catering to local workers</td>
</tr>
<tr>
<td>Action 6</td>
<td>Continue to invest in the amenity of the Eastern End of the Newcastle City Centre to facilitate its transition to a lifestyle precinct</td>
</tr>
<tr>
<td>Action 7</td>
<td>Review development controls for ground floor retail in mixed-used developments to provide flexible spaces and focus retail energy along the existing retail spine</td>
</tr>
<tr>
<td>Action 8</td>
<td>Advocate to Transport for NSW for improved public transport connections from Newcastle City Centre to other parts of the Newcastle LGA</td>
</tr>
<tr>
<td>Action 9</td>
<td>Continue to improve urban connections across the former railway line from the Honeysuckle Precinct and Hunter River to the rest of the Newcastle City Centre</td>
</tr>
<tr>
<td>Action 10</td>
<td>Review planning controls to ensure that new residential and mixed-use developments are designed to minimise potential impacts on night-time economy uses</td>
</tr>
<tr>
<td>Action 11</td>
<td>Review planning controls and approval processes to allow longer opening hours for businesses in the Newcastle City Centre</td>
</tr>
</tbody>
</table>

Kotara

Kotara should retain its current retail role as a large stand-alone shopping centre which provides retail access to people from throughout the LGA. Kotara competes with Newcastle City Centre as a retail destination. If it takes on a more significant and broader centre role in the future it will also compete to be the primary centre in the LGA, which could jeopardise plans for continued development of the role of the City Centre.

The home-maker centre is the only large and consolidated large-format household goods retailing centre in the Newcastle region. This is an important retail role providing a comparison-shopping experience that can compete with online retailing.
Planning principles

▪ Retain the current retail role for both Kotara Westfield and the Homemaker Centre, but do not allow a transition to a higher order centre

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 12</td>
<td>Retain the current role of Kotara as an important shopping centre which is predominately car-based, proving convenient retail access to the local population</td>
</tr>
<tr>
<td>Action 13</td>
<td>Permit expansion of retail provision in Kotara only if it does not harm to role or function of other centres, particularly Newcastle City Centre</td>
</tr>
<tr>
<td>Action 14</td>
<td>Advocate to the Department of Planning, Industry and Environment to retain the current role of the Kotara Homemaker Centre in long term strategic plans given its lack of suitability for a mixed-use town centre</td>
</tr>
<tr>
<td>Action 15</td>
<td>Investigate prohibiting residential and large office developments at Kotara</td>
</tr>
</tbody>
</table>

Renewal corridors and new centres

The City of Newcastle is planning for a new centre to be delivered in Broadmeadow around the Nineways, and for renewal corridors with mixed-use development along major roads in Adamstown, Hamilton, Islington and Mayfield.

In the short term, mixed-use development in centres with high density residential components should be relatively limited outside of the Newcastle City Centre, concentrating the market for this kind of housing product on the City Centre (particularly the eastern end) where it forms an important part of the City’s evolving identity.

Planning principles

▪ Provide a local population-focused centre in Broadmeadow
▪ Mixed-use development in renewal corridors reinforcing the existing structure of centres

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 16</td>
<td>Work with developers and landowners to facilitate development of a new local centre in Broadmeadow with a local population-serving focus</td>
</tr>
<tr>
<td>Action 17</td>
<td>Ensure that new retail development at Broadmeadow does not harm to role or function of other centres, particularly Hamilton and Newcastle City Centre</td>
</tr>
<tr>
<td>Action 18</td>
<td>Review land use controls in renewal corridors to facilitate a modest amount of mixed-use development which extends and strengthens local centres</td>
</tr>
</tbody>
</table>

1.2 Industrial Precincts

Planning principles

▪ Consider industrial land operational need, not just its employment generation.

Light Industrial Precincts

Light industrial precincts have a vital role servicing the local population and local businesses, as well as supporting higher-order businesses through their role in the local supply chain. These precincts host a wide variety of businesses from multiple industries. Demand for floorspace in these areas is already high and is likely to increase the future.

Planning principles

▪ Retain and protect light industrial precincts.
▪ Manage land use conflicts between light industrial uses and surrounding residences.
Strategic Industrial Precincts
Strategic industrial precincts provide capacity for new industrial and related uses near major transport infrastructure and the Port of Newcastle. There is enough capacity in these precincts to provide for employment needs until 2036.

Planning principles
▪ Continue to support the development and operation of strategic industrial precincts
▪ Plan for a variety of lot sizes in greenfield industrial precincts
▪ Consider uncertainty in projections when planning for industrial land supply with periodic reviews and a precautionary approach

Remnant Industrial Sites
Remnant industrial sites may become vacant in the future if traditional manufacturing businesses employment continues to decline. In this case redevelopment to facilitate other uses may be necessary. When considering which kinds of uses are allowed, one should consider local feasibility and the remediation expenses of the sites in question as well as the appropriateness of their location for other industrial uses.

Planning principles
▪ Encourage redevelopment of remnant industrial uses in urban areas with high levels of amenity to creative employment space.
▪ Prioritise the provision of employment-generating floorspace in any redevelopment which occurs.
▪ Minimise displacement of industrial uses

Ports land
The land on which the Three Ports SEPP applies should be managed in consultation with the Port of Newcastle, Department of Planning, Industry and Environment and Transport for NSW. The land covered by the Three Ports SEPP which is not part of the port provides strategic industrial land whose uses support the operation of the port.
### Planning principles

- Ensure that development does not curtail the current or future potential operation of the Port of Newcastle
- Preserve land for potential long-term employment opportunities

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 24</td>
<td>Consult with the Port of Newcastle regarding any proposed developments in land covered by or immediately adjacent to the Three Ports SEPP</td>
</tr>
<tr>
<td>Action 25</td>
<td>Collaborate with the Port of Newcastle, Department of Industry, Planning and Environment and Transport for NSW with regards to any proposed changes to planning controls in land covered by or immediately adjacent to the Three Ports SEPP</td>
</tr>
<tr>
<td>Action 26</td>
<td>Retain land around the Port of Newcastle to preserve future freight and logistics opportunities, in collaboration with relevant stakeholders</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

SGS Economics and Planning (SGS) was commissioned by the City of Newcastle (CN) to update previous strategic work undertaken to inform the planning of employment lands (including centres) in the Newcastle LGA. The most recent study on this topic was the Newcastle Employment Lands Strategy (2013) by HillPDA.

This Project is intended to provide an up-to-date evidence base which will inform Newcastle’s local strategic planning statement. This will inform the Newcastle Local Strategic Planning Statement and any required revisions to the local environmental plan.

Since the Newcastle Employment Lands Strategy was written in 2013, the Greater Newcastle Metropolitan Plan 2036 and Hunter Regional Plan 2036 have been released. These NSW Government documents set the metropolitan and regional planning context for the Newcastle LGA. They contain several actions for Council to undertake in relation to employment lands. They also identify seven ‘catalyst areas’ within the Newcastle LGA, which are activity, employment and logistics centres of metropolitan significance. The update of the Newcastle Employment Lands Strategy responds to this altered strategic context as well as to changes in projections, land uses and the Newcastle economy since 2013.

Study area

This strategy considers the land use planning for employment generating zones in the Newcastle LGA, which are zones under either the Newcastle Local Environmental Plan 2012 or State Environmental Planning Policy (Three Ports) 2013. This includes the following zones, which are shown in Figure 1:

- B1 Neighbourhood Centre
- B2 Local Centre
- B3 Commercial Core
- B4 Mixed-use
- B5 Business Development
- IN1 General Industrial
- IN2 Light Industrial
- IN3 Heavy Industrial
- SP1 Special Activities
Scope of work
The scope of this work includes the following elements identified by the City of Newcastle in their brief for the strategy:

- Analysis of any recent population and employment profiles within the City using relevant data such as ABS, and Bureau of Transport Data.
- Analysis of recent macro and micro economic trends including emerging industries that may influence the future of employment lands in the City of Newcastle.
- Audit existing land uses across employment areas to identify the strengths and weaknesses of each area (if necessary).
- Project future employment growth to predict future floor space demand.
- Estimate trends in retail demand and implications for future floor space demand.
- Assess the suitability and capacity of existing employment lands to accommodate projected growth.
- Identify opportunity sites and buildings to continue regeneration and revitalisation, promote creative industries, innovation and entrepreneurship, and attract additional anchor institutions and cultural facilities.
- Consider the relationship of employment land within the City to the suitability and capacity of employment land in adjoining local government areas.
- Identify land use planning opportunities to address the identified needs.
Document structure

The report is structured into the following sections:

- **Section 1: Strategic context** - The broader context for the strategy, including existing policies and consultation with stakeholders.
- **Section 2: Land use context** – A summary of current retail and industrial land use in the Newcastle LGA
- **Section 3: Economic trends and drivers** – Economic trends in the broader economy and how they may impact on employment generating land uses in the future
- **Section 4: Economic and demographic profile** – Analysis of current employment and demographics in the Newcastle LGA and how they have changed recently
- **Section 5: Floorspace supply** – The current amount of retail and industrial floorspace in each part of the Newcastle LGA and the capacity for additional floorspace
- **Section 6: Floorspace demand** – Likely future demand for employment generating floorspace based on population and employment projections
- **Section 7: Discussion** – Synthesis of the findings in the study and their implications for land use planning in the Newcastle LGA
- **Section 8: Employment strategy** – Planning principles and actions responding to the findings of the report
2. STRATEGIC CONTEXT

2.1 Policy review

Hunter Regional Plan 2036

The Hunter Regional Plan 2036 was released by the NSW Government in 2016 to guide land use planning priorities and decisions over the next 20 years. It provides an overarching framework to guide more detailed land use plans, development proposals and infrastructure funding decisions.

The vision for the Hunter Region is **the leading Regional economy in Australia with a vibrant new metropolitan city at its heart**. Greater Newcastle, which includes Newcastle Local Government Area (LGA) and four other LGAs, is the centrepoint of the Hunter Region and key to its success. The Plan identifies Newcastle City Centre as the heart of Greater Newcastle and the capital of the Hunter Region.

The vision for Greater Newcastle is **a vibrant new metropolitan area with global gateways that maximise exports and tourism, and a centre of excellence for health and education**. The Newcastle City Centre will be a knowledge centre of excellence in health and education providing world-class research into medical technologies, agricultural productivity, renewable energy and mining services.

The Plan notes the growing demand in Asia for agricultural produce, increasing environmental tourism and greater demand for education and innovation in medical research as macro trends that could influence Greater Newcastle’s economic prosperity.

Table 1 summarises the directions and actions in the Plan that are relevant to the Newcastle Employment Lands Strategy Review project.

<table>
<thead>
<tr>
<th>Directions</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direction 1 – Grow Greater Newcastle as Australia’s next metropolitan city</strong></td>
<td>Prepare a Greater Newcastle Metropolitan Plan that focuses investment to growth industries and increase economic diversification.</td>
</tr>
<tr>
<td><strong>Direction 2: Enhance connections to the Asia-Pacific through global gateways</strong></td>
<td>Promote diversification of operations at the Port of Newcastle and the Newcastle Airport and enhanced connectivity to the Asia-Pacific.</td>
</tr>
<tr>
<td><strong>Direction 3 – Revitalise Newcastle City Centre</strong></td>
<td>Leverage the increased presence of the University of Newcastle in the city centre.</td>
</tr>
<tr>
<td><strong>Direction 4: Enhance Inter Regional linkages to support economic growth</strong></td>
<td>Strengthen and leverage opportunities from the interconnections with other Regions, particularly the Pacific Highway, the Golden Highway and the New England Highway.</td>
</tr>
<tr>
<td></td>
<td>Promote freight facilities that leverage the Port of Newcastle and its associated freight transport network.</td>
</tr>
<tr>
<td></td>
<td>Investigate opportunities for logistics and freight growth and other complementary land uses around airports, leveraging investments at Taree and Newcastle airports.</td>
</tr>
<tr>
<td><strong>Direction 7: Develop advanced manufacturing, defence and aerospace hubs</strong></td>
<td>Cluster emerging high-technology industry, defence and aerospace activities on land surrounding Newcastle Airport.</td>
</tr>
</tbody>
</table>
Newcastle employment lands strategy

Directions

<table>
<thead>
<tr>
<th>Direction 8: Promote innovative small business and growth in the service sectors</th>
<th>Implement initiatives to promote small business growth and innovation, particularly in Newcastle City Centre and other strategic centres.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Facilitate opportunities for incubator spaces for technology and non-technology early stage businesses.</td>
</tr>
<tr>
<td></td>
<td>Foster education precincts.</td>
</tr>
<tr>
<td>Direction 12: Diversify and grow the energy sector</td>
<td>Identify and support opportunities for smaller-scale renewable energy initiatives such as those using bioenergy or waste coalmine methane.</td>
</tr>
<tr>
<td>Direction 24: Protect the economic functions of employment land</td>
<td>Locate new employment land so that it does not conflict with surrounding residential uses.</td>
</tr>
<tr>
<td></td>
<td>Protect the economic functions of employment land by not permitting non-industrial uses unless opportunities for urban renewal arise and contaminated land can be remediated.</td>
</tr>
<tr>
<td>Direction 27: Strengthen the economic self-determination of Aboriginal communities</td>
<td>Work with Local Aboriginal Land Council to identify priority sites and to develop options for the potential commercial use of the land.</td>
</tr>
</tbody>
</table>

Source: Hunter Regional Plan 2036

Key points for future planning

- Newcastle City Centre will play an important local and Regional role as the heart of Greater Newcastle and the capital of the Hunter Region.
- The Plan envisions that Greater Newcastle will have a skilled science, technology and engineering workforce engaging in advanced manufacturing and digital technologies.
- Newcastle Airport and the Port of Newcastle are catalyst areas for economic development. The Plan identifies that Newcastle Airport will have strong technology, defence and aerospace industries while the Port of Newcastle will be a vital hub for exporting agricultural produce and coal to new markets throughout Asia.
- A new cruise ship terminal is proposed in Newcastle Harbour, but NSW Government funding for this project has since been removed and it is uncertain whether it will proceed. If this terminal were to be built, it would create opportunities for the tourism sector.
- Newcastle City Centre could leverage the $95 million investment in the University of Newcastle’s City Centre campus and the $9.8 million investment in the Hunter Innovation Project.
- There are anticipated to be an additional 61,500 jobs at the Hunter Region by 2036, with 12.6 per cent of them in the Newcastle City Centre (32,691 jobs by 2036, a growth of 31 per cent from 2016).
- 25 per cent of the population is anticipated to be aged over 65 years by 2036 indicating a growing demand for Healthcare and Social Assistance workers.
- Domestic Services (Construction, Retail Trade, Accommodation and Food Services, Arts and Recreation Services, Other Services) sector is projected to remain the largest employment sector in the Hunter Region by 2036.

Greater Newcastle Metropolitan Plan 2036

The Greater Newcastle Metropolitan Plan 2036 was released by the NSW Government in 2018 to set out strategies and actions that will drive growth across Cessnock, Lake Macquarie, Maitland, Newcastle and Port Stephens Local Government Areas (LGAs). The Metropolitan
Plan is a 20 year plan for the Greater Newcastle area to deliver the vision of the Hunter Regional Plan 2036.

The Metropolitan Plan outlines five elements that will shape Greater Newcastle into a dynamic and entrepreneurial city with a globally competitive economy and a great lifestyle, framed by wineries to the waterfront. These five elements are the metro heart, metro core, metro frame, trading hubs and iconic tourism destinations. The Plan identifies Newcastle City Centre as the metro heart that will attract residents, workers and students.

Table 2 summaries the outcomes for each of the goals set out in the Hunter Regional Plan.

### TABLE 2: GOALS AND OUTCOMES FOR GREATER NEWCASTLE

<table>
<thead>
<tr>
<th>Goals</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1 – The leading regional economy in Australia</td>
<td>Create a workforce skilled and ready for the new economy</td>
</tr>
<tr>
<td>Goal 2 – A biodiversity-rich natural environment</td>
<td>Enhance environment, amenity and resilience for quality of life</td>
</tr>
<tr>
<td>Goal 3 – Thriving communities</td>
<td>Deliver housing close to jobs and services</td>
</tr>
<tr>
<td>Goal 4 – Greater housing choice and jobs</td>
<td>Improve connections to jobs, services and recreation</td>
</tr>
</tbody>
</table>

Source: Greater Newcastle Metropolitan Plan 2036

Several areas within the Newcastle LGA have been identified as catalyst areas for Greater Newcastle including Newcastle City Centre, Beresfield-Black Hill, Broadmeadow, Callaghan, John Hunter Hospital, Kotara and Newcastle Port. These catalyst areas are places of metropolitan significance that need a collaborative approach in delivering new jobs and homes.

Figure 2 outlines the job target for each of the catalyst areas by 2036. Newcastle City Centre has the highest minimum additional jobs to 2036 and the highest minimum job target. Table 3 outlines the desired role and outcomes for the Catalyst Areas in Newcastle LGA that are relevant to the economic development of Newcastle LGA.
FIGURE 2: JOB TARGETS FOR CATALYST AREAS 2016 TO 2036

Source: Greater Newcastle Metropolitan Plan 2036
<table>
<thead>
<tr>
<th>Catalyst Areas</th>
<th>Desired role</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newcastle City Centre</td>
<td>Business district with significant commercial floor space</td>
<td>Wickham Precinct – expand the city centre towards Wickham and provide floorspace for emerging new economy industries and businesses</td>
</tr>
<tr>
<td></td>
<td>Metropolitan civic, recreation and cultural facilities, and major events</td>
<td>West End Precinct – increase commercial and accommodation floorspace surrounding the Newcastle Interchange</td>
</tr>
<tr>
<td></td>
<td>Education and innovation precinct</td>
<td>Civic Precinct – promote the Precinct as an education and research hub</td>
</tr>
<tr>
<td></td>
<td>Urban renewal precinct</td>
<td>East End Precinct – transport spaces for new shops and other uses, revitalise Hunter Street Mall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Newcastle East Precinct – plan for additional tourists</td>
</tr>
<tr>
<td>Beresfield-</td>
<td>Freight and logistics hub, with complementary manufacturing and light</td>
<td>Beresfield Precinct – promote freight and logistics, manufacturing and other light industrial uses and protect the freight corridor</td>
</tr>
<tr>
<td>Black Hill</td>
<td>industrial activity</td>
<td>Potential for growth and expansion of industries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emerging Black Hill Precinct – plan for freight and logistics uses</td>
</tr>
<tr>
<td>Broadmeadow</td>
<td>Nationally significant sport and entertainment precinct</td>
<td>Hunter Sports and Entertainment Precinct – Improve pedestrian and cycle access and connections within the Precinct, and to Broadmeadow Station and other public transport stops</td>
</tr>
<tr>
<td></td>
<td>Providing a mix of uses that facilitates growth and change in surrounding</td>
<td>Nineways Precinct – facilitate office, retail and medium density housing and protect corridors for major future public transport</td>
</tr>
<tr>
<td></td>
<td>centres and residential areas</td>
<td>Lampton Road Precinct – promote light industrial and business uses to support the growth of surrounding areas and investigate potential for mixed-uses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Broadmeadow Station Precinct – improve the street layout to increase pedestrian access between Broadmeadow Station and surrounding residential and employment areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Broadmeadow Road Precinct – align local plans to protect light industrial uses and facilitate commercial and medium density housing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Locomotive Depot Precinct – plan for medium density and business uses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Former Gasworks Precinct – respond to opportunities for re-use of the site and buildings and allow for business, light industrial and other uses that provide for economic renewal</td>
</tr>
<tr>
<td>Callaghan</td>
<td>Tertiary education, research and innovation cluster based around the University of Newcastle</td>
<td>Callaghan Campus Precinct – grow an education cluster within and surrounding the Callaghan Campus, including student accommodation, research and business</td>
</tr>
<tr>
<td></td>
<td>Emerging mixed-use centre that utilises Warabrook Station and bus routes,</td>
<td>Warabrook Station Precinct – facilitate accommodation, residential and business uses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warabrook Business Park Precinct – promote business uses that grow engineering, research and high-tech manufacturing jobs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Student Accommodation Precinct – facilitate residential and student accommodation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jesmond, Warabrook and Waratah Centres – facilitate business uses and the development of innovation hubs and start-up businesses capitalising on proximity to the University</td>
</tr>
<tr>
<td>John Hunter Hospital</td>
<td>Health cluster centred around the John Hunter Hospital, providing tertiary level medical services, and a diverse range of complementary health services</td>
<td>John Hunter Hospital Precinct – intensify the medical research, education and ancillary health uses within the precinct and in nearby centres of Jesmond, Lambton and New Lambton, and increase the potential for retail, commercial and short-stay accommodation within and surrounding the Precinct</td>
</tr>
<tr>
<td></td>
<td>Emerging medical research, innovation and education hub</td>
<td>New Kotara Town Centre Precinct – transform the Precinct from large format retail to a mixed-use town centre with diverse uses, including office and shop top housing</td>
</tr>
<tr>
<td>Kotara</td>
<td>Diverse employment centre with mixed-use and high density residential</td>
<td>Kotara Shopping Centre Precinct – diversify the mix of land uses including housing</td>
</tr>
<tr>
<td></td>
<td>connected to frequent public transport services</td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Precinct</th>
<th>Key Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Park Avenue Employment Precinct – retain existing <strong>business</strong> &lt;br&gt;development and industrial land uses** to service the surrounding &lt;br&gt;communities of Adamstown and New Lambton</td>
<td></td>
</tr>
<tr>
<td>Searle Street Employment Precinct – intensify <strong>light industrial and &lt;br&gt;office uses</strong>, and improve internal street layout and integration with &lt;br&gt;surrounding residential and commercial areas and Kotara Railway &lt;br&gt;Station</td>
<td></td>
</tr>
<tr>
<td><strong>Newcastle Port</strong>&lt;br&gt;Global gateway, providing international &lt;br&gt;freight connections servicing Greater &lt;br&gt;Newcastle and the Hunter Region</td>
<td>Carrington Precinct – enable existing port-related activities and &lt;br&gt;investigate options for land uses in this Precinct that support further growth and diversification of trade</td>
</tr>
<tr>
<td>Emerging tourism gateway centred around the Newcastle &lt;br&gt;Cruise Terminal</td>
<td>Dyke Point Precinct – reactivate Port of Newcastle and the Hunter as a major <strong>ship repair and maintenance destination</strong></td>
</tr>
<tr>
<td>Capacity to generate port-associated industry and regional and local &lt;br&gt;employment</td>
<td>Kooragang Coal Export Precinct – protect the operation of <strong>coal</strong> &lt;br&gt;exports</td>
</tr>
<tr>
<td>Mayfield Port Precinct – support the growth and diversification of &lt;br&gt;port import and export operations and protect freight rail access &lt;br&gt;allow for expansion</td>
<td>Walsh Point Precinct – enable <strong>heavy industry land uses</strong>, including &lt;br&gt;chemical and mining manufacturing</td>
</tr>
<tr>
<td>Mayfield North Industrial Precinct – protect existing industrial land &lt;br&gt;uses, investigate the potential diversification and growth of <strong>industrial &lt;br&gt;land use</strong>, maintain prohibition of retail, bulky goods and residential &lt;br&gt;uses</td>
<td>Mayfield Freight and Logistics Precinct – facilitate <strong>freight and &lt;br&gt;logistics, intermodal and warehousing uses</strong>, maintain prohibition of &lt;br&gt;retail, bulky goods retailing and residential uses</td>
</tr>
<tr>
<td>Steel River Precinct – facilitate <strong>engineering, research and high-tech &lt;br&gt;manufacturing uses</strong></td>
<td>Throsby Precinct – accommodate <strong>light industrial and new economy &lt;br&gt;uses</strong>, support <strong>tourism opportunities</strong>, plan for the relocation of bulk &lt;br&gt;fuels to Mayfield Port Precinct, investigate renewal opportunities &lt;br&gt;including creative industries and medium density housing</td>
</tr>
</tbody>
</table>

**Key points for future planning**

- Freight and Logistics uses will be promoted in Beresfield- Black Hill and Newcastle Port.
- Mayfield North Industrial Precinct and Mayfield Freight and Logistics Precinct of Newcastle Port will be protected from retail, bulky goods and residential uses.
- Engineering, research and high-tech manufacturing uses will be promoted in Warabrook Business Park and Steel River Precinct.
- An increased diversity of exports would grow trade levels at the Port of Newcastle, increasing its strategic importance and generating other economic opportunities.
- Increased tourism is expected around Newcastle City Centre and Newcastle Port as a result of a proposed cruise ship terminal.
- The health and education sectors are supported by anchor institutions including John Hunter Hospital and the University of Newcastle.
- There are urban renewal opportunities as manufacturing and heavy industry move outside the built-up area.

**Newcastle Local Planning Strategy**

The Newcastle Local Planning Strategy (LPS) was released by the City of Newcastle in 2015 to guide the future growth and development of Newcastle to 2030 and beyond. The LPS is a comprehensive land use strategy that provides strategic directions to both the Newcastle Local Environmental Plan 2012 (LEP) and the Development Control Plan 2012 (DCP). The LPS contains 17 principles that aim to implement the seven strategic directions from the
Newcastle Employment Lands Strategy

Newcastle 2030 Community Strategic Plan (CSP) which emphasises the importance of creating a liveable and distinct built environment. The principles and strategic directions of the LPS are to be considered in land use planning decisions. The LPS will inform amendments to the Newcastle LEP 2012.

The Smart and Innovative City direction from the CSP envisions a vibrant, diverse and resilient green economy built on educational excellence and research. The principles related to this direction are:

- A creative, culturally rich and vibrant community will be encouraged by providing a greater diversity of quality housing, business and recreational opportunities
- The land use pattern will reinforce mixed-use centres, educational nodes and support technology-based businesses and industries

The LPS identifies a hierarchy of commercial centres and notes that the LPS principles will be achieved by reinforcing the hierarchy. The hierarchy identifies Newcastle City Centre as the Regional City which services the Hunter Region. Most of the Catalyst Areas in the Greater Newcastle Metropolitan Plan belong to Major Local Centres and Specialised Centres, except for Kotara. The LPS identifies Kotara as a Neighbourhood Centre which is a smaller centre that meets the daily and weekly needs of the local residents and the working population. The Metropolitan Plan on the other hand envisions Kotara to become a diverse employment centre with offices and shop top housing.

**Key points for future planning**

- Out of centre development is discouraged by the LPS, with the hierarchy of centres promoting mixed-use centres located near transport nodes or along public transport routes.
- Specialised Centres including Port of Newcastle, Newcastle Airport, University of Newcastle, John Hunter Hospital and Mater Hospital are important strategic assets for the economic development of Newcastle.
- Renewal corridors including Islington, Mayfield, Hamilton, Broadmeadow and Adamstown have been identified as having opportunities for economic and/or housing renewal and intensification.
- Land use zonings correspond with the centres hierarchy and reinforces the higher order of Newcastle City Centre by giving it a B3 Commercial Core zoning. The B3 zoning is intended to provide an advantage for commercial uses to locate within the City Centre over alternative centres.
- It is expected that future growth will require more health and education uses and that the existing clusters such as the John Hunter Hospital may not be sufficient.
- Additional commercial office space is allowed in the centres.
- Retail services are encouraged in neighbourhood and local centres or renewal corridors.

Newcastle Employment Lands Strategy

Newcastle Employment Lands Strategy was released by the City of Newcastle in 2013 to inform the demand for employment uses and promote economic growth in the LGA. The Strategy identifies the short term (2006 to 2016), medium term (2017 to 2021) and long term (2022 to 2031) economic role of Newcastle LGA, the three precincts and the centres within the precincts.

The top three employing industries in 2006 were Health Care and Social Assistance, Retail Trade and Education and Training. The top three industries for growth are projected to be Health Care and Social Assistance, Retail Trade and Professional, Scientific and Technical Services. The largest actual growth in demand for floorspace is projected to occur in the Transport, Postal and Warehousing sector. It is also projected to have the greatest increase in demand for site area.
Analysis shows that population growth and labour market trends are likely to generate demand for 11,000 additional jobs to 2031. Health Care and Social Assistance jobs are expected to continue to play an important role to meet the needs of local residents, particularly the ageing resident population. Manufacturing jobs has declined and there is a trend towards more people seeking Professional or Manager positions. A growth in knowledge based jobs is expected. The demand for retail floor space will increase as it is tied to population growth. It is projected that there will be demand for over 570,000 square metres of retail space across Newcastle LGA by 2031. 37 percent of the demand is expected to occur in the Inner Precinct of Newcastle.

**Key points for future planning**

- The Strategy found that there will be a net increase in the demand for 57 ha of industry and construction related land by 2031 across Newcastle LGA, despite the expected decline in the demand for industrial land in the Central and Outer Precincts
- Wider uses of industrial land are recommended in the Central Precinct given the long-term trend of the decline in the demand for employment lands
- The Beresfield Employment Area in the Outer Precinct is an attractive place to businesses as it allows development at a lower cost than on brownfield sites. It is expected to contribute to the mix of employment areas in Newcastle LGA.

**TfNSW Regional NSW Services and Infrastructure Plan**

The Regional NSW Services and Infrastructure Plan was released by Transport for NSW in 2018 to provide a long-term strategic vision at the state-wide level for regional NSW. Inland Rail through NSW is identified as a game changer opportunity for the regional freight network.

Transport for NSW is introducing a new Intercity Fleet that will provide services from Sydney to the Central Coast, Newcastle, the Blue Mountains and the Illawarra. It will improve levels of passenger comfort, operational performance and regional jobs.

The Plan discusses the following initiatives that will provide or improves connections to Newcastle:

- Strategic investigation to increase access across the Great Dividing Range from inland NSW to Newcastle/Sydney/Wollongong
- Faster rail connections between Newcastle and Sydney
- Improved east-west crossings of the Greater Dividing Range will connect the resource rich regions of the Hunter, Central West and Orana and New England and North West to Newcastle’s port and airport

The Plan identifies freight, logistics and distribution services as the core industry of regional NSW. The industry is expected to grow and will require more investment in freight and logistics infrastructures. One important factor in planning regional transport is geography. The Plan identifies four different geographies; remote, inland, coastal and outer metropolitan. Newcastle LGA is in the coastal area. Newcastle has been identified as a global gateway city and has both city to city links and city to regional centre links.

The Plan suggests a ‘hub and spoke’ approach to regional transport network planning that radiates out from regional cities such as Newcastle rather than a network that focuses on Sydney. Newcastle LGA could leverage from this transport approach by connecting more efficiently to other centres.

**Key points for future planning**

The following transport infrastructure projects will bring more jobs and people to Newcastle as accessibility is enhanced:

- These initiatives will improve the local and regional connections of Newcastle
• There will be town centre revitalisation opportunities for the new rail station locations.
• A wider workforce would be able to access Newcastle via the light rail, rapid bus and faster rail.
• Improvements to Newcastle Port and M1- Newcastle SMART Motorway will make Newcastle a more attractive place for industries that require good freight and logistic access.
• Regional NSW committed initiatives (0 to 10 years): Newcastle Cruise terminal, Newcastle Light Rail, Newcastle Inner City Bypass - Rankin Park to Jesmond
• Regional NSW initiatives for investigation (0 to 10 years): Improvements to Newcastle Port, bus head start for Greater Newcastle, Greater Newcastle Rapid Bus Package, Newcastle Light Rail network extension, Greater Newcastle Place Plans, Sydney-Central Coast-Newcastle Faster Rail improvement
• Regional NSW initiatives for investigation (10 to 20 years): Newcastle Ferry Network extension, M1- Newcastle SMART Motorway, Dubbo to Newcastle rail connection
• Regional NSW initiatives for investigation (20+ years): New rail alignment of North Coast Line between Newcastle and Stroud Road, new suburban type rail service for Greater Newcastle, Cessnock to Newcastle rail services via Kurri Kurri

Greater Newcastle Future Transport Plan

The Greater Newcastle Future Transport Plan provides the overarching strategic transport network and vision that will guide future transport planning for the Greater Newcastle area. The following table summarises the drivers of transport demand across the centres in Newcastle:

<table>
<thead>
<tr>
<th>Centre</th>
<th>Drivers of demand</th>
</tr>
</thead>
</table>
| Kotara                         | ▪ Retail and businesses: Westfield Kotara and Homemakers Centre Charlestown, Charlestown Square and Pacific Highway retail and businesses  
|                                | ▪ Health: Charlestown Private Hospital  |
| Broadmeadow                    | ▪ Recreational: Newcastle Showground, Newcastle Entertainment Centre, Newcastle Basketball Stadium, McDonald Jones Stadium, Newcastle, International Hockey Centre and Broadmeadow Racecourse |
| City of Newcastle              | ▪ Retail and business: Newcastle city centre retail and businesses, Marketown Shopping Centre and Darby Street  
|                                | ▪ Transport: Wickham Interchange and Queens Wharf Ferry stop  
|                                | ▪ Education: University of Newcastle city campus and TAFE NSW – Hamilton Campus  
|                                | ▪ Civic: Newcastle City Council Administration Centre, Newcastle Library, Newcastle courthouse, Newcastle Museum  
|                                | ▪ Recreational: Newcastle harbour foreshore and beaches, including Nobbys Lighthouse, Newcastle Civic Theatre, parks. |
| John Hunter Hospital           | ▪ Health: John Hunter Hospital and Newcastle Private Hospital  
|                                | ▪ Recreational: Blackbutt Reserve  |
| University of Newcastle, Callaghan | ▪ Education: University of Newcastle  
|                                | ▪ Health: Calvary Mater Hospital  |

Port of Newcastle Master Plan 2040

The Port Master was released by the Port of Newcastle in 2018 to outline key strategic development and trade opportunities for the Port and broader region to 2040.

The Port of Newcastle is the largest port on the East Coast, and Australia’s third largest port by trade volume. It is expected that Port of Newcastle’s coal export trade will provide a stable foundation for the economy and the trade volumes of fuels, and dry bulk such as wheat, grains and fertiliser will continue to grow. The Master Plan identifies that following goals:

• Promote the capacity of the Port and the supply chain to support the economy
Utilise the existing road and rail transport assets to improve freight efficiency
- Facilitate new trade and supply chains
- Support the development of new facilities and enabling infrastructure
- Protect the Port and transport corridors from urban encroachment.

The vision for the Port of Newcastle is to become Australia’s first-choice East Coast port, able to accommodate, attract and grow a diverse trade base in an efficient, sustainable, profitable and innovative manner. The Master Plan identifies the following future opportunities including: the Newcastle Container Terminal in Mayfield, the Newcastle Bulk Terminal in Walsh Point, a specialised Automotive and Ro-Ro Hub, the Maritime Precinct in Carrington, and the construction of the Newcastle Cruise Terminal in Carrington.

Port of Newcastle’s core trades include bulk commodities such as coal, fuel, grains and fertiliser, and breakbulk and project cargo. These trades are expected to continue to grow.

Key points for future planning
- Future growth in coal export can be accommodated within the current coal terminal capacity.
- Fuel imports are projected to increase to 4,100 ML by 2040, a fuel pipeline from Newcastle is suggested to reduce fuels cost and safety risks for other road users.
- Future growth in grains export can be accommodated within the current capacity.
- The visitor economy is expected to grow, and the Channel Berth in Carrington and the Newcastle Cruise Terminal have the capacity to accommodate the current and future needs of the cruise industry.
- The Port of Newcastle plans to develop a container terminal at Mayfield to accommodate larger regional trains for quick turnaround and generate significant cost savings in land freight transport costs for exporters.
- The Port of Newcastle has adequate land within the Port to develop dedicated Ro-Ro (wheeled cargo) facilities to support the development of new supply chains that cater for emerging import industries and innovative technologies in the automotive industry.
- The development of the Mayfield Freight and Logistics Precinct for an integrated multi-modal freight and logistics hub to complement the Newcastle Container Terminal is critical for the efficacy of supply chains.

Wickham Master Plan
The Master Plan was adopted by Council in 2017 and it outlines the vision of the transformation of a semi-industrial suburb to a mixed-use urban area reinforcing the Newcastle City Centre Core. The vision for the area is to continue to evolve into a diverse and dynamic mixed-use neighbourhood.

This master plan was prepared because there was a strategic shift of moving Newcastle City Centre’s commercial core from Newcastle East and Newcastle West. Also, there was a need to identify appropriate building envelopes, land use and public domain planning for the Wickham area.

2.2 Stakeholder consultation
Six one on one stakeholder interviews have been conducted. Stakeholders from the following organisations were contacted:
- Property Council of Australia, Newcastle Chapter
- Hunter and Central Coast Development Corporation
- Knight Frank

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1 Roll-on/roll-off (RORO or ro-ro) ships are ferries designed to carry wheeled cargo, such as cars, trucks, semi-trailer trucks, trailers, and railroad cars, that are driven on and off the ship on their own wheels or using a platform vehicle, such as a self-propelled modular transporter.
There is a consensus that independent retailers are not doing well in Newcastle. The three shopping centres including Westfield at Kotara, Stockland Green Hills Shopping Centre at East Maitland and Charlestown Square at Charlestown have attracted most of the customers away from main street retail. Main street retailers are also doing poorly in Newcastle CBD.

Most commercial office uses are concentrated in Newcastle CBD. There is some demand for A grade office space and the vacancy rate is low. Tourism was identified as a growing sector, with some recent hotel developments in Newcastle CBD.

Industrial uses are in demand and the Port of Newcastle holds large areas of undeveloped industrial land. The Port is looking to package up this land and release it to the market.

Professional service and industrial jobs were anticipated to grow as the Port will become a major supplier of renewable energy. John Hunter Hospital, Callaghan and Newcastle CBD intend to diversify their health and education offers and attract other businesses, which would also increase employment.

Public transport accessibility is poor in many places. As a result, many workers who live in outer suburbs drive to Newcastle CBD to work. The provision of car parking spaces was seen to be crucial for businesses in Newcastle CBD.

Land use conflicts could be an issue for Kotara as a result of surrounding low-density residential development. Management of the transition from low density to higher densities needs to be considered.
3. LAND USE CONTEXT

3.1 Retail centres

Current centre hierarchy

The previous Newcastle centre hierarchy as adopted in the 2013 Newcastle Employment Lands Strategy and is shown in Figure 3. The intended current and future functions of each kind of centre as identified in the Strategy are listed in Table 5.

**TABLE 5: INTENDED ROLES OF EACH KIND OF CENTRE IN THE PREVIOUS CENTRE HIERARCHY**

<table>
<thead>
<tr>
<th>Centre type</th>
<th>Centre function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional City</td>
<td>Services the region with higher order administration, education, health services, cultural and recreational facilities higher density commercial and residential. Commercial centre focus with large retail and commercial floor area, including department stores.</td>
</tr>
<tr>
<td>Town Centre</td>
<td>Shopping and Business centre for the district, including health and professional services mixed with medium and higher density residential.</td>
</tr>
<tr>
<td>Stand-alone shopping centre</td>
<td>Privately owned centres located away from other commercial centres, containing many attributes of a town but without housing or open space.</td>
</tr>
<tr>
<td>Neighbourhood centre</td>
<td>Emerging centre identified as necessary to meet the day to day needs of future residents. Providing retail and community facilities to meet the needs for the local population and workforce</td>
</tr>
<tr>
<td>Specialised centre</td>
<td>Centres and concentrations of regionally significant economic activity and employment</td>
</tr>
</tbody>
</table>

Source: City of Newcastle 2013, Newcastle Employment Lands Strategy

This hierarchy emphasises the primacy and importance of the Newcastle City Centre as the only centre of its kind in the LGA and surrounds, and as having a higher-order administration, education, health services, cultural and commercial role.

Smaller town centres are intended to serve as both shopping and business centres for their surrounding catchments and are distributed throughout the LGA. There are also a large number of neighbourhood centres, although these are more densely distributed in the eastern half of the LGA than the western half.

Kotara is identified as a stand-alone centre, which means it is located away from other centres and does not contain all of the attributes which would lend themselves to a larger centre role, including housing and open space.

Newcastle University and John Hunter Hospital are listed as specialised centres, meaning that they are concentrations of regionally significant employment but do not have a broader centre role.
Major retailers

Figure 4 shows the distribution of major retailers in the Newcastle LGA. These supermarkets and department stores are large and commonly visited retailers which provide an anchor function to the surrounding centre, driving local foot traffic. Their distribution illustrates the current function of different centres as well as influencing their future prospects.

Each of the town centres discussed above, except for Adamstown, and some of the neighbourhood centres, contains a major supermarket in the form of a Woolworths or Coles. Supermarkets are distributed throughout the LGA, reflecting their local convenience retailing role. Spending in supermarkets is relatively resilient to the impacts of online retailing, which is likely to assist the performance of centres with a large supermarket in the future.

There are five discount department stores in the Newcastle LGA, with two in Kotara, one in the Newcastle City Centre and two in smaller town centres. Kotara contains the only non-discount department store in the form of a David Jones. The disparity in the number of
anchor retailers in Kotara compared to Newcastle City Centre illustrates the larger retail role it plays.

As well as Kotara, there are several other major shopping centres nearby which perform a stronger retailing function in terms of anchor tenants than the Newcastle City Centre. Charlestown and Glendale are both near the boundary of the Newcastle LGA to the south and each contain three supermarkets and two discount department stores, while Charlestown also contains a Myer. These centres pose a threat to the status of Newcastle City Centre as a major and mainstream retailing destination given their broad range of anchor tenants and their convenient locations for car access next to major roads.

FIGURE 4: ANCHOR RETAILERS IN THE NEWCASTLE LGA
3.2 Industrial and employment lands

Land use zones

In the Newcastle LGA the following zones have a predominately industrial function:

- IN1 General Industrial
- IN2 Light Industrial
- IN3 Heavy Industrial
- B5 Business Development
- SP1 Special Activities

The land to which these zones apply is shown in Figure 5.

The majority of industrial land in the LGA is zoned IN2, which is intended to permit industrial uses which have minimal adverse effects on other land uses. The IN1 zone only applies to a large release precinct in Mayfield, while the IN3 zone applies to industrial areas in Sandgate and Hexham as well as a steel mill in Mayfield.

A large part of the Newcastle LGA is zoned SP1 Special Activities. The development of this land is governed by the *State Environmental Planning Policy (Three Ports) 2013*, which aims to allow the efficient development, re-development and protection of land at Port Botany, Port Kembla and the Port of Newcastle for port purposes, including heavy industry in some cases. The SP1 zone permits a variety of industrial land uses, but much of the land it covers is part of the Port of Newcastle Lease Area and is used as part of the Port rather than for general industrial purposes.

The overall amount of developed and undeveloped industrial land in the Newcastle LGA is shown in Table 6. There is a very large amount of undeveloped and serviced industrial land, although around half of this is zoned SP1. Some of this land is likely to be subject to environmental and other development constraints, for example from flooding or biodiversity. There is less, but still a substantial amount, of unserviced and undeveloped industrial land.
FIGURE 5: INDUSTRIAL LAND USE ZONES IN THE NEWCASTLE LGA

TABLE 6: INDUSTRIAL AND EMPLOYMENT LAND IN THE NEWCASTLE LGA (HA)

<table>
<thead>
<tr>
<th>Zone</th>
<th>Undeveloped – Serviced</th>
<th>Undeveloped – Unserviced</th>
<th>Developed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN1</td>
<td></td>
<td></td>
<td>40.3</td>
<td>58.3</td>
</tr>
<tr>
<td>IN2</td>
<td>357.9</td>
<td>149.3</td>
<td>466.3</td>
<td>897.4</td>
</tr>
<tr>
<td>IN3</td>
<td></td>
<td></td>
<td>148.1</td>
<td>224.2</td>
</tr>
<tr>
<td>B5</td>
<td>0.8</td>
<td>6.1</td>
<td>52.5</td>
<td>59.4</td>
</tr>
<tr>
<td>SP1</td>
<td>375.8</td>
<td>53.6</td>
<td>1,057</td>
<td>1,486</td>
</tr>
<tr>
<td>Total</td>
<td>725.5</td>
<td>209</td>
<td>1,764</td>
<td>2,726</td>
</tr>
</tbody>
</table>

Source: Department of Planning, Industry and Environment 2019, Employment Land Development Monitor Hunter Region 2018

Note that the amount of undeveloped land is not broken into land use zones by the 2018 Employment Land Development Monitor Hunter Region, so the reported figures are totals across the IN1, IN2 and IN3 zones.
Purpose of the B5 zone

The B5 zone is intended to enable a wide range of business and warehouse uses with a variety of employment generating functions. This includes large-format retail premises and most commercial premises. It is applied in different contexts, including to the large-format homemaker retail centre in Kotara. However, most of the areas zoned B5 (those in Lambton and Broadmeadow) appear to have a strong light industrial function, although they contain a larger amount of retail and wholesale activity than other industrial zones. An example of a B5 zoned area in Broadmeadow is shown in Figure 6, with the predominately industrial and warehousing built form visible.

FIGURE 6: A MAJOR ROAD CORRIDOR ZONED B5

The diverse uses of the B5 zone are visible in the zone objectives, which are:

- To enable a mix of business and warehouse uses, and bulky goods premises that require a large floor area, in locations that are close to, and that support the viability of, centres.
- To accommodate a wide range of employment generating uses and associated support facilities including light industrial, transport and storage activities.

These objectives include two broad classes of land uses: business are warehouse uses including light industrial, transport and storage activities; and bulky goods premises. The land uses expected in each area are different, with many industrial premises not expected in a bulky goods retail centre like the B5 zone in Kotara and significant amounts of specialised floorspace not expected in predominately light industrial precincts like the B5 zone shown in Figure 6. Splitting these two zone functions would allow more specific zone objectives to be developed and permissible uses to be reviewed.

Industrial precincts and functions

SGS has categorised the industrially zoned areas in the Newcastle LGA into employment precincts to facilitate discussion of the different current and future industrial roles and functions of each precinct. The precincts are shown in Figure 7.

These precincts generally group together areas which are nearby and in most cases, which have similar land uses. However, in some cases a variety of built forms and uses are present in a small area.

There are a wide variety of land uses in industrial precincts in the Newcastle LGA. This diversity is mirrored in the industries and kinds of businesses operating in different precincts.
Nonetheless, it possible to identify several broad categories of industrial activity and associated precincts to provide strategic guidance about industrial land use functions.

**Light industrial precincts** predominate on local resident populations and local business connections and often service local catchments. Example uses include domestic storage, some minor local or ‘urban’ manufacturing and motor repairs. These precincts often have smaller lots than other kinds of precincts, with lots which may be strata titled and accommodate several small businesses.

Some uses common in light industrial precincts, for example car repairers, provide important services to the local population. If they were not present the urban amenity of the area would be reduced. Other common uses, like small warehousing spaces or wholesalers, may form an important part of the local supply chain associated with larger centres with higher-order economic functions like Newcastle City Centre.

The importance of light industrial precincts scattered throughout a region has been recognised by the Greater Sydney Commission and NSW Government in the policy to protect land for industrial and urban services uses. The use of the term urban services reflects their role in serving the local urban population and enabling other businesses and industries to operate.

**Strategic industrial precincts** contain businesses which are not as dependent on the local population and local businesses connections. These include larger manufacturing businesses and large freight and logistics premises. These businesses are more footloose in their location choices and depend on proximity to major transport infrastructure, and in some cases strategic infrastructure like the Port of Newcastle. These precincts generally have larger lot sizes and premises.

**Subregional activities** are those that do not depend on a local population catchment but need to have access to clients in metropolitan subregions, such as concrete batching plants and transport and council depots. They occupy larger sites than those found in light industrial precincts and generally have low employment densities, but still form an important part of the local economy and supply chain.
Remnant industrial sites are large sites housing substantial buildings that serve or have served a strategic industrial function in the past such as large-scale manufacturing. The location and attributes of these buildings and sites may not be appropriate for modern industrial uses.

The Port of Newcastle also occupies a large amount of land, as noted above. While much of the land is zoned SP1 but not used by the port or currently developed, the State Environmental Planning Policy (Three Ports) 2013 sets a clear policy direction around the strategic importance of this land for future uses associated with the port.

Some industrial precincts, like Mayfield West, also contain office buildings, similar to what would typically be regarded as a business park function.

The industrial precincts in the Newcastle LGA are classified according to which predominant functions they have, as well as whether they contain remnant sites, in Table 7. These
functions should be considered when planning for the future use of industrial precincts, which will be discussed in more detail in Section 8.3. Some precincts contain multiple different built forms and roles, and different planning outcomes may be different in each case.

**TABLE 7: THE CURRENT FUNCTIONS OF INDUSTRIAL PRECINCTS**

<table>
<thead>
<tr>
<th>Precinct</th>
<th>Current predominant functions</th>
<th>Contains remnant sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adamstown</td>
<td>Light industrial</td>
<td></td>
</tr>
<tr>
<td>Beresfield</td>
<td>Strategic industrial</td>
<td></td>
</tr>
<tr>
<td>Broadmeadow</td>
<td>Light industrial</td>
<td>Yes</td>
</tr>
<tr>
<td>Carrington</td>
<td>Light industrial &amp; Port activities</td>
<td>Yes</td>
</tr>
<tr>
<td>Hexham</td>
<td>Strategic industrial &amp; Subregional activities</td>
<td></td>
</tr>
<tr>
<td>Islington-Hamilton North</td>
<td>Light industrial</td>
<td>Yes</td>
</tr>
<tr>
<td>Jesmond-Wallsend</td>
<td>Strategic industrial</td>
<td></td>
</tr>
<tr>
<td>Maryville-Tighes Hill</td>
<td>Light industrial &amp; Subregional activities</td>
<td>Yes</td>
</tr>
<tr>
<td>Mayfield</td>
<td>Remnant site</td>
<td>Yes</td>
</tr>
<tr>
<td>Mayfield East</td>
<td>Light industrial</td>
<td>Yes</td>
</tr>
<tr>
<td>Mayfield West</td>
<td>Strategic industrial &amp; Office</td>
<td></td>
</tr>
<tr>
<td>Merewether</td>
<td>Light industrial</td>
<td></td>
</tr>
<tr>
<td>Port of Newcastle</td>
<td>Port activities &amp; Strategic industrial</td>
<td></td>
</tr>
<tr>
<td>Sandgate</td>
<td>Light industrial</td>
<td></td>
</tr>
<tr>
<td>Warabrook</td>
<td>Light industrial &amp; Office</td>
<td></td>
</tr>
<tr>
<td>Wickham</td>
<td>Light industrial</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Light industrial case study – Adamstown employment precinct**

The Adamstown industrial precinct (shown on the right) is around 600m east of the Kotara Shopping Centre, and is surrounded on all sides by dwellings. It has relatively poor access to the arterial road network through residential streets and Park Avenue, and then onto Northcott Drive.

This Precinct is a typical light industrial precinct housing uses with low amenity impacts on surrounding dwellings. Land uses in the precinct include storage premises, wholesale, small warehousing and repair premises. The industrial composition of this precinct is shown in Figure 8, which shows employment in a broad range of industries beyond those typically regarded as industrial. These include rental services, professional services, health care and social assistance and arts and recreation.
There is likely to be some land use conflict around this precinct due to it being adjacent to dwellings, despite its light industrial nature. However, it serves an important economic role and its businesses service the local population, as well as other nearby businesses.

FIGURE 8: EMPLOYMENT COMPOSITION OF THE ADAMSTOWN EMPLOYMENT PRECINCT

Land values
Recorded sale prices for each industrial precinct and zone in the Newcastle LGA are shown in Table 8. This provides an indication of current land values in each zone and precinct, which in turn provides an illustration of the demand for space and a broad measure of each precinct’s performance.

The highest land prices are found in the B5 zone, although this represents a limited number of sales. This suggests that these precincts are in demand under the current planning framework, although land values in Broadmeadow may be increased by speculation based on its designation as a catalyst precinct.

High sales volumes show a high level of demand for sites in the Mayfield West precinct, which is a land-release employment precinct with a large amount of land remaining to be developed and contains the only IN1. Sites in this precinct are relatively large, which is likely to depress the land price per sqm somewhat. However, prices are around double those in Beresfield, the other large land-release industrial precinct in the LGA. This suggests that Mayfield West is more attractive for development.

Sale prices vary between different IN2 industrial precincts. Those closer to the Newcastle City Centre and to the Port of Newcastle generally have higher land values, with Maryville-Tighes Hill having the highest sale prices (note that residential sales have been excluded from this analysis). Jesmond-Wallsend and Beresfield have relatively low sale prices. Adamstown also has a relatively low price, but it is not possible to draw any conclusions from this figure as it represents only one sale.

The only recorded sales in the IN3 zone were in Hexham. This precinct has very low sales values, which are likely to be limited by environmental constraints. Those sites which are developed in this precinct generally have low employment densities, with several depots and similar uses.
TABLE 8: THE AVERAGE SALE PRICE ($/SQM) AND NUMBER OF SALES (IN BRACKETS) OF INDUSTRIAL LAND BETWEEN 2016-2018

<table>
<thead>
<tr>
<th>Precinct</th>
<th>B5</th>
<th>IN1</th>
<th>IN2</th>
<th>IN3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adamstown</td>
<td></td>
<td>798 (1)</td>
<td>798 (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beresfield</td>
<td></td>
<td></td>
<td>506 (70)</td>
<td>506 (70)</td>
<td></td>
</tr>
<tr>
<td>Broadmeadow</td>
<td>1,839 (6)</td>
<td></td>
<td></td>
<td>1,839 (6)</td>
<td></td>
</tr>
<tr>
<td>Carrington</td>
<td></td>
<td>874 (4)</td>
<td></td>
<td>874 (4)</td>
<td></td>
</tr>
<tr>
<td>Hexham</td>
<td></td>
<td></td>
<td></td>
<td>254 (6)</td>
<td>254 (6)</td>
</tr>
<tr>
<td>Islington-Hamilton</td>
<td>1,395 (6)</td>
<td></td>
<td>1,222 (19)</td>
<td>1,264 (25)</td>
<td></td>
</tr>
<tr>
<td>Jesmond-Wallsend</td>
<td></td>
<td></td>
<td>612 (9)</td>
<td>612 (9)</td>
<td></td>
</tr>
<tr>
<td>Maryville-Tighes Hill</td>
<td></td>
<td></td>
<td>1,950 (33)</td>
<td>1,950 (33)</td>
<td></td>
</tr>
<tr>
<td>Mayfield</td>
<td></td>
<td></td>
<td>1,080 (1)</td>
<td>1,080 (1)</td>
<td></td>
</tr>
<tr>
<td>Mayfield East</td>
<td></td>
<td></td>
<td>806 (3)</td>
<td>806 (3)</td>
<td></td>
</tr>
<tr>
<td>Mayfield West</td>
<td></td>
<td></td>
<td>1,015 (86)</td>
<td>1,007 (87)</td>
<td></td>
</tr>
<tr>
<td>Merewether</td>
<td>2,674 (1)</td>
<td></td>
<td></td>
<td>2,674 (1)</td>
<td></td>
</tr>
<tr>
<td>Sandgate</td>
<td></td>
<td></td>
<td>882 (39)</td>
<td>882 (39)</td>
<td></td>
</tr>
<tr>
<td>Warabrook</td>
<td></td>
<td></td>
<td>909 (9)</td>
<td>909 (9)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,698 (13)</td>
<td>1,015 (86)</td>
<td>948 (189)</td>
<td>254 (6)</td>
<td>987 (294)</td>
</tr>
</tbody>
</table>

Source: SGS Economics and Planning, calculated from Property NSW 2019, Bulk property sales information

Sales data for industrial land across the LGA since 2001 are shown in Figure 9. Prices increased between 2014-2018 after declining from a peak in 2007. Sales volumes have fluctuated somewhat but reached a peak in 2017. In combination, these indicators show relatively high levels of recent demand and interest in industrial land in the Newcastle LGA.

FIGURE 9: SALES PRICES FOR INDUSTRIAL LAND IN THE NEWCASTLE LGA, 2001-2018

Source: SGS Economics and Planning, calculated from Property NSW 2019, Bulk property sales information
3.3 Planning regions

SGS has divided the Newcastle LGA in planning regions which broadly show sub-catchments within the LGA for services and retail provision. They also provide a useful breakdown to discuss commercial supply and demand at a subregional scale. This allows modelling results to be aggregated to a larger spatial area which is more meaningful than an individual small area. Land use supply and demand results in this report will be presented for these regions.

The regions are shown in Figure 10. They have been organised around travel zone boundaries, which allows them to be used for population projections and ensures they align with ABS statistical area boundaries. The boundaries in Figure 9 are not completely aligned with the boundaries of the Newcastle LGA because travel boundaries do not conform with the LGA boundary. Nonetheless, the LGA boundary has been respected in SGS’s modelling.

FIGURE 10: PLANNING REGIONS IN THE NEWCASTLE LGA

Source: SGS Economics and Planning 2019
4. ECONOMIC TRENDS AND DRIVERS

This section considers some trends and drivers that may impact future land use and economic activity centres in Newcastle LGA. It considers retail trends, employment trends and industrial trends.

4.1 Retailing

**Rise of Online Retailing**

Online retail currently makes up a small proportion of retail turnover in Australia. Despite these low levels, growth has been strong. Since 2013, it is estimated online retail turnover has grown 142 percent². NAB estimated that in the 12 months leading up to January 2019, Australians spent approximately $28.88 billion on online retail which was the equivalent of about nine percent of retail in the traditional ‘brick and mortar’ retail sector³.

Reasons individuals choose to shop online include the reduced amount of time it takes to undertake purchases; it is easier to find the cheapest price; and online shopping provides the flexibility to shop at convenient times⁴.

Department and variety stores recorded the highest online retail sales at approximately 29.6 percent year to year sales average, followed by games and toys (20.1 percent) and takeaway food (12.7 percent), as shown in Figure 11.

**FIGURE 11: ONLINE RETAIL SALES BY INDUSTRY (YOY S.A.)**

Source: NAB, Online Retail Sales Index, January 2019

The introduction of Amazon in Australia is expected to contribute to the growth of online shopping and further impact bricks and mortar retail. While the Department of Industry, Innovation and Science expects Australia’s small and dispersed population will mean the impact of Amazon will take time to gain a significant market share, it is estimated it could

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reach two percent of retail sales within five years of entering Australia. This compares to five percent current market share in the US\(^5\).

It has been noted in both domestic and international contexts that growth in online retailing has led to increased demand for industrial and logistics property. Colliers International expects the demand for industrial space in Australia due to growth in eCommerce to grow over the short, medium and long term, with high levels of emphasis on supply chain efficiency and effectiveness\(^6\). To compete with Amazon, it is expected Australian online retailers will need to make investments in automation to offer comparable services given Amazon’s sophisticated and efficient automation systems that improve warehousing, logistics and distribution\(^7\).

In the face of competition from online retailing, landlords of traditional ‘bricks and mortar’ retail centres are providing increased floorspace for food, beverage, grocery and non-retail uses to align with strong customer trends towards dining out. Shopping centres are also exploring mixed-use options or change-of-use options where more value is extracted from the site by adding residential, commercial or hotels to surplus land or air space above centres. Entertainment, events and ‘experiences’ are also becoming more important to develop the social aspect of retail, as millennials seeks a different shopping experience than previous generations\(^8\).

For large retailers, it is predicted that Australia’s trend of department store floorspace expansion and the existing footprint of these stores will decrease as market share is lost to online retailers. For small retailers, it is expected that leveraging local customer relationships and providing specialised and boutique in-store services and advice will ensure continued relevance and competitiveness\(^9\).

The impact of international retailing competition on employment is unclear. It is expected Amazon’s arrival will put pressure on job growth in traditional retail, but this could be offset by employment growth in other areas, such as logistics and warehousing. In the US, it was estimated 51 thousand jobs were lost in the general retail sector between 2007 and 2016 but this was outweighed by growth in 355 thousand warehousing jobs, noting Amazon is also headquartered in the US which may add weight to the increase in job numbers in this industry\(^10\).

**Changing Profile of Supermarkets**

High street retail strips and enclosed shopping centres are often anchored by a supermarket that acts as the major tenant with smaller stores clustered around it. Anchor stores play a key role in the overall health of a shopping centre or district.

Traditionally, Australia’s groceries market has been dominated by Woolworths and Coles brands. Even today, together they account for about 70 percent of the market\(^11\). However, the past decade has seen the rise of two main competitors – IGA and Aldi. Combined, these two chains account for approximately 21 percent of market share.

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\(^7\) Department of Industry, Innovation and Science, 2017, Inquiry into impacts on local businesses in Australia from global internet-based competition, industry.gov.au, p. 11


\(^10\) Department of Industry, Innovation and Science, 2017, Inquiry into impacts on local businesses in Australia from global internet-based competition, industry.gov.au, p. 18

Aldi tripled its market share (3.1 percent to 11.6 percent) in the ten years to 2015. The promotions focus on low-price items of ‘home brands’ attracted shoppers who may not have traditionally shopped at discount supermarkets. In NSW and Victoria, about 47 percent of grocery buyers in each state now shop at Aldi in any given four-week period. Woolworths and Coles in contrast have seen their market share decrease. Where supermarkets tend to service their surrounding population catchment, anecdotally Aldi appears to challenge this trend, with people often deliberately shopping at Aldi in search of a bargain even though it is not their closest supermarket.

FIGURE 12: MARKET SHARE OF LEADING SUPERMARKETS, 2006-2015

In addition to the shifts in market share of supermarket operators, there are also shifts in Australian consumer lifestyles and food retailing preferences. Supermarket operators, regardless of who they are, need to adapt to the changing market. The demand for organic produce is a small but growing sub-sector of food retailing. It is estimated that the total value of the organic market in Australia is $2.4 billion, an 8.8 percent increase since 2012. The growing awareness of how food is produced and the impact of chemicals on the environment has driven growth in organic produce. People are choosing vegetarian, vegan and gluten-free diets and are driving the specialised retail offer of organic, fresh and minimally processed foods.

Supermarkets are noted as being the dominant purchasing pathway for organic grocery products, with Woolworth and Coles having the dominant share at over 65 percent but they are under pressure. Aldi has grown its share of organic produce since 2018 alongside other non-supermarkets and independents like Costco increasing their share since 2016.

Another new trend is the development of smaller format supermarkets that are tailored to the local market and offer a larger range of convenient, ready-to-go foods. Key reasons for the development of smaller supermarket stores is the lack of available land in urbanised areas as the population increases in density, higher rents, the arrival of global players in the Australia markets forcing store closures and rising inventory costs and wages requiring downsizing. Supermarket operators, however, see the smaller format as an opportunity to offer tailored products of convenience rather than focusing on a wide selection of goods, at a

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range of prices. They see customer habits have changed where Australians want faster, takeaway foods of high quality which fits with the smaller supermarket format. For the supermarket giants, Coles and Woolworths, the new format is a way to compete with the independent retailers, such as Harris Farm and IGA.

Convenience stores are struggling with the strong competition posed by the new supermarket formats. Operators are having to adjust product ranges and prices to provide value for money. Industry revenue is expected to fall -0.8 percent annually from 2019 to 2024.

It is worth noting that while supermarkets capture a significant proportion of food retailing, the role of non-supermarket specialty food stores, such as bakeries, grocers, delicatessens and farmers markets in meeting food retailing needs is not insignificant. The bi-weekly market at Broadmeadow is quite popular.

The Continued Rise of Regional Shopping Centres

Historically, retailing was viewed as a city centre or town centre activity, particularly for higher order retailing. However, regional suburban centres have emerged as the preferred destination for many consumers and preferred location for retailers, particularly around Newcastle and in the Hunter Region.

In recent years, some regional suburban centres, such as Bondi Junction, Chatswood and the Macquarie Centre, have recently attracted large international retailers ahead of store developments in the city centre. The trend of retail decentralisation is driven by a number of factors including:

- Growth of an affluent and mobile population in suburban areas
- Development of strong corporate chains with fewer ties to a locality and more willingness and need to move shops to areas of demand and opportunity
- Changes in the methods of selling which have seen a demand for larger stores and associated parking.

The prospects for this to occur around Newcastle are much higher in large shopping centres like Kotara Westfield than in the Newcastle City Centre. The shift to regional suburban centres occurred in the 1990s in Newcastle. Recent expansions to both Charlestown Square and Kotara reflected this trend. The repurposing of the shopping centres to offer a range of professional and personal services adds a lot more flexibility into their offering.

It has been noted that the popularity of regional shopping centres is being challenged with the rise of online retailing, emerging international brands, pop-up stores, general weak retail sales growth and smaller neighbourhood centres offering a range of conveniences. Repurposing these centres to offer a wider range of uses and services is often cited as a requirement to regain market share. This includes medical centres, gyms and greater inclusion of entertainment and events.

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Fine Grain Spaces

‘Fine grain’ is a term used to describe small-scale spaces that provide diverse and specialised activities in a place\(^{18}\). This generally refers to the traditional high-street style premises that have been impacted by the rise of regional shopping centres. Fine grain spaces can encourage greater community interaction, cultural and creative expression and promote more walkability and sociability in activities and through the fabric of the built environment\(^{19}\).

A fine grain high street shopping experience offers a ‘more’ unique retail experience to shopping centres with small local businesses and boutiques. Examples are often seen in villages in the Blue Mountains, such as Leura or Blackheath, or in the Southern Highlands, for example Bowral, both key visitor destinations. Parts of the Newcastle City Centre offer a fine-grained retail environment, while large centres like Waratah and Kotara do not.

As shopfronts are often owned and rented individually along a high street, there is limited control on where certain shops and businesses set up. This contrasts with shopping centres, where centre managers can direct the location of stores to create clusters, such as fashion floors and fresh food sections. The inability to control the clustering of businesses may limit the ability for collaboration, which in turn may impact the shopping experience as a ‘one-trip’ experience. However, this lack of synergy may form part of the appeal of high street retailing with an eclectic mix of stores in proximity.

High street retailing has faced significant challenges in recent years. This is attributed to the rise of regional shopping centres, changes in consumer habits and online retailing. Fine grain retailing along high streets has, however, been adapting to combat these changes, changing from a convenience shopping role to a destination and an experience, as evident in the rise of cafés and cultural uses, such as art galleries and performance spaces that are not easily replicated in shopping centres and not available online.

Principles to successfully promote fine grain activities include having a variety of scales with small and large activities; proximity of shared activities; permeability and engagement with the street; and having spaces that are multifunctional and encourage shared use anytime of the day\(^{20}\).

4.2 Employment

Visitor Economy

Tourism plays an important role in the Australian economy. The tourism economy accounts for 4.7 percent of Australia’s GDP and provides significant benefits and advantages to business. Of Newcastle’s gross regional product of $17.617 billion it is estimated that $505.384 million is generated from tourism\(^{21}\). The Hunter Region received 3.9 million domestic overnight visitors and 207,700 international overnight visitors in 2017.\(^{22}\) There are 1,963 tourism businesses in Newcastle.

In 2017, 8.8 million international tourists visited Australia. Of these 8.8 million people the highest proportion of visitors came from China, this was followed by New Zealand, the United States, the United Kingdom, Japan and Singapore\(^{23}\). The Hunter Region on the other hand, received the highest proportion of visitors from the United Kingdom followed by the United

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\(^{22}\) Destination NSW. 2018, Travel to the Hunter

States and New Zealand. In Australia, the most popular place for holiday makers was Sydney. For the Newcastle LGA, international overnight visitors totalled 94,000 in 2017, their average stay was 20 nights. The main reason for overnight stay was for holiday.

According to Tourism Research Australia, domestic overnight tourism for holiday, visiting friends and relatives and business have generally increased in recent years, as shown in Figure 13. For the Newcastle LGA, domestic overnight visitors totalled 1,169,000 in 2017. Their average stay was two nights. The main reason for overnight stay was for visiting friends and relatives.

**FIGURE 13: DOMESTIC OVERNIGHT TOURISM TRENDS**

Source: Tourism Research Australia, 2019

**Arts and Culture Based Tourism**

A study by Deloitte Access Economics identified the economic visitation value for the arts and cultural scene in Sydney. The study found the highest value was attributed to cinema, ($611m) followed by live music concerts ($284m), live theatre or dance show ($188m), and art gallery or museum ($112).

**FIGURE 14: ECONOMIC VISITATION VALUE FOR ARTS AND CULTURAL SCENE IN SYDNEY**

Source: Deloitte, 2016

**Nature Based Tourism**

Nature based tourism is leisure travel undertaken largely or solely for the purpose of enjoying natural attractions and engaging in a variety of nature-based activities. Nature based tourism is currently experiencing growth.
In 2015, there was 13 percent growth in international visitors who went to State and National Parks. In 2016, 68 percent of all international visitors engaged in nature-based activity. Nature based tourism was also found to be popular among overnight domestic tourists, research suggests that 27 percent of overnight tourists engaged in nature-based tourism\(^\text{24}\).

**Food & Wine Tourism**

Tourism Australia reports that, of people who have never visited Australia, only 26 percent associate the destination with good food and wine. Those who have visited Australia, rank the country as second across 15 major markets for food and wine experiences\(^\text{25}\). This suggests food and wine tourism is of high quality in Australia but there is a need for this message to become more widespread.

Some of the most attractive food related experiences amongst high value travellers include:

- Heritage: gourmet experiences which speak of a region’s heritage and highlight local produce.
- Wellness: desire for balanced eating using the freshest and most nutritious produce.
- Occasions: experiences where the food takes centre stage at any price point from street food to find dining.
- Stories: the provenance, production, craftsmanship of products and personalised culinary experiences\(^\text{26}\).

In 2018, the NSW Government released its *NSW Food and Wine Tourism Strategy and Action Plan 2018-2022* that recognises the trend of eating and drinking local produce in a unique location or venue is an integral part of the travel experience and is a notable way to connect travellers with local customs and culture.

It has been estimated that in the year ending December 2017, there were approximately 1.3 million domestic wine travellers spending $1 billion. In relation to food travellers, there was 3.5 million domestic overnight visitors spending $3.1 billion and 1.4 million international visitors, spending $5.4 billion\(^\text{27}\).

Newcastle is in close proximity to New South Wales’ most visited wine region – the Hunter Valley. Newcastle Airport is approximately 45 minutes drive from Hunter Valley Wine Country. One option to get to Hunter Valley is to fly to Newcastle and then either drive or get on a shuttle bus to Hunter Valley.

**Accommodation**

The Australian accommodation monitor (2017-2018) found that Australian accommodation created $14.7 billion worth of revenue. Australian capitals cities had the highest revenue per room and the highest occupancy rate at 79.8 percent. Luxury and upper scale rooms were found to have a higher occupancy rate of 80.9 percent which was compared to a 75.5 percent of upscale and upper mid classes. The occupancy rate of midscale and economy rooms were found to have a 68.9 percent occupancy rate\(^\text{28}\).

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Future Jobs

The top industries for jobs growth over the next five years (to 2023) are Health Care and Social Assistance, Construction, Education and Training, Professional, and Scientific and Technical Services as projected by the Australian Government.

An ageing population, the NDIS (Australia’s National Disability Insurance Scheme), and growing demand for childcare and homecare-based services will drive jobs growth in the Health Care and Social Assistance sector across Australia. Another demographic trend that would influence the trend of future jobs is the growing number of school-aged children. There is strong demand for adult and community education.

Demand for freight and logistics, public transport and major road will continue to drive growth in the construction sector. The growing population would also provide jobs for construction workers in the residential development industry.

As the society embraces new technologies and the demand for innovation increase, the demand for workers with digital skills and knowledge in computer systems is expected to increase. This is a focus of the Newcastle Smart City Strategy, which identifies regional strategic growth areas of advanced manufacturing, creative industries, defence/aerospace, food/agribusiness, medical technology & pharmaceuticals, mining equipment & support, and energy resources.

Jobs in the Arts and Recreation Services industry are expected to grow over the next five years off the back of strong involvement in sport at all levels and ongoing demand for personal fitness services. The creative industries have been identified as one of the growth industries for the Hunter Region.

Continued growth in domestic and international visitors to Newcastle and the Hunter Region means that Accommodation and Food Services industry are likely to employ more people in the future.

4.3 Industrial Lands

Advanced Manufacturing

Globally, manufacturing and the supply chains that support it are changing. While manufacturing covers a large spectrum of industries, services and products, increasingly complex and inter-connected changes are transforming these industries into what is collectively referred to as ‘advanced manufacturing’.

The CSIRO define advanced manufacturing as ‘the set of technology-based offerings, systems and processes that will be used to transition the current manufacturing sector into one that is centred on adding value across entire supply chains.’ In advanced manufacturing, industrial and knowledge sectors are more closely integrated and have close links to research and development.

Examples of advanced manufacturing include the use of sensors and data analytics not only during production but across the whole value chain; replacing workers for hazardous tasks with assistive smart robotics and automation; and proactive integration of advanced materials in the early design phase like biodegradability, energy efficiency and self-repairing.

Driving this change are five mega trends:

- Made to Measure – advances in technology and greater consumer expectations are causing a shift from mass production of goods to bespoke solutions.
- Service Expansion – manufacturers are expanding their role in the value chain from making ‘widgets’ to developing tightly integrated service-product bundles.

29 CSIRO, 2016, Advanced manufacturing: roadmap for unlocking future growth opportunities for Australia, p. 11
Smart and Connected – advances in data capture and analytics are optimising operations across the manufacturing value chain and the factory floor.

- Sustainable Operations – resource scarcity and increasingly valued environmental and social credentials are encouraging manufacturers to look for more efficient and sustainable processes and operating models.

- Supply Chain Transformations – specialisation is promoting collaboration in some markets while technological advancements are enabling the vertical integration of others.

Success in fostering an advanced manufacturing economy is contingent upon a number of wider socio-economic and governance factors. The CSIRO identify several comparative advantages and disadvantages presented by the Australian economy in attracting or developing an advanced manufacturing sector, as shown in Table 9.

### TABLE 9: AUSTRALIA’S COMPETITIVE LANDSCAPE

<table>
<thead>
<tr>
<th>Comparative Advantages</th>
<th>Comparative Disadvantages</th>
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</thead>
<tbody>
<tr>
<td>Education and research skills</td>
<td>High labour costs</td>
</tr>
<tr>
<td>Quality and standards</td>
<td>Geographical remoteness</td>
</tr>
<tr>
<td>Small and medium-sized enterprises</td>
<td>Small and dispersed domestic market</td>
</tr>
<tr>
<td>Access to Asia</td>
<td>Risk averse culture</td>
</tr>
<tr>
<td>Early adopters</td>
<td>Segregated national agenda</td>
</tr>
<tr>
<td>Political and economic stability</td>
<td>Commercialisation</td>
</tr>
<tr>
<td>Natural resources</td>
<td>Staff training and development</td>
</tr>
<tr>
<td>Intellectual property laws</td>
<td>Digital infrastructure</td>
</tr>
<tr>
<td></td>
<td>Public perception</td>
</tr>
<tr>
<td></td>
<td>Quality and quantity of leaders</td>
</tr>
</tbody>
</table>

Source: CSIRO, Advanced manufacturing: roadmap for unlocking future growth opportunities for Australia, p. 16-20

With respect to these elements, the presence of educational facilities in Newcastle, available industrial premises to cater to small and medium enterprises, and access to Asia through the Port of Newcastle are aligned with the competitive advantages. None of the disadvantages apply to Newcastle more than to other places, although the smaller labour market of educated innovators than Greater Sydney may be a barrier to developing advanced manufacturing capability.

Advance Manufacturing has been identified by Regional Development Australia as one of the growth industries for the Hunter Region. The Hunter Research Foundation identifies the barriers to the development of the manufacturing industries as lone operator, local narrow market, lack of information and short-term focus. The enablers are collaboration, global supply chain, strategic planning and innovations. These enablers could apply to advanced manufacturing as well.

### Supply Chain Optimisation

Supply chain optimisation can save operating and transportation costs and has become a critical competitive advantage for many industrial businesses. Supply chain optimisation can
occur through consolidation of nodes in a supply chain. Progress in digital technologies will allow companies to design, prototype and manufacture products in close proximity to the end user and subsequently save transportation costs\textsuperscript{32}.

Retailers and logistics companies are seeking new technological solutions to improve delivery efficacy and overcome geographical challenges, using solutions such as drones or crowdsourcing local delivery sources\textsuperscript{33}. However, in the interim, the value of industrial, logistics land and dispatch centres close to urban areas remains apparent and highly valuable for speed of delivery – particularly given land use is highly contested and land prices are high.

**Newcastle’s Strong Industrial Leasing Market**

The industrial rental market in Newcastle has grown since 2007, as shown in Figure 6. The disparity in workshop versus warehouse rental rates has closed due to the increasing diversification of the industrial market. Vacancy rates for industrial buildings in the lower Hunter Region have continued to fall since 2018, from five per cent in 2018 to 3 per cent in 2019. Newcastle Port has relatedly low vacancy rates, with some industrial suburbs recording vacancy rates of one per cent or less in 2019.\textsuperscript{34}

There has been a shortage of serviced industrial lots ready for development within major industrial estates in the Newcastle industrial market, which led to prospective companies to delay their relocation plans. This has resulted in rising rents, increased capital values and a rising demand for off-the-plan industrial land sales. Collier International estimated that the shortage of readily available industrial land will ease as new industrial estates is completed, with strong demand for premium grade industrial investment from the private sector. Along with the large amount of serviced industrial land available in the Newcastle LGA shown in Table 6, this suggests that a shortage of development sites is due to the operation of the development market rather than an underlying shortage of available land.

**FIGURE 15: NEWCASTLE INDUSTRIAL RENTS**

Source: Colliers International 2019, Industrial Research and Forecast Report First Half 2019

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\textsuperscript{32} CSIRO, 2016, Advanced manufacturing: roadmap for unlocking future growth opportunities for Australia, p. 6


\textsuperscript{34} Colliers International, 2019, Industrial Research and Forecast Report First Half 2019
4.4 Implications

- Growth in online retailing is likely to continue with the emergence of new forms of retailing such as ‘click and collect,’ though the impact of this on physical stores is likely to affect some sectors more than others. The click and collect model and the increased use of multi-channel retailing will mean that retailers will still need physical stores in key local centres, but stores selling goods that are standardised and can be easily compared and bought online such as department stores and household goods stores may suffer in the face of competition from online retailing.
- A new cruise terminal at Port Newcastle could increase international tourism at Newcastle. There is currently no funding from the NSW Government for this project.
- The Freight and Logistics industry is well positioned to benefit from new industrial precincts at Newcastle and the new technologies and innovative methods that could be used to transform the supply chain.
- Advanced manufacturing is a growing sector and is supported by a variety of organisations at Newcastle, including the State Government, City of Newcastle, University of Newcastle and industrial groups.
5. ECONOMIC AND DEMOGRAPHIC PROFILE

5.1 Employment

Industry composition

The employment composition of the Newcastle LGA is shown in Figure 16, based on reported places of work and industries from the 2016 census. These industries are broken into four broad industry categories as defined by the Greater Sydney Commission: industrial, population serving, knowledge intensive and health and education. These categories provide a high-level indication of the predominant category of an industry but will not always correspond with the nature of individual businesses and jobs.

The following notable characteristics emerge from this industry profile:

- The largest industries in the Newcastle LGA are education and health care and social assistance, reflecting the LGA’s status as a regional service destination.
- While Newcastle has traditionally had a reputation as an industrial city, traditionally industrial ANZSIC categories make up a relatively small proportion of total employment.
- Knowledge intensive industries generally make up a small proportion of total employment, with particularly small media and telecommunications and rental and real estate industries.

Source: ABS Census 2016
Industrial ANZSIC categories

Employment in this report is categorised according to the Australian and New Zealand Standard Industrial Classification (ANZIC), which is used by the Australian Bureau of Statistics and other government agencies in their statistics. It groups businesses into 19 categories, with more detailed breakdowns available within these categories.

Industrial employment is often considered to fall within the traditionally industrial ANZSIC categories: agriculture and primary industries, mining, manufacturing, utilities and wholesale trade. However, these provide a relatively poor reflection of modern land uses in industrial zones and premises. In part this reflects how the Australian economy has evolved, with emerging land use types like factory door retailers, craft and artisanal production and creative industries appearing in industrial spaces.

More broadly, uses from a wide range of ANZSIC categories are found in industrial areas. While this section discusses industry composition through the ANZSIC categories as they are the most straightforward way to categorise employment, they should be viewed as only one indication of the way the economy is structured.

Change in employment

The approximate change in employment in each of these industries in the Newcastle LGA between 2006-2016 is shown in Figure 17. Changes in the ABS methodology for reporting place of work prevent employment statistics from 2016 and earlier censuses from being directly compared. SGS has corrected for this change, but Figure 17 should nonetheless be interpreted as illustrating the relative performance of different industries in the LGA rather than providing an exact and accurate account of changes in employment.

Health care and education, the two largest industries in the LGA in terms of employment, grew strongly between both 2006-2011 and 2011-2016 in both absolute and percentage terms. Growth in these industries was outpaced in percentage terms only by construction and accommodation and food services, two population serving industries.

Knowledge intensive employment generally did not grow significantly between 2006-2016 in absolute terms. Professional services grew rapidly between 2006-2011 but contracted between 2011-2016. Financial services experienced modest growth, while media and telecommunications reduced and rental and real estate services employment changed little.


Spatial location of employment

Along with the overall industry composition of the Newcastle LGA economy, the spatial locations of employment in various industries are important to understand in order to plan for future land use requirements at a local level. This distribution is illustrated in Figure 18.

By far the largest concentration of employment in the Newcastle LGA is in the Newcastle City Centre. Most of these jobs are in knowledge intensive industries, although there are also jobs in each of the other sectors.

Figure 18 shows that employment is distributed across the Newcastle LGA, particularly in the eastern half of the LGA in which there is a broader mix of land uses. There are jobs in a range of industry sectors spread across Newcastle’s centres and industrial precincts. Specialisations of certain industrial precincts are visible, with predominately industrial employment around Mayfield North, the Port of Newcastle and Beresfield and a greater mix in some other precincts like Mayfield West, Warabrook and Maryville–Tighes Hill.

Concentrations of health and education employment are visible at the University of Newcastle in Callaghan, the John Hunter Hospital and the Mater Hospital. These are all in out-of-centre locations, creating suburban clusters of employment. An additional large suburban cluster is found at Kotara, with population serving employment corresponding to the retail centre.
The approximate change in employment between 2011-2016 in each part of the Newcastle LGA by industry is shown in Figure 19.

The decline in industrial employment noted in LGA-wide statistics appears in multiple parts of the LGA. The decline in Mayfield is particularly substantial, and may have been caused by the closure or decrease in scale of one or more very large manufacturing businesses. The ANZSIC four digit industries with the greatest decreases and increases in employment are shown in Table 10.

However, the presence of decreases in industrial employment in several areas indicates that this trend is not confined to several notable businesses. Rather, employment in traditional industrial sectors is broadly contracting across the LGA.
At the same time, there are large increases in health and education sectors and generally smaller increases in population serving and knowledge intensive sectors. This is consistent with an economic transition in the Newcastle LGA, as areas where employment has traditionally been dominated by industrial sectors is diversified to include a broader range of economic activities. The decline in industrial jobs does not indicate that industrial land is not needed, but rather suggests that its function is changing over time.

FIGURE 19: SPATIAL CHANGE IN EMPLOYMENT ACROSS THE NEWCASTLE BETWEEN 2011-2016

### TABLE 10: THE FIVE FOUR DIGIT ANZSIC INDUSTRIES WITH THE GREATEST INCREASES AND DECREASES OF EMPLOYMENT IN THE MAYFIELD AREA, 2011-2016

<table>
<thead>
<tr>
<th>Greatest increases in employment</th>
<th>Greatest decreases in employment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Greatest increases in employment</strong></td>
<td><strong>Greatest decreases in employment</strong></td>
</tr>
<tr>
<td><strong>Industry</strong></td>
<td><strong>Change in employment 2011-2016</strong></td>
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<tr>
<td>Other social assistance services</td>
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<tr>
<td>State government administration</td>
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</tr>
<tr>
<td>Takeaway food services</td>
<td>78</td>
</tr>
<tr>
<td>Other water transport support services</td>
<td>58</td>
</tr>
<tr>
<td>Sports and physical recreation administrative services</td>
<td>58</td>
</tr>
</tbody>
</table>

Source: ABS Census 2016

Note that multiple industries associated with steel have been combined due to anomalies in reported employment.

### Knowledge Intensive Jobs

The distribution of knowledge intensive jobs in different parts of the Newcastle LGA is shown in Figure 20. The Newcastle City Centre has by far the highest number of knowledge intensive jobs in the Newcastle LGA. Most of these are in the Central and Western parts of the City Centre between Brown Street and Stewart Avenue.

There are smaller, but still large, concentrations of knowledge intensive employment across the LGA in local centres and industrial precincts. For example, the eastern part of the Newcastle City Centre, Hamilton, Broadmeadow, Kotara and The Junction all contain substantial numbers of knowledge intensive jobs. The industrial precincts of Mayfield West and Warabrook also contain large numbers of knowledge intensive jobs. This highlights the competition for knowledge intensive jobs between what would otherwise be regarded as light industrial precincts and traditional centres.

Figure 20 also shows the proportion of jobs in each destination zone which are in a knowledge intensive industry. The highest proportions are in the Newcastle City Centre and Hamilton, followed mostly by local centres. The large number of knowledge intensive jobs in Warrabrook and Mayfield West precincts is reflected in a high proportion of jobs in knowledge intensive industries (between 25-37.5%).
Industry specialisation

Location quotient analysis is a measure of relative industry specialisation of a local economy compared with a larger area. In this case, this measures the Newcastle LGA industry employment profile against Greater Sydney (Figure 21), NSW outside Greater Sydney (Figure 22) and the Hunter Region (Figure 23) to determine the relative specialisation of each industry. The location quotient score directly compares the proportional size of employment in the industry in Newcastle to the benchmark area. For example, an LQ of 2 means that Newcastle is twice as specialised as Greater Sydney or the rest of NSW, or an LQ of 0.5 meaning that it is half as specialised. This is shown below in Figure 21 (compared to Greater Sydney) and Figure 22 (compared to the rest of NSW).
Of most importance are the two right hand quadrants. The top right quadrant shows industries that are both specialised and growing while the bottom shows specialised industries that are contracting.

The two largest industries in the Newcastle LGA are health care and social assistance and education, and these are both relatively specialised. Healthcare is one of the most specialised industries, corresponding to Newcastle’s regional service-based role, and is rapidly growing. The education and training industry is slightly specialised with respect to Greater Sydney and the Hunter Region, but not with respect to NSW outside Greater Sydney. As both industries are growing, they represent potential opportunities for continued economic growth, including in businesses in the healthcare supply chain and through research and innovation.

The traditional industrial industries of manufacturing and wholesale and wholesale trade shrank substantially between 2011-16 and are relatively unspecialised when compared to Greater Sydney. Compared to the rest of NSW and to the Hunter Region, these industries occupy around the same amount of the industry profile. The lack of specialisation in manufacturing in particular shows the decline in employment in Newcastle compared with its historic reputation as an area with a strong heavy industrial presence.

In contrast with manufacturing and wholesale trade, the transport, postal and warehousing sector is growing slightly in Newcastle, and is specialised in the LGA compared to NSW outside of Greater Sydney and to the Hunter Region. This specialisation is likely to be driven at least in part by the presence of the Port of Newcastle.

Knowledge intensive industries, including professional services, media and financial services, are often specialised in large cities and centres, and are relatively unspecialised in Newcastle compared to Greater Sydney, with lower employment growth rates than several other industries. However, a different picture emerges when Newcastle is compared to NSW outside Greater Sydney or to the Hunter Region, with professional services employment and financial services highly specialised, but public administration less specialised. This shows the relative strength of Newcastle as a destination for knowledge intensive jobs with high levels of value added compared to much of NSW, but the LGA’s lack of competitiveness when compared with Greater Sydney.
FIGURE 21: LOCATION QUOTIENT OF THE NEWCASTLE LGA COMPARED TO GREATER SYDNEY

FIGURE 22: LOCATION QUOTIENT OF NEWCASTLE LGA COMPARED TO NSW OUTSIDE GREATER SYDNEY

FIGURE 23: LOCATION QUOTIENT OF NEWCASTLE LGA COMPARED TO THE HUNTER REGION


Newcastle employment lands strategy
Local competitiveness

Shift-share analysis paints a picture of how well the region’s current industries are performing by systematically examining the regional, local, and industrial components of employment change. It provides a dynamic account of total regional employment growth that is attributable to growth of the national economy, a mix of faster or slower than average growing industries, and the competitive nature of the local industries. This analysis identifies those industries that benefit from local competitive advantages and those that suffer from local growth impediments.

A shift-share analysis comparing Newcastle against NSW determines the extent to which job growth can be attributed to unique local factors and how much is due to regional trends (see Figure 22).

The shift-share analysis compares the expected change of growth in an industry at the NSW level with industry change in Newcastle. This is referred to as a ‘Competitive Shift’ and explains how much of the change in each industry is due to some unique competitive advantage that the study area possesses, because the growth cannot be explained by broader trends in that industry or the economy as whole. It is the total employment growth in Newcastle minus the expected change in that industry using Greater Sydney’s benchmark rates.

Overall, the competitive shift analysis presents a mixed picture of the success of the Newcastle economy.

Some traditionally industrial sectors, namely manufacturing, utilities and wholesale trade, declined across NSW and had a further negative competitive shift in Newcastle. Transport and warehousing, which is also a traditional industrial sector, had a strong competitive shift for the Newcastle LGA, bucking the NSW-wide decline. This may be associated with the operation of the Port of Newcastle.
The knowledge intensive real estate and professional services industries had mediocre growth in the Newcastle LGA compared to NSW. The sectors grew in NSW between 2011-2016 but much of the growth is occurring in Greater Sydney, showing Newcastle’s lack of competitiveness with Greater Sydney in these sectors. By contrast, financial services (which is also a knowledge intensive industry) had a positive competitive shift in the Newcastle LGA, despite its relatively small size in the area.

Industries which are generally knowledge serving or associated with health and education, including education, health care, public administration, arts and recreation and retail, grew strongly and performed well in the Newcastle LGA compared to NSW as a whole.

Accommodation and food had the largest positive competitive shift in the Newcastle LGA, while construction also grew strongly and also had a strong positive competitive shift. Strong growth in accommodation and food will require additional floorspace in high-amenity centres like Newcastle City Centre and indicates potential opportunities to grow the local tourism industry.

5.2 Population

While not strictly an economic indicator, population is an important consideration in the development of an economic strategy as population growth is closely tied to the need for future population serving jobs such as retail, health and education.

Recent population growth rates in the Newcastle LGA and benchmark areas is shown in Figure 25. Population growth in Newcastle has been positive every year since 2001 and has generally been similar to or slightly above growth rates in NSW outside of Greater Sydney. Since 2011, population growth in Newcastle has been around 0.6%, significantly below the levels of growth in Greater Sydney, where growth rates increased from 1.2% in 2011 to 2.3% in 2017.

If levels of population growth recently seen in the Newcastle LGA continue in the future, this will cause modest but continued growth in employment in population serving industries. As population growth rates are higher in Greater Sydney, growth levels in these industries will likely fall below those in Greater Sydney.

FIGURE 25: POPULATION GROWTH RATES IN NEWCASTLE LGA AND COMPARISON AREAS

Source: SGS Economics and Planning, ABS 2019, 3218.0 – Regional Population Growth Australia
Educational attainment

The educational attainment of the Newcastle population is an indicator of how highly skilled the population is, which will determine the ability of local businesses to access a talented labour force. The change in educational attainment of the population over time provides a picture of how local demographics are changing. If the overall attainment of the population increases, this can create economic opportunities to grow high-value industries. It may also indicate that the availability of jobs suitable for a skilled population in increasing.

The overall level of educational attainment of people residing in the Newcastle LGA increased between 2011-2016, as shown in Table 11. The number of people with a postgraduate degree increased dramatically, while growth in the proportion of people with a university degree increased 5.2% from 14.3% to 19.5% between 2011-2016. This outpaced the increase in Greater Sydney, in which the proportion of people with a university degree increased 4.2% from 24.1% to 28.3%. Note that the census has a slight undercount of the total population, and so these statistics are approximate.

Some of the increase in the proportion of people with a university education may be due to the growth in the number of people attending university in Newcastle, which mirrored growth across major centres in Australia between 2011-2016. However, it also provides a positive picture for the future economic prospects of the Newcastle LGA, particularly if these levels of growth can be sustained in the future.

**TABLE 11: EDUCATIONAL ATTAINMENT OF THE NEWCASTLE LGA POPULATION IN 2011 AND 2016**

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>2011</th>
<th>2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Proportion</td>
<td>Number</td>
</tr>
<tr>
<td>Postgraduate Degree Level</td>
<td>4,495</td>
<td>2.64%</td>
<td>6,562</td>
</tr>
<tr>
<td>Bachelor’s degree Level</td>
<td>17,828</td>
<td>10.47%</td>
<td>21,223</td>
</tr>
<tr>
<td>Graduate Diploma/Certificate Level</td>
<td>1,934</td>
<td>1.14%</td>
<td>2,489</td>
</tr>
<tr>
<td>Advanced Diploma and Diploma Level</td>
<td>9,458</td>
<td>5.56%</td>
<td>11,265</td>
</tr>
<tr>
<td>Certificate Level</td>
<td>24,124</td>
<td>14.17%</td>
<td>22,367</td>
</tr>
<tr>
<td>Secondary Education – Years 10 and Above</td>
<td>95,232</td>
<td>55.95%</td>
<td>38,494</td>
</tr>
<tr>
<td>Secondary Education - Years 9 and below</td>
<td>17,136</td>
<td>10.07%</td>
<td>11,131</td>
</tr>
<tr>
<td>Total</td>
<td>170,208</td>
<td>100%</td>
<td>155,412</td>
</tr>
</tbody>
</table>

Source: ABS Census 2016

Employment self-containment and self-sufficiency

Employment self-containment and self-sufficiency are illustrations of the economic role that an LGA plays in its broader region and how well aligned the jobs it offers are with the skills of the resident population.

Self-containment is the percentage of people who live in an LGA who also work in the LGA. A low level of self-containment means people must travel outside of the LGA boundaries for work. Some level of outward commuting for work should be expected, unless an LGA covers a large area and forms a relatively contained economic region. In a large LGA, low self-containment in a particular industry may indicate a lack of business competitiveness in that industry.
Self-sufficiency is the proportion of jobs in an LGA which are held by residents of the LGA. As with self-containment, some level of inward commuting for work should be expected in an LGA which forms part of a broader economic region.

In a large industry, low levels of self-sufficiency generally indicate that an LGA has an important regional economic role, attracting workers from elsewhere. In smaller industries, low levels of self-sufficiency may indicate that the resident workforce is not highly skilled enough to support local industries, which may constrain the growth of businesses.

The self-sufficiency and self-containment for different industries in the Newcastle LGA is illustrated through the number of inward, outward and local commutes, shown in Figure 26. This analysis presents a positive picture of the alignment between local skills and jobs, with construction the only industry in which more people commuted out of the LGA than commuted within it.

Industry specific findings of this analysis include that:

- Over-a, there are many more workers commuting into Newcastle for work (49,337 as recorded in the 2016 census) than there are resident workers commuting out from Newcastle to jobs elsewhere (22,132 as recorded in the 2016 census). This reflects the role of Newcastle LGA as a regional employment centre.
- Newcastle has a strong regional economic role in health care and education, which are large local sectors with many local employees as well as attracting workers from elsewhere.
- The transport and warehousing, financial services, wholesale trade and utilities industries are relatively small, but attract workers from a broader area with few outward commutes. As noted in the industry specialisation section above, financial services is strongly concentrated in Newcastle compared to the surrounding area, so the attraction of workers from elsewhere is unlikely to be a problem.
- Manufacturing and construction had more workers commuting into than within or from the LGA, but also had relatively high numbers of outwards commutes compared to local commutes. The presence of outwards commutes demonstrates that there are also large numbers of these jobs nearby outside the Newcastle LGA, and there is unlikely to be a broad-based shortage of local labour. As there are more inwards than outwards commutes, the Newcastle LGA is a net attractor for workers in these industries.
Migration

While not an economic indicator, the levels of domestic as well as international migration to and from an area can provide an indication of how the economy may change in the future. High levels of migration can lead to a change in local demographics over time, which could change the local skill profile.

The most common locations for migration to and from the Newcastle LGA as recorded in the ABS census are shown in Table 12 and Table 13 respectively. These statistics do not capture all movements to and from the LGA but provide a snapshot of the migration profile based on where people lived in 2011 and 2016.

There were high levels of migration to and from adjacent or nearby LGAs, such as Lake Macquarie, Port Stephens, Cessnock and Maitland. More notably for economic development, there were high levels of migration from Greater Sydney (although only a relatively modest net migration) and from overseas.

As Greater Sydney becomes more congested in the future and if housing continues to be unaffordable, there is an opportunity for regional cities like Newcastle with high levels of amenity to attract more migrants from Greater Sydney. This could increase the local skill mix, as well as creating opportunities for targeted planning intervention and infrastructure investment as local demand for well-located housing and business locations increases.
TABLE 12: LOCATIONS WITH THE HIGHEST IN-MIGRATION TO NEWCASTLE LGA BETWEEN 2011-2016

<table>
<thead>
<tr>
<th>Location</th>
<th>In-migration</th>
<th>Proportion of population</th>
<th>Net migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Macquarie</td>
<td>7428</td>
<td>4.78%</td>
<td>-1187</td>
</tr>
<tr>
<td>Overseas</td>
<td>6725</td>
<td>4.33%</td>
<td></td>
</tr>
<tr>
<td>Greater Sydney</td>
<td>4234</td>
<td>2.72%</td>
<td>+823</td>
</tr>
<tr>
<td>Port Stephens</td>
<td>1917</td>
<td>1.23%</td>
<td>+63</td>
</tr>
<tr>
<td>Maitland</td>
<td>1881</td>
<td>1.21%</td>
<td>-933</td>
</tr>
<tr>
<td>Queensland</td>
<td>1654</td>
<td>1.06%</td>
<td>-294</td>
</tr>
<tr>
<td>Central Coast</td>
<td>1219</td>
<td>0.78%</td>
<td>+560</td>
</tr>
<tr>
<td>Mid Coast</td>
<td>1078</td>
<td>0.69%</td>
<td>+467</td>
</tr>
</tbody>
</table>


TABLE 13: LOCATIONS WITH THE HIGHEST OUT-MIGRATION FROM NEWCASTLE LGA BETWEEN 2011-2016

<table>
<thead>
<tr>
<th>Location</th>
<th>In-migration</th>
<th>Proportion of population</th>
<th>Net migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Macquarie</td>
<td>8615</td>
<td>8.49%</td>
<td>-1187</td>
</tr>
<tr>
<td>Greater Sydney</td>
<td>3411</td>
<td>3.36%</td>
<td>+823</td>
</tr>
<tr>
<td>Maitland</td>
<td>2814</td>
<td>2.77%</td>
<td>-933</td>
</tr>
<tr>
<td>Queensland</td>
<td>1948</td>
<td>1.92%</td>
<td>-294</td>
</tr>
<tr>
<td>Port Stephens</td>
<td>1854</td>
<td>1.83%</td>
<td>+63</td>
</tr>
<tr>
<td>Victoria</td>
<td>1292</td>
<td>1.27%</td>
<td>-416</td>
</tr>
<tr>
<td>Cessnock</td>
<td>951</td>
<td>0.94%</td>
<td>-271</td>
</tr>
<tr>
<td>Central Coast</td>
<td>659</td>
<td>0.65%</td>
<td>+560</td>
</tr>
</tbody>
</table>


Age

Figure 27 shows how the migration profile of the Newcastle LGA as recorded by the Census varies by age. As the census only contains statistics about people residing in Australia on census night, it is not possible to assess the number of people who moved from the Newcastle LGA to overseas. For this reason, only migrations from overseas into the LGA are shown and Figure 27 does not present a complete picture of the movement of people.

There was a large amount of net inward domestic migration of people aged 5-20 and 20-30 and a net outward migration of adults aged 30-45. There were also large numbers of people aged 20-30 and 30-45 who moved from overseas to Newcastle.
One of the reasons that people migrate to the Newcastle LGA is to attend an educational institution like the University of Newcastle. The age and educational institution being attended by people who lived in Newcastle in 2016 but not 2011 is shown in Table 14. Almost 7,000 people in the Newcastle LGA (4.5% of the population of 155,411) were studying at university in the LGA in 2016 and had not been living in the LGA in 2011. This was complemented by a further 1,119 people studying at TAFE who had moved to the LGA. Altogether this represents a strong flow of students to the Newcastle LGA to study at a tertiary institution.

These statistics are supported by enrolment statistics, which show that in 2018 the University of Newcastle had 5,841 international students and 20,174 domestic students studying on-campus. While the University has multiple campuses, the bulk of students would be expected to study within the Newcastle LGA.

It is notable that while a substantial number of people move to the Newcastle LGA to study, most people aged 20-30 (51.4%) and 30-45 (83.2%) who moved to the Newcastle LGA and were living there in 2016 were not studying. This suggests that educational institutions are not the only reason that young people move to the Newcastle LGA. Some level of internal immigration would be expected in all age groups would be expected, and the number of people aged 20-30 and 30-45 who moved to Newcastle LGA but were not study in 2016 was less than the number of people who moved from Newcastle LGA to other parts of Australia.
Without people moving to Newcastle to study, it is therefore likely that there would be a net out-migration of people aged 20-30 and 30-45.

Altogether, the age and educational institution profiles of migrants paints a picture of generally when and why people move to and from the LGA. Many people, including from overseas, come to the LGA to study, particularly at the University of Newcastle and from overseas. Without considering these people, there would not a net outward migration of young people from the LGA, with many people moving to Greater Sydney. Older people and families move back to Newcastle, with less moving from Newcastle to nearby LGAs like Port Macquarie.

This migration picture presents economic opportunities to the Newcastle LGA with land use planning implications. Many people will likely leave Newcastle after completing their studies. However, if even a fraction could be enticed to stay in the LGA or to move back later in life, this would provide a source of skilled migration encouraging growth in knowledge industries. In order to maximise the chances of this occurring, the Newcastle LGA must provide the high level of amenity in its centres which university students and graduates would seek. This includes vibrant centres with boutique retail environments and a strong nightlife. The presence of many students in the LGA are also likely to support the viability of this kind of centre.
6. FLOORSPACE SUPPLY

6.1 Retail supply

Methodology

This study does not involve an on-foot land audit. Rather, existing commercial and retail floorspace has been estimated using a combination of google analytics and building footprints provided by PSMA Australia through the Geoscape Dataset.

Data downloaded through the google maps API, supplemented by local business registry data, provides the location and types of businesses in the LGA as well as the general patterns of centres. These locations are matched against the Geoscape dataset, which is satellite-derived data showing the footprint and height of every building. After allocating businesses to buildings, the amount of floorspace per business within each building has been estimated. Floorspace estimates have been adjusted based on the number of levels in each building, the ratio of retail to commercial use and the expected sizes of different retail uses (for example, supermarkets occupy much more floorspace than clothing stores).

Much of the retail floorspace within the Newcastle LGA is located within stand-alone shopping centres. The sizes and kinds of premises within these centres has been determined based upon a manual review of available centre directories and the review of third-party shopping centre floorspace databases.

Floorspace estimates have been checked and refined using a number of other data sources, including:

- The Property Council of Australia (PCA) retail and floorspace database
- ABS Census data (deriving floorspace from employment estimates)
- Google Maps and Street View imagery
- Shopping centre websites

Retail floorspace is grouped into the following categories which have been adapted from the ABS’s retail categories:

- Supermarkets, which sell a wide range of food and are not specialised in any particular product (for example Woolworths or Aldi)
- Other food, which includes liquor retailing, fruit and vegetables stores, butchers, delicatessens and other specialised food retailers
- Hospitality and services, which includes cafes, restaurants, bars and takeaway food services
- Clothing and soft goods, which includes retailers of clothing, footwear and other personal accessories
- Household goods, which includes retailers of furniture, floor coverings, houseware, Manchester, electrical goods and hardware supplies
- Other retail, which includes retailers of newspapers, books, pharmaceuticals, cosmetics, recreational goods, stationary, used goods, flowers and other miscellaneous goods that do not fit within other categories
- Department stores, including discount department stores, which sell a wide variety of goods other than food or groceries with no predominant focus (for example Myer or Big W)
Retail precincts and commodity groups

The retail floorspace for each retail commodity in each of Newcastle’s centres with more than 5,000sqm of floorspace is shown in Table 15, with the largest centre in each category coloured green. The floorspace in the largest centres outside but near Newcastle, which constitute the second to fifth biggest centres in the broader area, are shown in Table 16.

These floorspace results are also illustrated in Figure 28, which maps the distribution of retail floorspace in the Newcastle LGA and nearby by travel zone. Multiple travel zones have been combined to provide a consolidated floorspace estimate for the Newcastle City Centre.

Based on absolute amount of floorspace, Kotara is the largest retail centre in the Newcastle LGA. It has the most floorspace in all retail commodity groups except hospitality, supermarkets and other food. Its dominance in several retail categories is shown in Table 17, which lists the percentage of all retail space in the Newcastle LGA contained in the two largest centres. Kotara alone contains half of all household goods floorspace (most of which is contained in the large format shopping area) and over half of all clothing and soft goods floorspace.

Newcastle City Centre is the next largest retail centre in the LGA. Unlike Kotara, which has a large amount of household goods floorspace but a broad distribution of floorspace in other categories, the Newcastle City Centre has 42% of the hospitality floorspace in the Newcastle LGA and large amounts of supermarket, other food and household goods floorspace, but much more limited amounts of floorspace selling clothing and soft goods and in department stores.

### TABLE 15: RETAIL FLOORSPACE (SQM) IN NEWCASTLE’S CENTRES

<table>
<thead>
<tr>
<th>Centre</th>
<th>Supermarket</th>
<th>Other Food</th>
<th>Hospitality and Services</th>
<th>Clothing and Soft Goods</th>
<th>Household Goods</th>
<th>Other Retail</th>
<th>Department Stores</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kotara</td>
<td>7,662</td>
<td>2,605</td>
<td>6,749</td>
<td>21,652</td>
<td>46,806</td>
<td>15,464</td>
<td>27,039</td>
<td>127,976</td>
</tr>
<tr>
<td>Newcastle City Centre</td>
<td>10,601</td>
<td>8,455</td>
<td>42,650</td>
<td>6,323</td>
<td>19,260</td>
<td>8,287</td>
<td>7,578</td>
<td>103,153</td>
</tr>
<tr>
<td>Jesmond</td>
<td>5,067</td>
<td>925</td>
<td>2,469</td>
<td>1,427</td>
<td>982</td>
<td>1,882</td>
<td>8,193</td>
<td>20,945</td>
</tr>
<tr>
<td>Wallsend</td>
<td>6,190</td>
<td>1,111</td>
<td>6,286</td>
<td>672</td>
<td>2,473</td>
<td>1,490</td>
<td></td>
<td>18,223</td>
</tr>
<tr>
<td>Hamilton</td>
<td>1,405</td>
<td>1,141</td>
<td>6,946</td>
<td>1,492</td>
<td>4,726</td>
<td>1,050</td>
<td></td>
<td>16,759</td>
</tr>
<tr>
<td>Waratah</td>
<td>3,967</td>
<td>226</td>
<td>1,139</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8,439</td>
</tr>
<tr>
<td>Mayfield</td>
<td>3,674</td>
<td>1,826</td>
<td>3,359</td>
<td>525</td>
<td>1,435</td>
<td>1,242</td>
<td></td>
<td>14,081</td>
</tr>
<tr>
<td>Hamilton North</td>
<td>1,217</td>
<td>1,561</td>
<td>539</td>
<td>7,309</td>
<td>336</td>
<td>425</td>
<td></td>
<td>11,387</td>
</tr>
<tr>
<td>The Junction</td>
<td>4,197</td>
<td>530</td>
<td>2,292</td>
<td>1,137</td>
<td>1,113</td>
<td>1,203</td>
<td></td>
<td>10,471</td>
</tr>
<tr>
<td>New Lambton</td>
<td>757</td>
<td>5,961</td>
<td>212</td>
<td>809</td>
<td>887</td>
<td></td>
<td></td>
<td>8,627</td>
</tr>
<tr>
<td>Broadmeadow</td>
<td>498</td>
<td>399</td>
<td>972</td>
<td>1,639</td>
<td>761</td>
<td>2,414</td>
<td></td>
<td>6,683</td>
</tr>
<tr>
<td>Islington-Maryville</td>
<td>140</td>
<td>2,147</td>
<td>691</td>
<td>2,725</td>
<td></td>
<td></td>
<td></td>
<td>5,703</td>
</tr>
<tr>
<td>Fletcher</td>
<td>5,111</td>
<td>267</td>
<td>287</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,666</td>
</tr>
<tr>
<td>Other</td>
<td>6,844</td>
<td>6,812</td>
<td>18,856</td>
<td>827</td>
<td>5,115</td>
<td>5,836</td>
<td>299</td>
<td>44,587</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50,486</strong></td>
<td><strong>25,510</strong></td>
<td><strong>102,427</strong></td>
<td><strong>36,567</strong></td>
<td><strong>94,412</strong></td>
<td><strong>36,511</strong></td>
<td><strong>61,870</strong></td>
<td><strong>407,782</strong></td>
</tr>
</tbody>
</table>
TABLE 16: RETAIL FLOORSPACE (SQM) IN THE THREE LARGEST RETAIL CENTRES NEAR THE NEWCASTLE LGA

<table>
<thead>
<tr>
<th>Centre</th>
<th>Supermarket</th>
<th>Other Food</th>
<th>Hospitality and Services</th>
<th>Clothing and Soft Goods</th>
<th>Household Goods</th>
<th>Other Retail</th>
<th>Department Stores</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charlestown</td>
<td>7,942</td>
<td>1,063</td>
<td>6,419</td>
<td>24,263</td>
<td>2,117</td>
<td>11,017</td>
<td>30,455</td>
<td>83,276</td>
</tr>
<tr>
<td>Glendale</td>
<td>9,677</td>
<td>224</td>
<td>5,142</td>
<td>7,824</td>
<td>2,546</td>
<td>6,125</td>
<td>17,192</td>
<td>48,729</td>
</tr>
<tr>
<td>The Hunter Shopping Centre</td>
<td>7,306</td>
<td>1,222</td>
<td>4,876</td>
<td>8,484</td>
<td>2,661</td>
<td>378</td>
<td>14,045</td>
<td>38,973</td>
</tr>
</tbody>
</table>

TABLE 17: PERCENTAGE OF NEWCASTLE LGA RETAIL FLOORSPACE IN NEWCASTLE CITY CENTRE AND KOTARA

<table>
<thead>
<tr>
<th>Centre</th>
<th>Supermarket</th>
<th>Other Food</th>
<th>Hospitality and Services</th>
<th>Clothing and Soft Goods</th>
<th>Household Goods</th>
<th>Other Retail</th>
<th>Department Stores</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kotara</td>
<td>15%</td>
<td>10%</td>
<td>7%</td>
<td>59%</td>
<td>50%</td>
<td>42%</td>
<td>44%</td>
<td>31%</td>
</tr>
<tr>
<td>Newcastle CBD</td>
<td>21%</td>
<td>33%</td>
<td>42%</td>
<td>17%</td>
<td>20%</td>
<td>23%</td>
<td>12%</td>
<td>25%</td>
</tr>
<tr>
<td>Other centres</td>
<td>64%</td>
<td>57%</td>
<td>52%</td>
<td>23%</td>
<td>30%</td>
<td>35%</td>
<td>44%</td>
<td>43%</td>
</tr>
</tbody>
</table>

The relative amounts of floorspace of different types in each centre clearly shows their differing retail functions. Newcastle City Centre is the major dining, entertainment and hospitality destination in the LGA.

Kotara has significantly less hospitality floorspace, but thanks to a recent renovation of Westfield Kotara does contain more than any other nearby centre besides Newcastle. It also contains a much broader distribution of other retail floorspace than Newcastle City Centre, including several department stores and much more clothing and soft goods and other retail floorspace, as well as a large homemaker centre. Kotara therefore functions as the major shopping destination in the Newcastle LGA.
6.2 Employment floorspace capacity

Using the current planning framework, SGS assessed the theoretical yield for retail, commercial and industrial development in the Newcastle LGA. This notional floorspace capacity identifies the total floorspace capacity that would be realised if all available sites were developed under various assumptions. This can be compared with future floorspace demand to identify any gaps in the current planning controls which could impede commercial and retail floorspace supply. This analysis will be conducted in the next stage of the retail studies.

Potential development yield has been assessed on a site by site basis using high level assumptions. Site-specific constraints in combination with design standards and building height controls may mean that the possible yield of some sites is less than the maximum
permissible floor space, but in most cases appropriate design responses should ensure that this does not occur. Site amalgamation would be required to allow many properties to be redeveloped.

This analysis took place in the following stages:

1. **Available land** was first determined. Available land represents all land where development is possible and on which commercial development is permissible. Heritage items, community uses, social infrastructure, public domain elements and strata-subdivided mixed-use buildings are excluded.

2. The **potential yield** calculation was conducted, in which the yield of all available sites if they were to be developed is calculated. Development assumptions are listed below.

3. The **net yield** calculation was conducted, in which the existing commercial floorspace on each site is subtracted from the potential yield to generate the amount of additional floorspace, known as the ‘net yield’.

Three capacity scenarios were considered, with different land availability and development yield assumptions used in each case.

**Conservative scenario**

This is a lower capacity limit where no redevelopment is expected to occur. If demand exceeds this capacity, some redevelopment of existing premises may be required.

Only vacant sites are included, with a notional commercial FSR of 0.5:1 is used in commercial zones which permit shop top housing. This represents the delivery of ground floor retail or other employment uses as well as some employment uses above the ground floor.

**Medium scenario**

This scenario permits some redevelopment to occur with a reasonable amount of employment generating floorspace provided following redevelopment. As such, it presents a more likely picture of capacity if some redevelopment is expected to occur than the conservative scenario. If demand exceeds this capacity, changes in planning controls may be required.

In this scenario, redevelopment of non-industrial sites with existing buildings is allowed, but only if less than 50% of allowable building area currently developed. This constraint reflects the likely lack of development feasibility if only a small uplift is available. No decrease in commercial floorspace is permitted through redevelopment.

A notional commercial FSR of 0.5:1 is used in commercial zones which permit shop top housing. This represents the delivery of ground floor retail or other employment uses as well as some employment uses above the ground floor. In the commercial core zone, it is assumed that development will yield only commercial floorspace, as shop-top housing has a lower allowable FSR. Significant delivery of shop top housing in this area could compromise future employment capacity.

**Maximum theoretical capacity**

This scenario gives the maximum possible capacity if all sites were able to be redeveloped to their maximum allowable employment generating floorspace amount. This is a theoretical upper limit.

All B-zoned sites can develop to the maximum FSR, with all floorspace delivered as commercial.

**Industrial yield**
In all cases an FSR of 0.8:1 has been used to calculate the yield of industrial development. This represents generally single storey industrial developments with some mezzanines and with high site coverage. Redevelopment of industrial premises is unlikely to occur, and so capacity is only calculated for vacant sites.

**Capacity scenario 1: Conservative (vacant) capacity**

Capacity scenario 3 is the most conservative scenario, and as outlined above sets out a lower limit for the employment floorspace capacity in which no sites with existing uses are expected to be redeveloped. Capacity results under this scenario are shown in the table below.

**TABLE 18: EMPLOYMENT FLOORSPACE CAPACITY (SQM) UNDER THE CONSERVATIVE CAPACITY SCENARIO**

<table>
<thead>
<tr>
<th>Region</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>IN1</th>
<th>IN2</th>
<th>IN3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner West</td>
<td>302</td>
<td>3,139</td>
<td>339</td>
<td>1,351</td>
<td>2,126</td>
<td></td>
<td></td>
<td></td>
<td>7,257</td>
</tr>
<tr>
<td>Inner North</td>
<td>995</td>
<td>5,667</td>
<td>5,577</td>
<td>1,207</td>
<td>221,830</td>
<td>53,361</td>
<td></td>
<td></td>
<td>288,637</td>
</tr>
<tr>
<td>Inner South</td>
<td>69</td>
<td>47</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Newcastle City</td>
<td></td>
<td></td>
<td></td>
<td>22,130</td>
<td>9,292</td>
<td></td>
<td></td>
<td></td>
<td>31,422</td>
</tr>
<tr>
<td>Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outer</td>
<td>4,455</td>
<td>7,583</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,860,044</td>
</tr>
<tr>
<td>Total</td>
<td>5,821</td>
<td>16,436</td>
<td>27,708</td>
<td>10,922</td>
<td>1,351</td>
<td>221,830</td>
<td>1,915,531</td>
<td>214,744</td>
<td>2,949,781</td>
</tr>
</tbody>
</table>

**Capacity scenario 2: Medium capacity**

Capacity Scenario 2 assumes that developments and redevelopments are built with a commercial notional FSR of 0.5:1 or an industrial FSR of 0.8:1. In some cases redevelopment of an existing commercial or retail building for mixed-use with a residential component would result in a decrease in the overall amount of employment generating floorspace. It has been assumed in this scenario that this cannot occur.

This scenario only considers those properties with potential for development uplift under current controls. This implemented through only including sites with less than 50% of allowable floorspace already developed. Comprehensive redevelopment of industrial sites for other industrial uses is generally uncommon, and so only vacant industrial sites have been considered.

Capacity under this scenario is shown in the table below.

**TABLE 19: EMPLOYMENT FLOORSPACE CAPACITY (SQM) UNDER THE MEDIUM CAPACITY SCENARIO**

<table>
<thead>
<tr>
<th>Region</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>IN1</th>
<th>IN2</th>
<th>IN3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner West</td>
<td>1,232</td>
<td>19,931</td>
<td>10,583</td>
<td>41,997</td>
<td>2,126</td>
<td></td>
<td></td>
<td></td>
<td>75,869</td>
</tr>
<tr>
<td>Inner North</td>
<td>1,842</td>
<td>12,131</td>
<td>37,959</td>
<td>27,955</td>
<td>221,830</td>
<td>53,361</td>
<td></td>
<td></td>
<td>355,078</td>
</tr>
<tr>
<td>Inner South</td>
<td>3,379</td>
<td>1,123</td>
<td>1,308</td>
<td>2,504</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8,314</td>
</tr>
<tr>
<td>Newcastle City</td>
<td></td>
<td></td>
<td></td>
<td>384,962</td>
<td>21,995</td>
<td></td>
<td></td>
<td></td>
<td>406,957</td>
</tr>
<tr>
<td>Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outer</td>
<td>6,767</td>
<td>22,008</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,860,044</td>
</tr>
<tr>
<td>Total</td>
<td>13,221</td>
<td>55,192</td>
<td>422,921</td>
<td>61,842</td>
<td>44,501</td>
<td>221,830</td>
<td>1,915,531</td>
<td>214,744</td>
<td>2,949,781</td>
</tr>
</tbody>
</table>

**Capacity scenario 3: Maximum theoretical capacity**

Capacity scenario 3 assumes that any lot that is not currently at its maximum capacity based on building heights and floorspace ratio controls could be redeveloped to maximum capacity. It assumes that all allowable floorspace would be employment generating in mixed-use developments.
This is a theoretical capacity scenario because it is highly unlikely that this type of redevelopment would occur, particularly with developments close to that maximum, due to feasibility constraints. It is also unlikely that there would not be a substantial residential component in developments in mixed-use zones.

TABLE 20: EMPLOYMENT FLOORSPACE CAPACITY (SQM) UNDER THE MAXIMUM THEORETICAL CAPACITY SCENARIO

<table>
<thead>
<tr>
<th>Region</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>IN1</th>
<th>IN2</th>
<th>IN3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner West</td>
<td>14,804</td>
<td>326,892</td>
<td>173,941</td>
<td>94,249</td>
<td>267,769</td>
<td></td>
<td></td>
<td></td>
<td>877,655</td>
</tr>
<tr>
<td>Inner North</td>
<td>20,896</td>
<td>156,666</td>
<td>37,959</td>
<td>614,087</td>
<td>459,045</td>
<td>280,764</td>
<td>40,985</td>
<td></td>
<td>1,610,402</td>
</tr>
<tr>
<td>Inner South</td>
<td>31,379</td>
<td>38,647</td>
<td>69,304</td>
<td>2,567</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>141,897</td>
</tr>
<tr>
<td>Newcastle City Centre</td>
<td>269</td>
<td>663,664</td>
<td>944,991</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,608,924</td>
</tr>
<tr>
<td>Outer</td>
<td>37,607</td>
<td>250,364</td>
<td>3,243,947</td>
<td>459,045</td>
<td>3,792,481</td>
<td>1,962,374</td>
<td></td>
<td>5,453,306</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>104,954</td>
<td>772,569</td>
<td>701,623</td>
<td>1,802,322</td>
<td>96,815</td>
<td>3,792,481</td>
<td>1,962,374</td>
<td>9,692,183</td>
<td></td>
</tr>
</tbody>
</table>

Capacity summary

A summary of capacity results under each of the scenarios is shown in Table 21 below.

There is a substantial amount of capacity for industrial floorspace under every scenario, with most of the likely development (shown in the conservative and moderate scenarios) in the Outer region of Newcastle, primarily in Beresfield. There is also some capacity in vacant sites in the IN1 zone, mostly in Mayfield. The maximum permissible capacity in industrial zones is much higher, but as noted above redevelopment of existing industrial sites for other industrial uses is unlikely in most cases.

Commercial capacity displays more variation between the different scenarios. There is a limited amount of commercial capacity under the conservative scenario in the established parts of Newcastle, which would be expected in established areas where there are few vacant sites. There is more capacity in the B1 and B2 zoned in the moderate scenario. However, redevelopment would be more likely in the B3 and B4 zones, which are most notably applied in the Newcastle City Centre where allowable development densities are relatively high. This results in a substantial increase in capacity in the B3 zone between the conservative and moderate scenario, as residential development is not permitted in this zone.

TABLE 21: TOTAL EMPLOYMENT FLOORSPACE CAPACITY (SQM) UNDER EACH OF THE CAPACITY SCENARIOS

<table>
<thead>
<tr>
<th>Region</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>IN1</th>
<th>IN2</th>
<th>IN3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative scenario</td>
<td>5,821</td>
<td>16,436</td>
<td>27,708</td>
<td>10,922</td>
<td>1,351</td>
<td>221,830</td>
<td>1,915,531</td>
<td>214,744</td>
<td>2,414,342</td>
</tr>
<tr>
<td>Moderate scenario</td>
<td>13,221</td>
<td>55,192</td>
<td>422,921</td>
<td>61,842</td>
<td>44,501</td>
<td>221,830</td>
<td>1,915,531</td>
<td>214,744</td>
<td>2,949,781</td>
</tr>
<tr>
<td>Maximum permissible</td>
<td>104,954</td>
<td>772,569</td>
<td>701,623</td>
<td>1,802,322</td>
<td>96,815</td>
<td>3,792,481</td>
<td>1,962,374</td>
<td>9,692,183</td>
<td></td>
</tr>
</tbody>
</table>

Newcastle employment lands strategy
7. FLOORSPACE DEMAND

7.1 Retail demand

SGS has used a retail gravity model to project future retail spending and floorspace demand in the Newcastle LGA. Gravity modelling simulates where people will spend their money when given the choice of different retail destinations. It considers additional variables such as spending by retail commodity type (i.e. groceries, clothing), the distance they have to travel and the attractiveness of that centre. A large Westfield for instance, tends to have greater ‘pull’ or ‘gravity’ compared to a local retail high street.

The SGS Retail Model is built on previous research as well as the extensive experience SGS has gained conducting many retail studies. The SGS retail model takes the following approach:

\[
\text{Propensity to shop at a centre} = \frac{\text{“Attractiveness” of centre} \times \text{Floorspace of shopping centre}}{\text{Travel time to the shopping centre}}^2
\]

This formula recognises that an individual is more likely to go to more ‘attractive’ and larger centres and less likely to go to small, lower-quality centres that are further away.

The ‘attractiveness’ of a shopping centre refers to a range of visual and functional attributes, including ease of access and car parking as well as the quality of the shopping experience. Unlike other gravity models, the SGS model does not explicitly measure the effects of design layout or product mix. Instead, it uses the shopping centre’s current turnover and the distribution of current demand as a basis to establish a ‘current attractiveness value’ for the centre. This current attractiveness value is then used to forecast how the shopping centre will perform in the future given changes in population expenditure.

Why use a gravity model?

Other demand approaches (such as survey-based assessments) are expensive and data intensive and only consider current population and behaviour. Simplified ‘shift-share’ approaches typically focus on one/a few centres and heavily rely on judgement-based catchments with exaggerated market share thresholds.

Gravity models, on the other hand, present the following benefits:

- All spending across the retail system is accounted for once and only once;
- Catchments are generated through data analysis rather than through the judgement of consultants; and
- A gravity model captures the continuous and dynamic nature of catchments, based on changing demand, supply, and transport infrastructure.

Drivers of retail demand

Increases in retail spending are predominately driven by population growth. An increase in the number of workers in an area does increase retail turnover, but this is usually less important than population projections as on average people spend the most money in retail premises near where they live rather than near where they work.
Forecasts of the future resident population and employment in the Newcastle LGA were estimated at a small-area level using projections from the Transport Performance and Analytics (TPA) division within TfNSW, which are used to develop common planning assumptions across the NSW Government. Projections were calculated in five-year categories out to 2056 at the travel zone level.

Based on these forecasts, population within the Newcastle LGA is expected to grow by 23% from approximately 162,900 to 200,600 between 2016-2036. Employment is expected to grow at a slightly slower rate, increasing by 12% from approximately 112,450 to 126,000 between 2016-2036.

**FIGURE 29 POPULATION AND EMPLOYMENT PROJECTIONS, NEWCASTLE LGA**

![Population and Employment Projections](image)

*Source: SGS Economics and Planning 2019; Transport for NSW 2019*

**Current retail supply and demand balance**

SGS’s gravity model is calibrated based on the assumption that the retail system is currently in equilibrium, with retail floorspace supply roughly equal to retail floorspace demand and no large under-provision or over-provision of floorspace for particular retail commodity types. This is a standard assumption in many retail models and reflects the difficulty in obtaining accurate measures of current turnover in retail centres outside of large shopping centres.

As SGS’s model assumes that retail supply and demand is balanced in the base year, it is generally assumed that relative increases in the retail performance of centres will translate into increases in floorspace demand. However, if some centres are currently performing poorly or there is more retail floorspace in an area than could be supported by the demand generated by the local population, this assumption cannot be made. In this case, increases in the performance of certain centres should rather be interpreted as improving their viability but not generating additional floorspace demand.

Current retail provision rates (amount of floorspace per person) provide an indication of the retail supply demand balance in an area. These are shown in Table 22 for the Newcastle LGA and benchmark areas in Greater Sydney.

When compared to Greater Sydney, the Newcastle LGA has a relatively low amount of department store floorspace and large amounts of discount department store, supermarket and other floorspace, with a slightly larger amount of retail floorspace per capita overall. In the smaller areas in the LGA, there are generally high levels of supermarket, discount department store and other floorspace. There is a limited amount of retail floorspace in the
outer area, particularly for specialty retail needs, with people needing to travel to a centre like Kotara or the Newcastle City Centre.

There are large shopping centres in Charlestown and Glendale near the southern boundary of the Newcastle LGA. As their catchment is likely to extend into the Newcastle LGA, retail provision rates for the combined area of the Lake Macquarie and Newcastle LGAs should also be considered. This is shown in Table 22. Similarly to provision rates for the Newcastle LGA, there are large amounts of supermarket and discount department store floorspace as well as low levels of department store floorspace, with overall retail provision rates higher than in Greater Sydney or most of its districts.

Beresfield and Tarro are part of the Newcastle LGA and are likely to form part of the retail catchments of larger centres in the Maitland area. However, these areas form only 3 per cent of the total population of the Newcastle LGA, and are sufficiently distant from the rest of the LGA that retailing in the Maitland area is unlikely to significantly affect the Newcastle LGA’s retail provision rates.

Newcastle and Lake Macquarie’s retail provision rates suggest that there may be an oversupply of retail floorspace in the Newcastle LGA. Supermarket and other retail floorspace provision is particularly high compared to the benchmark areas. This is consistent with reports that retailing is performing poorly in the Newcastle City Centre, where there is a large amount of retail floorspace.

The relatively large amount of discount department store floorspace in Newcastle and surrounds is counteracted to some degree by the low level of department store floorspace. However, department stores are vulnerable to the rise of online retailing. If their performance continues to decline, some of Newcastle’s centres with large discount department stores may suffer and may need to be reconfigured.

### TABLE 22: RETAIL FLOORSPACE PROVISION RATES (SQM/PERSON)

FOR EACH COMMODITY TYPE, BLUE CELLS SHOW RELATIVELY LOW VALUES WHILE RED CELLS SHOW RELATIVELY HIGH VALUES

<table>
<thead>
<tr>
<th>Area</th>
<th>Department Store</th>
<th>Discount Department Stores</th>
<th>Supermarkets (&gt;1000 sqm)</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner North &amp; Inner West</td>
<td>0.11</td>
<td>0.33</td>
<td>0.23</td>
<td>2.51</td>
<td>3.07</td>
</tr>
<tr>
<td>Newcastle City Centre &amp; Inner South</td>
<td>0.00</td>
<td>0.28</td>
<td>0.55</td>
<td>3.68</td>
<td>4.51</td>
</tr>
<tr>
<td>Outer</td>
<td>0.00</td>
<td>0.17</td>
<td>0.39</td>
<td>0.70</td>
<td>1.26</td>
</tr>
<tr>
<td>Total</td>
<td>0.06</td>
<td>0.27</td>
<td>0.33</td>
<td>2.14</td>
<td>2.75</td>
</tr>
<tr>
<td>Newcastle LGA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.07</td>
<td>0.26</td>
<td>0.46</td>
<td>1.95</td>
<td>2.74</td>
</tr>
<tr>
<td>Newcastle and Lake Macquarie LGAs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater Sydney</td>
<td>0.11</td>
<td>0.12</td>
<td>0.23</td>
<td>1.88</td>
<td>2.35</td>
</tr>
<tr>
<td>Eastern City District</td>
<td>0.18</td>
<td>0.09</td>
<td>0.20</td>
<td>3.00</td>
<td>3.47</td>
</tr>
<tr>
<td>South District</td>
<td>0.10</td>
<td>0.11</td>
<td>0.19</td>
<td>1.53</td>
<td>1.93</td>
</tr>
<tr>
<td>Central City District</td>
<td>0.08</td>
<td>0.16</td>
<td>0.23</td>
<td>1.55</td>
<td>2.01</td>
</tr>
</tbody>
</table>

Source: SGS Economics and Planning 2019, Deep End Services 2016, Sydney Retail Demand and Supply Consultancy prepared for Greater Sydney Commission

### Retail expenditure

Retail expenditure data has been developed out of resident-based expenditure accounts across 24 commodity groups at an SA1 level (e.g. fresh food, groceries, pharmaceuticals, restaurants, etc). These expenditure accounts are sourced from Marketinfo’s Market Data
Newcastle employment lands strategy

Systems (MDS). MDS are the industry benchmark in estimating small area expenditure that draws on the latest Household Expenditure Survey (HES), ABS Census and other datasets. These expenditure per capita forecasts are then combined with the small area land use projections discussed above to generate forecasts for how population expenditure will change between 2016-2036. As the population grows, expenditure in every category is expected to grow, but spending in supermarkets is expected to experience the most growth.

The retail expenditure data also considers changing consumer spending patterns, such as the growing role of online shopping, in addition to factoring in the degree to which expenditure is influenced by work-based, education-based and tourism-based spending. These considerations help to capture overall leakage/capture for the whole system.

### TABLE 23: RETAIL EXPENDITURE BY RESIDENTS OF THE NEWCASTLE LGA ($ MILLION), 2016-2036

<table>
<thead>
<tr>
<th>Commodity Type</th>
<th>2016</th>
<th>2026</th>
<th>2036</th>
<th>Change</th>
<th>Average annual growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermarket</td>
<td>$681</td>
<td>$870</td>
<td>$1,055</td>
<td>$374</td>
<td>2.2%</td>
</tr>
<tr>
<td>Other Food</td>
<td>$317</td>
<td>$381</td>
<td>$444</td>
<td>$128</td>
<td>1.7%</td>
</tr>
<tr>
<td>Hospitality and Services</td>
<td>$139</td>
<td>$162</td>
<td>$203</td>
<td>$64</td>
<td>1.9%</td>
</tr>
<tr>
<td>Clothing and Soft Goods</td>
<td>$257</td>
<td>$319</td>
<td>$398</td>
<td>$140</td>
<td>2.2%</td>
</tr>
<tr>
<td>Household Goods</td>
<td>$325</td>
<td>$367</td>
<td>$416</td>
<td>$91</td>
<td>1.2%</td>
</tr>
<tr>
<td>Other Retail</td>
<td>$383</td>
<td>$423</td>
<td>$505</td>
<td>$122</td>
<td>1.4%</td>
</tr>
<tr>
<td>Department Stores</td>
<td>$201</td>
<td>$243</td>
<td>$279</td>
<td>$78</td>
<td>1.7%</td>
</tr>
<tr>
<td>Total</td>
<td>$2,302</td>
<td>$2,764</td>
<td>$3,300</td>
<td>$997</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Source: Marketinfo, SGS 2019

### Retail turnover

In order to understand the impact of retail activity on Newcastle’s centre network, it is necessary to understand the quantity of retail activity that is taking place within Newcastle’s centres. Note that this figure will necessarily be different to the level of retail expenditure generated by the local population. In the case of the Newcastle LGA, the level of retail expenditure estimated to be generated by the local population in 2016 is projected to be around $2.3 billion – representing 72 per cent of the turnover generated by Newcastle LGA’s centres. This makes the LGA a net importer of retail expenditure.

This situation can be explained by the relative attractiveness of Newcastle LGA’s centres to those in neighbouring regions, and the relative proximity/accessibility of Newcastle’s major centres for certain commodity groups to residents of surrounding LGAs. For example, household goods and hospitality turnover in Newcastle’s centres is estimated to be much higher than the expenditure generated by the population’s spending in these categories. This reflects the concentration and size of household goods floorspace (predominantly at Kotara) and hospitality floorspace (at Newcastle City Centre as well as elsewhere) in the Newcastle LGA compared to the surrounding area.

### TABLE 24: RETAIL TURNOVER OCCURRING IN THE NEWCASTLE LGA’S CENTRES ($ MILLION), 2016-2036

<table>
<thead>
<tr>
<th>Commodity Type</th>
<th>2016</th>
<th>2026</th>
<th>2036</th>
<th>Change</th>
<th>Average annual growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermarket</td>
<td>$611</td>
<td>$782</td>
<td>$961</td>
<td>$350</td>
<td>2.3%</td>
</tr>
<tr>
<td>Other Food</td>
<td>$232</td>
<td>$277</td>
<td>$325</td>
<td>$93</td>
<td>1.7%</td>
</tr>
<tr>
<td>Hospitality and Services</td>
<td>$345</td>
<td>$402</td>
<td>$521</td>
<td>$176</td>
<td>2.1%</td>
</tr>
</tbody>
</table>
Future turnover and floorspace demand forecasts are one possible view of the future retail market assuming that the current retail system is in equilibrium and that if the relative attractiveness of different centres stays the same. A different distribution of future development will generate a different pattern of future turnover, with impacts on the expected turnover of existing centres. Increases in attractiveness of particular centres, for example through reduced traffic congestion, a broader retail mix or a more attractive environment, are not anticipated in the model and could also shift the propensities of consumers to spend their money in different centres.

**Retail floorspace demand**

Using benchmark retail turnover densities (RTDs) for each of the retail categories and centre sizes, it is possible to estimate the quantity of retail floorspace likely to be demanded within each centre as a result of changes in retail expenditure within their respective catchments. This provides a better estimate of how the performance of centres will change in the future than changes in turnover, as RTDs are adjusted over time to account for improvement in floorspace productivity (i.e. real increases in RTD).

Expected increases in retail floorspace demand are calculated on the assumption that the retail system is currently close to equilibrium, and so increases in the performances of centres above that which could be attributed to inflation can be interpreted as demand for additional retail floorspace. If certain centres are currently underperforming, this will not be reflected in the model results. In this case, improvements in retail performance should be viewed as increasing the viability of existing retail floorspace rather than creating demand for additional floorspace.

The expected retail floorspace demand by commodity type across the Newcastle LGA is shown in Table 25. The greatest increase in floorspace is expected to be in hospitality and services, while the greatest percentage increase in current floorspace is expected for supermarkets. If around 21,000sqm of supermarket floorspace were delivered, this would be equivalent to around 5-7 additional full line supermarkets. However, the actual demand may be lower to that given the large level of supermarket floorspace provision in Newcastle and surrounds compared to Greater Sydney.

**TABLE 25: RETAIL FLOORSPACE DEMAND BY COMMODITY TYPE, 2016-2036**

<table>
<thead>
<tr>
<th>Commodity Type</th>
<th>2016</th>
<th>2026</th>
<th>2036</th>
<th>Increase</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermarket</td>
<td>50,486</td>
<td>61,200</td>
<td>71,473</td>
<td>20,987</td>
<td>41.6%</td>
</tr>
<tr>
<td>Other Food</td>
<td>25,510</td>
<td>28,916</td>
<td>32,349</td>
<td>6,839</td>
<td>26.8%</td>
</tr>
<tr>
<td>Hospitality and Services</td>
<td>102,427</td>
<td>110,678</td>
<td>133,246</td>
<td>30,820</td>
<td>30.1%</td>
</tr>
<tr>
<td>Clothing and Soft Goods</td>
<td>36,567</td>
<td>42,169</td>
<td>50,253</td>
<td>13,686</td>
<td>37.4%</td>
</tr>
<tr>
<td>Household Goods</td>
<td>94,412</td>
<td>99,000</td>
<td>106,745</td>
<td>12,333</td>
<td>30.1%</td>
</tr>
<tr>
<td>Other Retail</td>
<td>36,511</td>
<td>37,503</td>
<td>41,855</td>
<td>5,344</td>
<td>14.6%</td>
</tr>
<tr>
<td>Department Stores</td>
<td>61,870</td>
<td>69,494</td>
<td>76,505</td>
<td>14,635</td>
<td>23.7%</td>
</tr>
<tr>
<td>Total</td>
<td>407,782</td>
<td>448,960</td>
<td>512,426</td>
<td>104,645</td>
<td>25.7%</td>
</tr>
</tbody>
</table>

Source: MarketInfo, SGS Economics & Planning
Expected increases in retail demand are broken down spatially in Table 26. This shows that the greatest numerical increase in demand is expected to be in the Inner West Region. As this area currently contains the Kotara centre, the gravity model predicts that the existing gravity of this centre is estimated to capture a large amount of additional spending. The percentage increases in all other regions is larger than that in the Inner West region, due to the relatively low levels of population growth expected in the Inner West region compared with other regions.

<table>
<thead>
<tr>
<th>Area</th>
<th>2016</th>
<th>2026</th>
<th>2036</th>
<th>Increase</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newcastle City Centre</td>
<td>102,759</td>
<td>118,249</td>
<td>137,763</td>
<td>35,004</td>
<td>34.1%</td>
</tr>
<tr>
<td>Inner North</td>
<td>32,838</td>
<td>35,800</td>
<td>41,386</td>
<td>8,548</td>
<td>26.0%</td>
</tr>
<tr>
<td>Inner South</td>
<td>16,320</td>
<td>17,804</td>
<td>20,146</td>
<td>3,826</td>
<td>23.4%</td>
</tr>
<tr>
<td>Inner West</td>
<td>199,259</td>
<td>213,405</td>
<td>240,202</td>
<td>40,943</td>
<td>20.5%</td>
</tr>
<tr>
<td>Outer</td>
<td>56,605</td>
<td>63,702</td>
<td>72,928</td>
<td>16,323</td>
<td>28.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>407,782</strong></td>
<td><strong>448,960</strong></td>
<td><strong>512,426</strong></td>
<td><strong>104,645</strong></td>
<td><strong>25.7%</strong></td>
</tr>
</tbody>
</table>

Source: MarketInfo, SGS Economics & Planning

After Kotara, the largest increases in demand are expected to be in the Newcastle City Centre, which has relatively high projected population growth as well as a large amount of current retail floorspace.

### 7.2 Commercial and industrial demand

**Method**

Future non-retail employment floorspace has been estimated based upon small-area employment projections for the Newcastle LGA. The same projections have been used for this purpose and in the retail model, and these projections are discussed in more detail in Section 7.1 above.

Employment projections have been converted into floorspace projections using the following method.

**Step one: Broad land use categories**

Employment forecasts by industry by small area are converted into forecasts by broad land use categories (BLCs), using SGS BLC matrices which have been developed across multiple prior land audits and which have been adjusted to reflect Newcastle’s land use profiles. BLCs are types of built form such as office, light manufacturing and retail main street. Retail employment is excluded as it is addressed in the retail model.

**Step two: Floorspace demand in small areas**

Standard SGS floorspace per job ratios for each BLC are used to convert employment forecasts into forecasts for floorspace demand.

**Step three: LGA-wide floorspace demand**

Floorspace requirements are aggregated up to the LGA level, maintaining the split into land use zones and BLCs. They are then redistributed into likely areas as discussed below.

**Step four: Demand redistribution**

It is important to aggregate floorspace demand to an LGA level because businesses, regardless of their type, are rarely constrained to operating in a single precinct. Additionally,
the employment forecasts used are less accurate at a small area level, but are more accurate when multiple adjacent precincts are considered together.

This approach therefore aggregates this supply-demand gap up to the LGA to enable strategic planning directions to best assign where growth should occur. This is one of the biggest distinctions between this method and the retail modelling, as the retail gravity model assumes that existing major retail centres will continue to pull future retail spending toward them.

To provide the required granularity in floorspace requirements to inform strategic planning, the total commercial floorspace for the LGA is split into population-serving and strategic designations. This is done by identifying a proportion or employment and floorspace which is likely to be population driven, based on a ratio between the size of the population and the number of local jobs identified by SGS through regression analysis of Metropolitan Sydney’s employment and population change. The remaining floorspace demand is assumed to be more business-serving and so the associated businesses will be more footloose in selection their location.

The population-driven floorspace demand is finally distributed throughout the LGA proportionally to population forecasts. Strategic floorspace demand remains at an LGA level and is distributed separately based on strategic planning aspirations and an understanding of the commercial landscape.

Industrial land does not have a distinction applied between population serving and business serving. Instead, BLCs have been classified as light industrial, heavy industrial or office-based. Demand for these categories is reported LGA-wide. In general, light industrial demand will be best met in precincts which are relatively close to the population and other businesses and which contain smaller lots. Heavy industrial uses, which include large-scale freight and logistics, is best suited to precincts which are free from land use constraints, which have good access to the major road network, and which have larger lots. These attributes are discussed in more detail in Section 8.3.

**Employment projections**

Employment projections for the Newcastle LGA are based on likely growth rates for each industry which are based on macroeconomic factors and recent changes in performance by industry across Greater Sydney, Newcastle and Wollongong. The anticipated average annual growth rates per industry between 2016-2036 in the Newcastle LGA are shown in Figure 30.

These industry-specific growth rates reflect the economic context of Greater Sydney and surrounding regions, but may not reflect the specific economic context of the Newcastle LGA. High growth rates are predicted for knowledge intensive industries like professional services, and while this is likely to be accurate in Greater Sydney, Section 5 identified that professional services employment contracted in the Newcastle LGA between 2016-2036. Similarly, transport and warehousing employment is expected to contract, but grew in the Newcastle LGA between 2011-2016. While the Port of Newcastle would be expected to bolster employment in this sector, it is also associated with a range of other transport, postal and warehousing businesses in which automation may decrease employment levels.

As a result of the differences between industry specific growth projections and local economic context, these employment projections may overstate the likely employment growth in the Newcastle LGA. Floorspace demand projections which are based on them may also overstate likely floorspace demand.

Despite their failings, these projections provide a common set of planning assumptions across multiple levels of government and so are the best available information source for local planning. The City of Newcastle should plan aspirationally and ensure that there is enough zoned land to accommodate predicted employment levels, while anticipating that slightly less demand may eventuate.
Floorspace demand

Floorspace demand results for the Newcastle LGA are shown below in Table 27.

While employment in the traditionally industrial industries of manufacturing and transport are expected to contract between 2016-2036 as recorded in the ABS industry categorisation, there is not expected to be an overall decline in demand for floorspace in industrial areas. This reflects the industry profile in industrial areas, which as noted in Section 5.1 is much more broad than the traditionally industrial ANZSIC categories (the industry categorisation the ABS uses) of agriculture and primary industries, mining, manufacturing, utilities and wholesale trade. As a result, overall employment is expected to grow in many industrial areas. Corresponding floorspace demand is expected to grow in many cases, varying between different precincts depending on the kind of industrial floorspace considered.

Demand for heavy industrial floorspace is expected to contract as a result of the expected declines in employment in certain industries which is discussed above. As a result of forecast increases in employment in a variety of other industries, demand for light industrial floorspace is expected to increase. This accords with the current high levels of demand for industrial premises discussed in section 4.2. Office floorspace in industrial precincts is also expected to increase, although industrial precincts would likely be competing with Newcastle City Centre for the kinds of businesses which would want to locate in these premises.

There is a relatively modest expected demand in population-serving commercial floorspace demand. This demand is highest in the Newcastle City Centre, Inner West and Outer regions where population forecasts are highest.

Demand for other employment generating floorspace in commercial premises is more substantial than for population-serving commercial. This includes a wide variety of industries and broad land use categories including offices, and so some of this floorspace would be
expected to be distributed throughout the LGA. However, the location of most of it would be driven by the amenity of different precincts for commercial development. The Newcastle City Centre would be the most appropriate location for this floorspace from a strategic-planning point of view.

**TABLE 27: NON-RETAIL EMPLOYMENT FLOORSPACE DEMAND BETWEEN 2016-2036**

<table>
<thead>
<tr>
<th>Type of floorspace and area</th>
<th>Floorspace demand (sqm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population serving commercial</td>
<td></td>
</tr>
<tr>
<td>Newcastle City Centre</td>
<td>6,762</td>
</tr>
<tr>
<td>Inner South</td>
<td>2,841</td>
</tr>
<tr>
<td>Inner North</td>
<td>4,387</td>
</tr>
<tr>
<td>Inner West</td>
<td>7,658</td>
</tr>
<tr>
<td>Outer</td>
<td>11,733</td>
</tr>
<tr>
<td>Other commercial (including business serving)</td>
<td>249,882</td>
</tr>
<tr>
<td>Industrial</td>
<td></td>
</tr>
<tr>
<td>Light</td>
<td>122,983</td>
</tr>
<tr>
<td>Heavy</td>
<td>-17,465</td>
</tr>
<tr>
<td>Office</td>
<td>15,443</td>
</tr>
<tr>
<td>Subtotal</td>
<td>120,961</td>
</tr>
<tr>
<td>Total</td>
<td>404,224</td>
</tr>
</tbody>
</table>
8. DISCUSSION

8.1 Future floorspace supply and demand balance

Summaries of the floorspace capacity and demand identified by SGS’s modelling are shown in Table 28 and Table 29 below.

By comparing the two, it can be seen that the future retail and population serving floorspace demand in centres is higher than the conservative capacity in centres in every area. This means that additional demand cannot be accommodated without any redevelopment of existing buildings, which is to be expected in a developed LGA like Newcastle.

In every case except the Inner West and Inner North regions future retail and population serving floorspace demand in centres is less than the medium capacity. This means that demand could be accommodated within existing planning controls if site redevelopment occurs and if there is only a notional commercial FSR of 0.5:1 in any redevelopment. A larger commercial component in development would increase the capacity.

In the Inner West district, most of the future demand is retail demand, and the appropriateness of this development occurring is discussed in more detail in Section 8.5 below. The Inner South District is relatively small. Any demand in this area that could not be accommodated in this district could be accommodated in the adjacent Newcastle City Centre.

The other commercial and industrial demands are likely to be more footloose and could be accommodated anywhere in the LGA depending on which locations are the most suitable.

### TABLE 28: SUMMARY OF FLOORSPACE CAPACITY (SQM) FOR THE NEWCASTLE LGA

<table>
<thead>
<tr>
<th>Area</th>
<th>Centres</th>
<th></th>
<th></th>
<th>Industrial</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conservative</td>
<td>Medium</td>
<td>Maximum theoretical</td>
<td>Conservative</td>
<td>Medium</td>
<td>Maximum theoretical</td>
</tr>
<tr>
<td>Inner West</td>
<td>3,780</td>
<td>31,746</td>
<td>515,637</td>
<td>3,477</td>
<td>44,123</td>
<td>362,018</td>
</tr>
<tr>
<td>Inner North</td>
<td>13,446</td>
<td>79,887</td>
<td>829,608</td>
<td>275,191</td>
<td>275,191</td>
<td>780,794</td>
</tr>
<tr>
<td>Inner South</td>
<td>200</td>
<td>5,810</td>
<td>139,330</td>
<td>0</td>
<td>2,504</td>
<td>2,567</td>
</tr>
<tr>
<td>Newcastle City Centre</td>
<td>31,422</td>
<td>406,957</td>
<td>1,608,924</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Outer</td>
<td>12,038</td>
<td>28,775</td>
<td>287,971</td>
<td>2,074,788</td>
<td>2,074,788</td>
<td>5,165,335</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>60,886</td>
<td>553,175</td>
<td>3,381,470</td>
<td>2,353,456</td>
<td>2,396,606</td>
<td>6,310,714</td>
</tr>
</tbody>
</table>

### TABLE 29: SUMMARY OF FLOORSPACE DEMAND (SQM) FOR THE NEWCASTLE LGA

<table>
<thead>
<tr>
<th>Area</th>
<th>Population serving commercial</th>
<th>Retail</th>
<th>Subtotal</th>
<th>Other commercial</th>
<th>Industrial - light</th>
<th>Industrial - heavy</th>
<th>Industrial - office</th>
<th>Industrial total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner West</td>
<td>7,658</td>
<td>40,943</td>
<td>48,601</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inner North</td>
<td>4,387</td>
<td>8,548</td>
<td>12,935</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inner South</td>
<td>2,841</td>
<td>3,826</td>
<td>6,667</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newcastle City Centre</td>
<td>6,762</td>
<td>35,004</td>
<td>41,766</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outer</td>
<td>11,733</td>
<td>16,323</td>
<td>28,056</td>
<td>249,882</td>
<td>122,983</td>
<td>-17,465</td>
<td>15,443</td>
<td>120,961</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>33,381</td>
<td>104,644</td>
<td>138,025</td>
<td>249,882</td>
<td>122,983</td>
<td>-17,465</td>
<td>15,443</td>
<td>120,961</td>
</tr>
</tbody>
</table>
It would be expected that some of the other commercial demand would be distributed across the LGA, with much of it going to the Newcastle City Centre as the primary commercial centre. There is enough capacity in the Newcastle City Centre to absorb all of the other commercial demand, so there is no need to zone for additional capacity before 2036.

There is much more capacity in industrial zones than anticipated demand for industrial floorspace. Almost all of this industrial capacity is located in the Mayfield West, Beresfield, Hexham and Sandgate precincts, with the result that most of the identified capacity in Table 28 is located in the Outer region. As there is enough capacity to accommodate demand, it is important to consider the appropriateness of identified precincts for industrial businesses. This question is addressed in Section 8.3 below.

As noted in Section 7.2, non-retail floorspace demand figures are based on employment projections that apply high-level trends to derive growth rates for each industry, which may not reflect the local economic context of Newcastle. These projections are the best available source for likely future land use considering macro-economic factors, and so it is appropriate to plan for future floorspace accordingly. However, Council should also consider that actual commercial demand may be lower than anticipated. Council should also plan to consider additional potential demand that may arise from economic transitions and economic development created by economic catalysts.

**8.2 Economic transition**

Newcastle has historically been viewed as an industrial city anchored by the steel industry, although this status began to decline in the 1980s as the number of workers in the steel industry decreased. There are some signs which were documented in Section 5 that the local economy is currently undergoing a broader transition towards other sectors, many of which are more knowledge intensive. While employment in manufacturing and several other traditionally industrial industries fell sharply between 2011-2016, employment across all industries grew in Newcastle between 2011-2016.

However, there is not clear evidence of a broad transition towards jobs in professional services, financial services and similar industries that are very high value and concentrated in places like Sydney. Professional services and financial services are specialised in Newcastle compared to NSW outside of Greater Sydney. However, the competitive shift of Newcastle between 2011-2016 for most of these industries when compared to NSW as a whole (including Greater Sydney) was negative, and employment in professional services in the LGA shrank between 2011-2016. This is contrary to projections, which estimate that professional services employment will experience significant growth in the future.

Instead of a shift towards knowledge intensive employment, employment growth in Newcastle between 2011-2016 was dominated by health care, education, accommodation and food and construction, all of which had a positive competitive shift compared to NSW. Each of these sectors are specialised in the Newcastle LGA compared to Greater Sydney, and health care is also specialised compared to NSW. Health care and education are strengths of the Newcastle LGA given its regional role and are expected to continue to grow in the future.

**Economic catalysts**

Economic growth in the Newcastle LGA is likely to continue as a result of population growth, however, higher levels of growth and transitions in the composition of the local economy may be driven by economic catalysts. These are large developments or uses which create a competitive advantage for Newcastle or change the way it is perceived.

Potential economic catalysts include:

- The opening of the Newcastle Light Rail Line, which creates threats to the continued function of the eastern part of the Newcastle City Centre, but also opens access between the City Centre and the Hunter River. This creates opportunities to improve the public
domain in Newcastle, which would increase its viability as a hospitality and boutique retail destination.

- Potential growth of universities and proposed university expansion in the Newcastle City Centre. Development in the City Centre creates employment and additional demand for services and retail. Expansion of the University of Newcastle or the opening of other university facilities, such as the proposed campus of Nihon University in the Newcastle City Centre, would also heighten the opportunity to change the skills mix of the local population, noting that many people move from outside Newcastle to the LGA for study.

- The Port of Newcastle is a competitive advantage for the Newcastle LGA, and an expansion of the Port with a new container terminal is proposed. While this has not been approved by the NSW government, any expansion of the port has the potential to encourage significant growth in the transport and logistics industry and others in its supply chain.

- Port Stephens and the Hunter Valley are significant tourism destinations near Newcastle. Encouraging people to spend time in Newcastle on the way to these destinations has the potential to encourage additional growth in the hospitality industry, particularly in the Newcastle City Centre where this industry is strongest. Large developments like the proposed cruise ship terminal in Newcastle would increase this potential.

- Continued housing affordability issues in Sydney and increasing congestion as densities increase have the potential to encourage people to move to the Newcastle LGA. While net migration from Greater Sydney was not a significant proportion of the local population in the Newcastle LGA between 2011-2016, if this changes in the future it will encourage an increase in local educational attainment.

- Faster rail from Sydney to Newcastle has been proposed by the NSW Government. While there has been no commitment to the delivery of this and details are unconfirmed, a reduction in travel time from Newcastle to Sydney and other areas could encourage additional commercial development, particularly around Newcastle Interchange.

- The proposed expansion of the John Hunter Hospital to create a health and innovation precinct, which will ensure continued growth in employment in the health sector and create opportunities for businesses within related supply chains.

These economic catalysts and other external forces which will impact Newcastle’s economy in the future introduce an element of uncertainty into future economic performance and land use requirements. As a result, Council should continue to periodically review their employment lands strategy.

### 8.3 The future of industrial land in Newcastle

As noted above, employment in traditionally industrial industries such as manufacturing fell sharply between 2011-2016 and is likely to decrease further in the future. However, this does not mean that there is not a continuing need and demand for industrial land in the Newcastle LGA.

Industrial precincts in the Newcastle LGA are home to businesses of a wide variety of types and from a wide variety of industry sector classifications. While employment in the manufacturing and transport and warehousing sectors is expected to decline, employment is expected to grow in other sectors which also have a strong presence in industrial areas. At the same time, increasing automation will mean that fewer workers are required in many businesses even if their floorspace requirement remain the same (although this has not been explicitly modelled in this report). As a result, continued growth in Newcastle’s population and economy in the future is likely to increase overall demand for floorspace in industrial precincts. As noted above, there is enough capacity to accommodate this growth within current planning controls.

In this context, it is important to consider whether the available industrial precincts are well suited to their future roles and the kinds of land and floorspace which are likely to be in demand. This is particularly important given the difference in expected demand for different
kinds of industrial floorspace, with demand expected to increase for light industrial premises but to shrink for heavy industrial premises.

Factors driving industrial business location

As noted in Section 4.3, industrial precincts and uses in Newcastle can be broadly categorised into light industrial, strategic industrial, subregional activities, remnant industrial sites and sites associated with the Port of Newcastle. The two most common of these are light industrial and strategic industrial, which could be considered to comprise freight and logistics and other uses. Offices are also located in some industrial precincts (for example Mayfield West).

Different factors make a precinct suitable for different kinds of industrial uses. These will drive businesses to locate in particular precincts, increasing demand for land and premises. A selection of such attributes is shown in Table 30. The employment precincts with substantial development capacity are rated qualitatively on these attributes in Table 31 against all industrial land in the Newcastle LGA.

**TABLE 30: FACTORS WHICH INFLUENCE THE SUITABILITY OF INDUSTRIAL PRECINCTS**

<table>
<thead>
<tr>
<th>Industrial type</th>
<th>Access to major roads</th>
<th>Proximity to Port</th>
<th>Proximity to other industrial businesses</th>
<th>Proximity to population</th>
<th>Proximity to Newcastle City Centre</th>
<th>Public transport accessibility</th>
<th>Lot sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic industrial – freight and logistics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Large</td>
</tr>
<tr>
<td>Strategic industrial – other</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td>Large</td>
</tr>
<tr>
<td>Light industrial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Small-medium</td>
</tr>
<tr>
<td>Office</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Medium</td>
</tr>
</tbody>
</table>

* - note that some other strategic industrial uses may also need to be located near the Port

**TABLE 31: ATTRIBUTES OF INDUSTRIAL PRECINCTS WITH FUTURE DEVELOPMENT POTENTIAL**

<table>
<thead>
<tr>
<th>Employment precinct</th>
<th>Access to major roads</th>
<th>Proximity to Port</th>
<th>Proximity to other industrial businesses</th>
<th>Proximity to population</th>
<th>Proximity to Newcastle City Centre</th>
<th>Public transport accessibility</th>
<th>Lot sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of Newcastle land</td>
<td>Good</td>
<td>Very good</td>
<td>Moderate</td>
<td>Poor</td>
<td>Moderate</td>
<td>Poor</td>
<td>Large</td>
</tr>
<tr>
<td>Beresfield</td>
<td>Very good</td>
<td>Moderate</td>
<td>Good</td>
<td>Moderate</td>
<td>Poor</td>
<td>Poor</td>
<td>Medium-Large</td>
</tr>
<tr>
<td>Hexham</td>
<td>Good</td>
<td>Good</td>
<td>Moderate</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>Large</td>
</tr>
<tr>
<td>Mayfield West</td>
<td>Good</td>
<td>Very good</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Poor</td>
<td>Medium</td>
</tr>
</tbody>
</table>

All of the precincts with development capacity have good accessibility to major roads and ports, and Beresfield has good accessibility to other industrial businesses. This makes these precincts relatively appropriate for strategic industrial uses, which will include the heavy industrial demand and some of the light industrial demand identified in Table 29. However,
they are less appropriate for light industrial uses than the smaller employment precincts which are distributed across the established parts of the Newcastle LGA.

Directions for local planning

Following from the above discussion, it is evident that:

- There is enough capacity in existing zoned areas which are suitable for strategic industrial uses to accommodate demand for heavy industry and freight and logistics uses.
- Some of the expected increase in demand for light industrial uses can be accommodated in Mayfield West and Beresfield, but these precincts will not provide the small lots distributed throughout the Newcastle LGA near the existing population and other businesses which allows light industrial precincts to service the local population and support the local economy.
- The identified precincts are not particularly suitable for office development, but the presence of offices in the Mayfield West and Warrabrook Precinct suggests that office development will continue to occur in this area in competition with the Newcastle City Centre.

As a result of the differences of these results for different kinds of industrial demand, Council should have different plans for the future uses of industrial precincts depending upon their current status:

- Existing light industrial precincts distributed through the LGA should be protected and retained to continue to provide services to the local population and businesses and to secure their continued importance to the local economy as demand increases.
- There is enough capacity for strategic industrial land under existing planning controls, and these will likely continue to develop to meet any additional demand.
- Large remnant industrial sites housing large manufacturers may become vacant in the future if manufacturing employment continues to decline. Redevelopment of these sites to may be appropriate accommodate light industrial uses, other employment uses, or non-employment uses if required for development feasibility. The land in these sites may be contaminated and require costly remediation, and so the appropriateness of each use will be influenced by development feasibility.
- The land around the Port of Newcastle covered by the Three Ports SEPP should continue to be managed in consultation with the Port of Newcastle, the Department of Planning, Industry and Environment and Transport for NSW given its strategic importance. Current projections do not indicate sufficient industrial floorspace demand for large parts of this land to be developed for general industrial purposes, but an expansion of the Port of Newcastle could change the local industrial landscape and would have substantial land requirements.

8.4 The future of Newcastle City Centre

Newcastle City Centre is the primary regional centre for the lower hunter region. It contains a range of services, a retail centre and the largest concentration of employment in the area. It has a relatively high proportion of knowledge intensive jobs, a traditional City Centre environment and high levels of public transport connectivity. This makes it the most suitable location in the LGA and region for commercial development.

Commercial and other developments have been occurring recently around Newcastle Interchange and in the Honeysuckle area, indicating some development momentum. Newcastle has been attempting to attract significant commercial development for some time, and as noted in Section 8.2 there are mixed indicators for the success of the Newcastle Economy in transitioning towards a knowledge based economy. On this basis, Council should seek to build on existing development momentum in Newcastle City Centre, both for high density residential and mixed-use development and for purely commercial development. There is likely to be only a market of a limited size for most of these kinds of developments.
and distributing throughout the LGA’s centres could limit the prospects of Newcastle City Centre and consequently the economic transition of the LGA.

**Retail performance**

There is some evidence that retail in the Newcastle City Centre is not performing well. While the eastern end of the Centre used to be the major retail centre for Newcastle and the surrounding region, it has declined in importance with the advent of car-based shopping centres like those in Kotara, Charlestown and Glendale. While these other centres have broad retail mixes, retail provision in the Newcastle City Centre is dominated by hospitality.

There are now almost no retail anchors in the eastern end of the City Centre and there are high levels of vacancies in some areas. This is the problem that Renew Newcastle responded to.

SGS’s retail modelling has shown an increase in retail floorspace demand of approximately 35,000 sqm of retail floorspace in the Newcastle City Centre. As noted in Section 7.1, this depends upon the retail system currently being close to supply-demand balance. Given the issues faced by retailers in the Newcastle City Centre, there is likely to be a current oversupply of floorspace. For this reason, the modelled increase in demand should be interpreted as an improvement in retail turnover which will improve the viability of retailing in Newcastle City Centre rather than as new floorspace which must be delivered.

The success of centres like Kotara at the expense of Newcastle City Centre demonstrates their increased competitiveness at attracting consumers for regular shopping. This follows from their easy accessibility by car, available parking and retail concentration. Newcastle City Centre is likely to remain uncompetitive in these attributes in the future, and so should not seek to replicate the retail offering in large car-based shopping centres. Instead, Council should plan for it to exploit its retail competitive advantages.

**Competitive offer**

The main point of difference between the Newcastle City Centre and other large retail centres nearby is Newcastle City Centre’s urban amenity and character, which contrasts with the more suburban and car-based designs and characters of many other competing centres like Kotara. More specifically, Newcastle’s advantages include:

- A historic centre with a strong built form character
- Vibrancy as a result of its hospitality focus,
- A broad mix of uses including a large scale of business activity, providing activation at multiple times of the day,
- Its position next to beaches, Fort Scratchley and significant open space, and
- Its proximity to a wide range of social infrastructure and services
- Its cultural precinct, including the civic theatre, art gallery and museum

These features should be retained and leveraged in Newcastle, while significant developments with a hospitality focus elsewhere have the potential to erode Newcastle City Centre’s point of difference.

Newcastle City Centre’s unique attributes lend themselves to a future as a lifestyle destination with a retail focus on hospitality, leisure, provision for local workers and boutique retail experiences which are not likely to be offered in large stand-alone shopping centres. This focus offers better prospects for the City than trying to compete with Kotara, Charlestown and Glendale as a broad-based retail centre.

A future role as a historic centre with a hospitality and boutique retail focus would be supported by increased mixed-use development, which would increase the vibrancy of the centre. It would also position the Newcastle City Centre to become more of a destination for tourists, increasing the ability of the Centre to leverage its position near tourist destinations such as the Hunter Valley. If the proposed cruise ship terminal development occurs, this
would support an expanded tourism role, although this development may not occur for some time.

Newcastle City Centre evolving an identity as a vibrant and high amenity centre would also create economic opportunities in the LGA more broadly. As noted in Section 5.2, attracting students and retaining them in the area after their study, or enticing them to move back later, has the potential to develop the local economy and assist with its transition towards a knowledge basis. Creating high amenity centres which appeal to young people is critical to this aim.

**Prospects for different parts of the City**

The conversion of the Newcastle Railway Line to light rail, and current trends in the development of the Newcastle Centre have potential ramifications for the development of different parts of the City Centre and how they develop.

Newcastle City Centre has an irregular shape, with a distance of around 2.5km from Newcastle Interchange to the former Newcastle Train Station, and the centre only several hundred metres wide in places. This has the potential to create stratification in the success of different parts of the City.

Commercial development appears to be currently moving broadly west in the Newcastle City Centre towards Newcastle Interchange. At the same time, the former retail centre in the eastern end of the City is declining in retail significance but developing a hospitality role. There is a concentration of civic functions in the middle of the City, but the Council offices are moving to the western end. When put together, these factors create the threat that Newcastle could turn into two cities: the successful western end near the Train Station, with a business focus, and the no longer vibrant eastern end with poorly performing retail and few activities to attract people.

Combating the threat of Newcastle’s western end developing at the expense of other areas will require an understanding of the potential identities of different parts of the City, and how they could complement each other. This is depicted below, with precinct identities intended to be reinforced by the Newcastle Urban Renewal Strategy.

Newcastle’s West End is developing as a commercial centre and this should continue to be encouraged. As more businesses move in, there will be scope for retail and services with a focus on serving the local workers. Developments in the West End should not seek to replicate this role as the dining and entertainment centre of Newcastle.

The East End is adjacent to the beach and open space and has the highest amenity in terms of built form, urban design and access to hospitality. High density mixed-use development is planned around the Hunter Street Mall. Along with tourism developments, sympathetic mixed-use would cement the East End’s evolving role as a lifestyle destination, replacing its former status as the primary retail and business centre. The East End is also the nightlife centre of the region, with particular opportunities in the area between the East End and the Centre where there are educational uses and less residences.
The current university building in the centre of the City, along with the Civic Centre, Museum, Art Gallery and City Library, create a strong identity for this area. People from educational institutions could access the hospitality offerings of the eastern end of the city and in Cooks Hill, while people from businesses to the west could access this area’s civic institutions. A new five star hotel is planned in the former City of Newcastle offices.

Rapid public transport connections between the different parts of the City will cause them to benefit from each other. In the longer term, divisions between them could become less noticeable, with the Centre sharing a mixed-use, hospitality and leisure role with the East End and commercial and worker-serving retail in both the West End and Centre.

8.5 The future of other retail centres

Kotara
As noted in Section 6.1, Kotara is currently the largest retail centre in the Newcastle LGA and provides a broad mix of retail floorspace types. It contains a large homemaker centre located north of Westfield Kotara. The Greater Newcastle Metropolitan Plan identifies Kotara as a catalyst precinct with a direction to “facilitate transformation of the Precinct from large format retail to a mixed-use town centre with diverse uses, including office and shop top housing”.

Kotara is a major retail centre in the Newcastle LGA with good accessibility by road. However, it does not provide a broad range of services and is co-located with a relatively limited amount of social infrastructure. As such, it should retain its current stand-alone centre role and should not seek to develop a broader centre role.

Large format retail
The Kotara Homemaker Centre currently serves an important retailing role in the Newcastle LGA and the surrounding region. It contains by far the largest concentration of household goods floorspace in the area, as shown in Table 32. It is also the only consolidated homemaker centre which facilitates a broad range of comparison shopping in a single destination. This is evident from the design of the other nearby large concentrations of household goods floorspace, which are shown in
Figure 31. In the face of competition from online retailing, consolidated homemaker centres which are co-located with a limited range of other uses are likely to remain more competitive than distributed large-format retail intermixed with light industrial premises.

<table>
<thead>
<tr>
<th>Centre</th>
<th>Supermarket</th>
<th>Other Food</th>
<th>Hospitality and Services</th>
<th>Clothing and Soft Goods</th>
<th>Household Goods</th>
<th>Other Retail</th>
<th>Department Stores</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kotara</td>
<td>7,662</td>
<td>2,605</td>
<td>6,749</td>
<td>21,652</td>
<td>46,806</td>
<td>15,464</td>
<td>27,039</td>
<td>127,976</td>
</tr>
<tr>
<td>Bennetts Green</td>
<td>-</td>
<td>-</td>
<td>110</td>
<td>-</td>
<td>20,157</td>
<td>-</td>
<td>-</td>
<td>20,266</td>
</tr>
<tr>
<td>Newcastle City Centre</td>
<td>6,369</td>
<td>7,453</td>
<td>41,976</td>
<td>6,422</td>
<td>19,280</td>
<td>6,050</td>
<td>15,062</td>
<td>102,612</td>
</tr>
<tr>
<td>Warners Bay</td>
<td>-</td>
<td>124</td>
<td>1,064</td>
<td>200</td>
<td>12,569</td>
<td>-</td>
<td>1,064</td>
<td>15,021</td>
</tr>
</tbody>
</table>

SGS’s retail modelling predicts that the demand for household goods retailing space will increase by 30% between 2016-2036. While the actual amount may be lower due to an increased market share from online retailing, it would not make sense to plan for the loss of a large amount of household goods floorspace in this context.

Mixed-use town-centre style developments are generally incompatible with large format retail centres. Large format centres require large amounts of carparking and easy access from major roads, both of which are evident at Kotara. As a result, their design is generally focused around the car and is not appropriate for mixed-use. While it would be possible to redevelop existing surface level car parks with residential apartments above them, these apartments would have low levels of amenity from the surrounding environment and large format retail buildings. Such development would also be likely to generate increased traffic conflicts which could harm the viability of the large format centres. It would also be highly difficult and expensive to build apartments on top of the large-format retail buildings themselves, as their open plan showroom-style design is incompatible with the frequent structural supports needed for residential spaces above.

Kotara does not have the characteristics which would support a good mixed-use centre. The Westfield and home-market centre are separated from the Train Station and so have relatively limited public transport access. There are few existing services, social infrastructure or high amenity public domain elements which could be built on as the centre develops. The road network does not have a fine grain, and walkability to the surrounding area is relatively limited. Other centres like the Newcastle City Centre, Hamilton and Broadmeadow, have many more of the elements required to make a centre successful.

Given the important retail role of Kotara, including of the home-maker centre, the likely difficulty and conflict created by mixed-use redevelopment and the lack of attributes which would indicate opportunities to create a successful and high-amenity centre, Kotara should retain its current retail role in the future and should not be redeveloped as indicated in the Greater Newcastle Metropolitan Plan. Any loss of the current retail function could limit the ability of the population to access large-format retail facilities and increase demand elsewhere in locations which are currently providing important light industrial premises. In addition, higher density development momentum should be concentrated in the Newcastle City Centre as discussed in Section 8.4.
Other retail development

SGS’s modelling indicated a demand for around 41,000sqm of additional retail floorspace in the Inner West Region between 2016-2036. This may be an overestimation of likely increases in demand as high levels of retail provision currently may indicate an oversupply of retail floorspace. In addition, redevelopment is intended to occur in the catalyst precinct of Broadmeadow and in B4 zones in Adamstown and Hamilton.

After development elsewhere in the Inner West Region, there may some be additional demand for additional retail development at Kotara. Kotara is in direct competition with Newcastle City Centre as a retail destination, and while the Newcastle City Centre is likely to undergo a transition in its retail role in the future towards a more specialised offering. However, its overall retail viability may be impacted by expansion at Kotara, particularly if it focuses on the dining and hospitality sector which is a strength of the Newcastle City Centre. Any such negative impacts would need to be carefully managed.
**Town Centres**

There are six town centres identified in Newcastle’s previous retail hierarchy: The Junction, Adamstown, Hamilton, Waratah, Mayfield, Jesmond and Wallsend. Their retail floorspace and anchor retailers are shown in Table 33. That are all large centres with significant amounts of retail floorspace and anchor supermarkets except for Adamstown, which is a small centre.

Given the increasing retail floorspace turnover expected across the Newcastle LGA in the future, the large town centres of The Junction, Hamilton, Waratah, Mayfield, Jesmond and Wallsend are likely to continue to perform well. The presence of large supermarkets will ensure foot traffic remains high in the face of potential increases in retail market share from online retail.

Adamstown contains areas zoned B4 which would allow more substantial development. However, no mixed-use developments have yet occurred, indicating a potential lack of demand or feasibility. The Centre is located around halfway between Kotara and Broadmeadow, which are both catalyst precincts under the Greater Newcastle Regional Plan. Kotara is a very large retail centre, and an additional centre is intended to be developed at Broadmeadow. There is unlikely to be sufficient demand for a new large retail centre at Adamstown, and so it should not be considered as a current or potential future town centre.

<table>
<thead>
<tr>
<th>Centre Name</th>
<th>Region</th>
<th>Retail floorspace</th>
<th>Supermarkets</th>
<th>Department stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Junction</td>
<td>Inner South</td>
<td>10,471</td>
<td>Coles</td>
<td></td>
</tr>
<tr>
<td>Adamstown</td>
<td>Inner West</td>
<td>629</td>
<td>Foodworks</td>
<td></td>
</tr>
<tr>
<td>Hamilton</td>
<td>Inner West</td>
<td>16,759</td>
<td>ALDI</td>
<td></td>
</tr>
<tr>
<td>Waratah</td>
<td>Inner West</td>
<td>14,081</td>
<td>Coles, Kmart</td>
<td></td>
</tr>
<tr>
<td>Mayfield</td>
<td>Inner North</td>
<td>14,063</td>
<td>Woolworths, ALDI</td>
<td></td>
</tr>
<tr>
<td>Jesmond</td>
<td>Outer</td>
<td>20,945</td>
<td>Woolworths, ALDI, Big W</td>
<td></td>
</tr>
<tr>
<td>Wallsend</td>
<td>Outer</td>
<td>18,223</td>
<td>Coles, ALDI</td>
<td></td>
</tr>
</tbody>
</table>

**Broadmeadow**

Broadmeadow is identified as a catalyst precinct in the Greater Newcastle Metropolitan Plan. The Plan contains actions to expand the economic role of the area west of the Train Line, including the B5 zone. It also aims to provide a mix of uses facilitating growth and change in surrounding centres and residential areas, with office, retail and medium density housing around the Nineways. The zoning framework is already set up to facilitate this outcome, but no redevelopment has yet occurred, indicating a likely lack of feasibility.

As noted above, in the short term high density mixed-use development should be prioritised in Newcastle City Centre and should not be spread throughout the LGA. Council should prioritise any interventions to improve local amenity and development feasibility in the Newcastle City Centre. In the medium-longer term, a centre development in Broadmeadow may be appropriate. As Broadmeadow is near other centres including Hamilton and Newcastle City Centre, any centre developed here should serve the local population rather than having a broader focus.

**Other centres**

SGS’s modelling has calculated likely future demand for 69,641 sqm of additional retail floorspace in Newcastle’s Centres outside of the Newcastle City Centre between 2016-2036. As noted in Section 7.1, this may overestimate actual demand if there is an oversupply of retail floorspace currently. In addition, if online retailing captures an increasing market share at the expense of local retailers, this could impact on the performance of bricks and mortar stores and decrease likely future demand.
Local supermarkets are likely to ensure local centres remain competitive and that foot traffic is maintained in the face of online retailing and competition from larger centres which are convenient to access by car. An anchor retailer like a supermarket can support other retailers and increase the viability of the centre overall.

Those centres without a supermarket but with a large amount of other floorspace are more vulnerable to possible future changes in consumer behaviour or competition from online retailing. The performance of these local and neighbourhood centres may decline in the future, in which case investment in the public domain or increased integration of social infrastructure may improve the retail experience and increase food traffic.

Table 34 provides an outline of how the 69,641 sqm of potential additional retail demand in Newcastle’s centres could be distributed to centres throughout the LGA. This provides a guide to local planning and how centres may develop in the future, but as modelling reflects current assumptions and projections should not be treated as an accurate picture of how centres must develop. A more important consideration in assessing any unexpected large retail applications is their impact on the intended roles and functions of each nearby centre.

The current hierarchy and pattern of retail provision is likely to persist into the future given the established nature of the Newcastle LGA, aside from potential declines in performance of small centres without a supermarket and some reconfiguration of larger centres in response to competition from online retail. There are small and large centres distributed throughout the LGA aside from the Outer Region where there are few smaller centres, providing good access to local retail for the population. As such, the anticipated future distribution of retail demand should roughly correspond with the current sizes of retail centres.

In some cases, there will be opportunities to improve the function and viability of local centres through retail developments which exceed a proportional distribution of increased floorspace demand from the associated planning region. Some of these have already been identified in existing policies, such as the mixed-use renewal corridors around Hamilton, Adamstown, Broadmeadow and Mayfield. These are reflected in the distribution below.
<table>
<thead>
<tr>
<th>Centre</th>
<th>2016 Floorspace</th>
<th>Increase to 2036</th>
<th>Current centre classification</th>
<th>Proposed centre classification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inner North Region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mayfield</td>
<td>14,063</td>
<td>4,000</td>
<td>Town Centre</td>
<td>Town Centre</td>
</tr>
<tr>
<td>Islington</td>
<td>5,703</td>
<td>1,000</td>
<td>Local Centre</td>
<td>Local Centre</td>
</tr>
<tr>
<td>Warabrook</td>
<td>3,522</td>
<td>500</td>
<td>Local Centre</td>
<td>Local Centre</td>
</tr>
<tr>
<td>Stockton</td>
<td>2,744</td>
<td>1,000</td>
<td>Local Centre</td>
<td>Local Centre</td>
</tr>
<tr>
<td>Carrington</td>
<td>1,353</td>
<td>1,000</td>
<td>Local Centre</td>
<td>Local Centre</td>
</tr>
<tr>
<td>Other</td>
<td>5,453</td>
<td>1,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>32,838</td>
<td>8,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inner South Region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Junction</td>
<td>10,471</td>
<td>2,500</td>
<td>Town Centre</td>
<td>Town Centre</td>
</tr>
<tr>
<td>Glebe Rd Merewether</td>
<td>1,831</td>
<td>200</td>
<td>Neighbourhood Centre</td>
<td>Neighbourhood Centre</td>
</tr>
<tr>
<td>Merewether</td>
<td>1,379</td>
<td>400</td>
<td>Neighbourhood Centre</td>
<td>Neighbourhood Centre</td>
</tr>
<tr>
<td>Cooks Hill (Darby St South)</td>
<td>2,170</td>
<td>500</td>
<td>Neighbourhood Centre</td>
<td>Neighbourhood Centre</td>
</tr>
<tr>
<td>Merewether Beach</td>
<td>469</td>
<td>250</td>
<td>Neighbourhood Centre</td>
<td>Neighbourhood Centre</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16,320</td>
<td>3,850</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inner West Region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kotara</td>
<td>127,976</td>
<td>15,000</td>
<td>Stand-along shopping centre</td>
<td>Stand-along shopping centre</td>
</tr>
<tr>
<td>Waratah</td>
<td>14,081</td>
<td>4,000</td>
<td>Town Centre</td>
<td>Town Centre</td>
</tr>
<tr>
<td>Hamilton</td>
<td>16,759</td>
<td>5,000</td>
<td>Town Centre</td>
<td>Town Centre</td>
</tr>
<tr>
<td>New Lambton</td>
<td>8,627</td>
<td>3,000</td>
<td>Local Centre</td>
<td>Local Centre</td>
</tr>
<tr>
<td>Broadmeadow</td>
<td>6,683</td>
<td>5,000</td>
<td>Local Centre</td>
<td>Developing Local Centre</td>
</tr>
<tr>
<td>Broadmeadow (Ailsa Road)</td>
<td>4,805</td>
<td>750</td>
<td></td>
<td>Local Centre</td>
</tr>
<tr>
<td>Lambton</td>
<td>2,664</td>
<td>750</td>
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<td>Local Centre</td>
</tr>
<tr>
<td>Georgetown</td>
<td>1,476</td>
<td>500</td>
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<td>Local Centre</td>
</tr>
<tr>
<td>Waratah (Station Street)</td>
<td>1,135</td>
<td>500</td>
<td>Neighbourhood Centre</td>
<td>Neighbourhood Centre</td>
</tr>
<tr>
<td>Adamstown</td>
<td>629</td>
<td>2,000</td>
<td>Town Centre</td>
<td>Developing Local Centre</td>
</tr>
<tr>
<td>Other</td>
<td>14,425</td>
<td>4,400</td>
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<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>199,259</td>
<td>40,900</td>
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<td></td>
</tr>
<tr>
<td><strong>Outer Region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jesmond</td>
<td>20,945</td>
<td>6,000</td>
<td>Town Centre</td>
<td>Town Centre</td>
</tr>
<tr>
<td>Wallsend</td>
<td>18,223</td>
<td>5,000</td>
<td>Town Centre</td>
<td>Town Centre</td>
</tr>
<tr>
<td>Fletcher</td>
<td>5,666</td>
<td>2,000</td>
<td>Neighbourhood Centre</td>
<td>Local Centre</td>
</tr>
<tr>
<td>Elermore Vale</td>
<td>4,459</td>
<td>1,000</td>
<td>Local Centre</td>
<td>Local Centre</td>
</tr>
<tr>
<td>Beresfield</td>
<td>3,469</td>
<td>1,000</td>
<td>Local Centre</td>
<td>Local Centre</td>
</tr>
<tr>
<td>Maryland</td>
<td>2,248</td>
<td>1,000</td>
<td>Local Centre</td>
<td>Local Centre</td>
</tr>
<tr>
<td>Shortland</td>
<td>1,078</td>
<td>500</td>
<td>Neighbourhood Centre</td>
<td>Neighbourhood Centre</td>
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<tr>
<td>Other</td>
<td>518</td>
<td>0</td>
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<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>56,605</td>
<td>16,500</td>
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</tr>
</tbody>
</table>
9. EMPLOYMENT STRATEGY

9.1 Centres

Centres Hierarchy

Planning principles

- **Maintain centres planning framework**
  The centres planning framework provides a valuable indication of what Council considers the future roles and functions of each centre in the Newcastle LGA to be. This guides future land use planning.

  SGS’s modelling predicts an increase in retail demand in the Newcastle LGA as a result of population growth. Small increases in floorspace may be permitted in most centres, with larger increases in centres targeted for renewal through local planning.

- **Provide flexibility in permitted uses and principal planning controls**
  As online retailing continues to grow in market share, retail centres are diversifying their uses to maintain foot traffic and to take on a broader experience-based role as centres of the local community. Department stores and stores which sell easily compared goods available from many sources online are particularly vulnerable and may require reconfiguration in the future.

  Transitions in the uses and functions of retail centres should be encouraged through flexibility in planning controls, with periodic reviews of principal planning control and permissible uses required.

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
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</thead>
<tbody>
<tr>
<td>Action 1</td>
<td>Plan for small increases in retail floorspace across Newcastle’s centres</td>
</tr>
<tr>
<td>Action 2</td>
<td>Maintain flexibility in planning controls for local centres to allow uses to transition in response to the changing retail landscape</td>
</tr>
<tr>
<td>Action 3</td>
<td>Continue to improve the amenity of local centres through infrastructure investment, increasing their ability to compete with larger centres and online retail</td>
</tr>
</tbody>
</table>

**Newcastle City Centre**

Newcastle City Centre should continue to be the major regional centre for the Newcastle LGA. It should be the primary business and entertainment centre of the LGA, with a vibrant mix of uses and high amenity built form, next to the Hunter River, beaches and substantial open space.

Planning principles

- **The western end should build on its current commercial role** through additional commercial development with supporting retail and services. This area should be the primary destination for commercial development in the Newcastle LGA in the foreseeable future. Some retail development is appropriate, this would improve amenity and the competitive offer of the CBD for commercial office development. Retail activity should focus on providing services to local workers and visitors rather than replicating the retail
offer in other parts of the City.

- **The eastern end should become a mixed-use precinct** providing boutique retail experiences, with a concentration levels of hospitality and leisure facilities. This should be the primary destination for mixed-use development and high density residential development in the Newcastle LGA in the short-medium term. Some loss of the overall quantum of retail floorspace may be reasonable given the shift in retail focus of the Newcastle City Centre.

- **The centre of the City should consolidate its civic and educational role**, benefiting from its accessibility from the east and the west. This is the ideal location for new educational developments, which will activate surrounding areas.

- **Encourage commercial development**
  There is a lack of A-grade office space in the Newcastle City Centre. As these developments require pre-commitments from tenants, this hampers the commercial development market. Where possible, Council should seek to facilitate commercial development and remove any obstacles to it.

- **Additional convenience-based retailing** should be provided throughout Newcastle City Centre, increasing its retail amenity for local workers and residents. This requires larger floorplates to be delivered in ground floor retail developments to allow small supermarkets and similar uses to be delivered while enhancing the fine grain character of the existing centre.

- **Provide flexible ground floor spaces in mixed-use developments**
  Many mixed-use developments across Australia have small shops at ground level which are not suited to a wide variety of uses. Their rents are high to maintain loan to value ratios and they remain vacant for long periods of time, damaging the reputation of centres.

  To prevent this occurring, mixed-use development in the Newcastle City Centre should provide flexible ground floor spaces. These should be a variety of sizes, with some larger floorplates suitable to accommodate gyms or other services which require large spaces. In some cases car parking may be required. If the uses of these spaces can be evolved over time, there will be more scope to change uses in response to the evolving retail status of the Newcastle City Centre.

- **Consolidate retail energy along the current retail spine**
  Newcastle City Centre has a strong retail spine along Hunter Street spanning the length of the City, with some additional fine-grain retail uses on King Street and Watt Street in the East End.

  Developments should cement the status of Hunter Street as a retail, hospitality and entertainment destination and artery by focusing ground floor retail provision on it. Retail spaces may be appropriate elsewhere if they activate open space or provide a kind of shop which is lacking in the area, but in general significant retail development should not be encouraged off the retail spine unless it is replacing existing premises.

- **Connections to other centres**
  The Newcastle City Centre should be well connected to other parts of the LGA by public transport, allowing people to easily access it despite its limited car parking. Connections are important between the centre and eastern end of the City to other local and population centres rather than only to Newcastle Interchange in order to make it
convenient to access the retail facilities in the eastern end.

- **Improved connections between different parts of the City Centre**
  The removal of the Newcastle Rail Line creates opportunities to improve connections between the Honeysuckle Precinct, the Hunter River, and the parts of the City Centre south of the former railway line. This should take the form of both pedestrian connections and urban design which creates the perception of a continuous urban fabric.

Improving connections between the different parts of the City Centre would encourage people working in or visiting the Honeysuckle Precinct to visit the greater number of hospitality and retail uses south of the former railway line. It will also reconnect areas south of the former railway to the natural environment of the river, improving urban amenity.

**Encourage the night-time economy**
Maintaining a strong night-time economy will be a key part of building Newcastle City Centre’s (and particularly the East End’s) reputation as a vibrant entertainment area which people travel to at multiple times of the day.

Nurturing the night-time economy requires flexibility in the planning system to ensure that businesses are able to open for extended hours and that new restaurants and bars can open. Minimising impacts from new mixed-use and residential developments on existing uses will also be important.

<table>
<thead>
<tr>
<th>Action</th>
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<tbody>
<tr>
<td>Action 4</td>
<td>Consult with commercial landlords and developers and where possible remove impediments to commercial development</td>
</tr>
<tr>
<td>Action 5</td>
<td>Limit new retail provision in the Western end of the City Centre to facilities catering to local workers</td>
</tr>
<tr>
<td>Action 6</td>
<td>Continue to invest in the amenity of the Eastern End of the Newcastle City Centre to facilitate its transition to a lifestyle precinct</td>
</tr>
<tr>
<td>Action 7</td>
<td>Review development controls for ground floor retail in mixed-use developments to provide flexible spaces and focus retail energy along the existing retail spine</td>
</tr>
<tr>
<td>Action 8</td>
<td>Advocate to Transport for NSW for improved public transport connections from Newcastle City Centre to other parts of the Newcastle LGA</td>
</tr>
<tr>
<td>Action 9</td>
<td>Continue to improve urban connections across the former railway line from the Honeysuckle Precinct and Hunter River to the rest of the Newcastle City Centre</td>
</tr>
<tr>
<td>Action 10</td>
<td>Review planning controls to ensure that new residential and mixed-use developments are designed to minimise potential impacts on night-time economy uses</td>
</tr>
<tr>
<td>Action 11</td>
<td>Review planning controls and approval processes to allow longer opening hours for businesses in the Newcastle City Centre</td>
</tr>
</tbody>
</table>

**Kotara**
Kotara should retain its current retail role as a large stand-alone shopping centre which provides retail access to people from throughout the LGA. Kotara competes with Newcastle City Centre as a retail destination. If it takes on a more significant and broader centre role in the future it will also compete to be the primary centre in the LGA, which could jeopardise plans for continued development of the role of the City Centre.

The home-maker centre is the only large and consolidated large-format household goods retailing centre in the Newcastle region. This is an important retail role providing a
comparison-shopping experience that can compete with online retailing.

Planning principles

▪ Retain the current retail role for both Kotara Westfield and the Homemaker Centre, but do not allow a transition to a higher order centre

Kotara does not have the features required to develop a great and sustainable town centre. It should continue to operate as large-format retail centre rather than transitioning to a mixed-use town centre.

Changes to the planning framework may be required to prohibit residential and office uses in Kotara in order to maintain its current role.

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
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</thead>
<tbody>
<tr>
<td>Action 12</td>
<td>Retain the current role of Kotara as an important shopping centre which is predominately car-based, proving convenient retail access to the local population</td>
</tr>
<tr>
<td>Action 13</td>
<td>Permit expansion of retail provision in Kotara only if it does not harm to role or function of other centres, particularly Newcastle City Centre</td>
</tr>
<tr>
<td>Action 14</td>
<td>Advocate to the Department of Planning, Industry and Environment to retain the current role of the Kotara Homemaker Centre in long term strategic plans given its lack of suitability for a mixed-use town centre</td>
</tr>
<tr>
<td>Action 15</td>
<td>Investigate prohibiting residential and large office developments at Kotara</td>
</tr>
</tbody>
</table>

Renewal corridors and new centres

The City of Newcastle is planning for a new centre to be delivered in Broadmeadow around the Nineways, and for renewal corridors with mixed-use development along major roads in Adamstown, Hamilton, Islington and Mayfield.

In the short term, mixed-use development in centres with high density residential components should be relatively limited outside of the Newcastle City Centre, concentrating the market for this kind of housing product on the City Centre (particularly the eastern end) where it forms an important part of the City's evolving identity.

Planning principles

▪ Provide a local population-focused centre in Broadmeadow

Broadmeadow is near several other large centres including Hamilton, Adamstown, Kotara and the Newcastle City Centre, and so there is unlikely to be enough retail demand for a large new centre. Rather, a local centre servicing the needs of the local population should be delivered in concert with additional housing development. This would include a small-medium sized supermarket, specialty retail and hospitality premises but should not include a department store or discount department store or a quantum of floorspace which would compete with town centres like Hamilton.

▪ Mixed-use development in renewal corridors reinforcing the existing structure of centres

Mixed-use development around existing centres in renewal corridors should provide limited amounts of new retail space focused around the retail corridors extending from the existing centres. This has the potential to build on the strengths of centres and to fill any gaps within them, while not diluting their current retail focus.

At Adamstown, mixed-use development north of Glebe Road along Brunker Road could extend the existing centre, allowing it to take an expanded retail role to serve the local
population. However, this should only occur in mixed-use developments which also contain residential components, increasing retail demand.

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
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</thead>
<tbody>
<tr>
<td>Action 16</td>
<td>Work with developers and landowners to facilitate development of a new local centre in Broadmeadow with a local population-serving focus</td>
</tr>
<tr>
<td>Action 17</td>
<td>Ensure that new retail development at Broadmeadow does not harm to role or function of other centres, particularly Hamilton and Newcastle City Centre</td>
</tr>
<tr>
<td>Action 18</td>
<td>Review land use controls in renewal corridors to facilitate a modest amount of mixed-use development which extends and strengthens local centres</td>
</tr>
</tbody>
</table>

### 9.2 Industrial Precincts

**Planning principles**

- **Consider industrial land operational need, not just its employment generation.** Employment projections are just one indicator that define future need for industrial space. Functions such as warehousing, storage units and distribution centres may have low levels of employment and therefore employment growth, yet their function is a critical one in serving business and consumer networks. This should be a consideration in future uses proposed in industrial precincts of the future.

**Light Industrial Precincts**

Light industrial precincts have a vital role servicing the local population and local businesses, as well as supporting higher-order businesses through their role in the local supply chain. These precincts host a wide variety of businesses from multiple industries. Demand for floorspace in these areas is already high and is likely to increase the future.

**Planning principles**

- **Retain and protect light industrial precincts.** All industrially-zoned land in light industrial precincts should be retained and managed to ensure it continues to support a diverse range of industrial and other urban service functions.
- **Manage land use conflicts between light industrial uses and surrounding residences.** While light industrial uses are those with a relatively limited impact on the amenity of other uses, there are likely to be continuing land use conflicts between industrial uses and surrounding residences, for example related to truck movements and noise.

To ensure industrial precincts remain as good neighbours to residential (and even commercial) land uses, consider how any future development faces the adjacent use. Minimising truck movement through residential streets by prioritising movement into internal road networks close to arterial roads can reduce truck traffic. For residentially facing lots, development should consider ‘public facing’ uses such as front of house functions like offices or show rooms, with heavier industrial uses to the rear.

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 19</td>
<td>Retain and protect light industrial precincts, by not supporting any rezoning in these areas away from industrial uses</td>
</tr>
<tr>
<td>Action 20</td>
<td>Investigate the rezoning of the Kotara Homemaker Centre or of other B5 zones to differentiate their uses: Kotara as a large-format retail area and other B5 zones as predominately light industrial precincts with some retail and wholesale</td>
</tr>
<tr>
<td>Action 21</td>
<td>Manage land use conflicts in order to preserve the continued viability of light industrial precincts.</td>
</tr>
</tbody>
</table>
Strategic Industrial Precincts

Strategic industrial precincts provide capacity for new industrial and related uses near major transport infrastructure and the Port of Newcastle. There is enough capacity in these precincts to provide for employment needs until 2036.

Planning principles

- **Continue to support the development and operation of strategic industrial precincts**
  
  Recent sales prices and development trends indicate that there is demand for additional floorspace in the Strategic Industrial Precincts of Beresfield and Mayfield West, and that development is occurring.

- **Plan for a variety of lot sizes in greenfield industrial precincts**
  
  Different industrial uses require different lot sizes and kinds of premises. As demand for light industrial premises increases it will be important that both smaller and larger lots are delivered in greenfield precincts. This appears to be happening currently, with moderate and larger lot sizes in Mayfield West and a mix of small to large lots in Beresfield.

- **Consider uncertainty in projections when planning for industrial land supply**
  
  Current projections show industrial land supply to be sufficient until after 2036. Nonetheless, projections reflect current assumptions and changes in the local economy could cause future land demand to be greater than less than currently anticipated. As a result, land supply and delivery should be reviewed periodically, reflecting the inherent uncertainty in future land demand.

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 22</td>
<td>Review take-up rates and supply of greenfield industrial land, considering the needs of different kinds of industrial uses of a variety of sizes</td>
</tr>
</tbody>
</table>

Remnant Industrial Sites

Remnant industrial sites may become vacant in the future if traditional manufacturing businesses employment continues to decline. In this case redevelopment to facilitate other uses may be necessary. When considering which kinds of uses are allowed, one should consider local feasibility and the remediation expenses of the sites in question as well as the appropriateness of their location for other industrial uses.

Planning principles

- **Encourage redevelopment of remnant industrial uses in urban areas with high levels of amenity to creative employment space**
  
  High amenity urban areas near transport infrastructure are attractive for higher value uses. Redevelopment of these sites for creative and artisanal uses could provide relatively affordable floor space to support small creative businesses. This would encourage former industrial areas to transition to vibrant neighbourhoods.
Prioritise the provision of employment-generating floorspace in any redevelopment which occurs. Space for light industrial services near the population and businesses of the Newcastle LGA are in high demand and should be prioritised when redevelopment of remnant industrial sites is proposed. This would help to meet the forecast increase in demand for light industrial spaces.

In some cases other uses may need to be accommodated on a portion of a site to ensure development is viable. This should be subject to a detailed feasibility assessment.

Minimise displacement of industrial uses
Redevelopment of remnant industrial sites should only be contemplated when it will not cause substantial displacement of industrial uses from the surrounding area and from the Newcastle LGA. To ensure this occurs, any proposed redevelopment should be justified on the basis that:

- The existing building is no longer viable for its current use
- Existing users of the buildings proposed to be redeveloped can relocate elsewhere in the Newcastle LGA
- The development will not cause adverse impacts on surrounding industrial uses.

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
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</thead>
<tbody>
<tr>
<td>Action 23</td>
<td>M-L</td>
</tr>
</tbody>
</table>

Facilitate redevelopment of remnant industrial sites if they are deemed to be no longer viable for heavy industrial uses and this will not result in the displacement of industrial businesses out of the LGA.

9.3 Ports land
The land on which the Three Ports SEPP applies should be managed in consultation with the Port of Newcastle, Department of Planning, Industry and Environment and Transport for
NSW. The land covered by the Three Ports SEPP which is not part of the port provides strategic industrial land whose uses support the operation of the port.

Planning principles

▪ Ensure that development does not curtail the current or future potential operation of the Port of Newcastle
  A variety of land use conflicts could occur as a result of development which could impact on the Port’s operation. These include increased traffic limiting the ability of traffic to and from the Port and constraints on light and noise from Port operations. Development both in the Three Ports SEPP land and nearby should be managed to ensure this does not occur

▪ Preserve land for potential long-term employment opportunities
  Expansions of the Port of Newcastle are proposed but have not been approved by the NSW Government. If these were to occur, they could create opportunities in the freight and logistics industries which would be associated with employment demand in excess of those implied by current projections. The land covered by the Three Ports SEPP would be highly strategic for this purpose.

There is a very large amount of land covered by the Three Ports SEPP, not all of which is likely to be required in the short-medium term. Some development and use of this land may be possible currently if this would not restrict the potential long term use of the land.

▪ Potential uses of the BHP Intertrade site
  The following considerations are relevant to the long-term use of the Intertrade Site in BHP’s former location, shown below:
  ▪ There is enough supply overall of industrial land in the LGA to meet future projections, with land remaining nearby at Mayfield West and the Port of Newcastle proposing to release some of its land for industrial development
  ▪ There is a high level of demand currently for industrial premises, and SGS’s modelling shows increasing demand for light industrial premises. This demand is best suited to being located near populated areas and other industrial businesses, criteria which the Intertrade Site fulfils.
  ▪ Additional freight and logistics opportunities may follow from any expansions of the Port of Newcastle, which would increase land use demand. The Intertrade Site has a highly strategic location for freight and logistics development.
  ▪ Any land uses proposed around the Port of Newcastle should not increase land use conflict with the Port, or other uses associated with it.
FIGURE 33: DEFERRED ZONING ON THE INTERTRADE SITE

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 24 Consult with the Port of Newcastle regarding any proposed developments in land covered by or immediately adjacent to the Three Ports SEPP</td>
<td>S-M-L</td>
</tr>
<tr>
<td>Action 25 Collaborate with the Port of Newcastle, Department of Industry, Planning and Environment and Transport for NSW with regards to any proposed changes to planning controls in land covered by or immediately adjacent to the Three Ports SEPP</td>
<td>S-M-L</td>
</tr>
<tr>
<td>Action 26 Retain land around the Port of Newcastle to preserve future freight and logistics opportunities, in collaboration with relevant stakeholders</td>
<td>S-M-L</td>
</tr>
</tbody>
</table>
### 9.4 Actions table

<table>
<thead>
<tr>
<th>Action</th>
<th>Short-term</th>
<th>Medium-term</th>
<th>Long-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Plan for small increases in retail floorspace across Newcastle’s centres</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Maintain flexibility in planning controls for local centres to allow uses to transition in response to the changing retail landscape</td>
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<td>3</td>
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<td>4</td>
<td>Consult with commercial landlords and developers and where possible remove impediments to commercial development</td>
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</tr>
<tr>
<td>Action</td>
<td>Description</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Facilitate redevelopment of remnant industrial sites if they are deemed to be no longer viable for heavy industrial uses and this will not result in the displacement of industrial businesses out of the LGA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Consult with the Port of Newcastle regarding any proposed developments in land covered by or immediately adjacent to the Three Ports SEPP</td>
<td></td>
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</tr>
<tr>
<td>25</td>
<td>Collaborate with the Port of Newcastle, Department of Industry, Planning and Environment and Transport for NSW with regards to any proposed changes to planning controls in land covered by or immediately adjacent to the Three Ports SEPP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Retain land around the Port of Newcastle to preserve future freight and logistics opportunities, in collaboration with relevant stakeholders</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CCL 10/12/19
EXHIBITION OF DRAFT WESTERN CORRIDOR CONTRIBUTIONS PLAN

Item 98 Attachment A: Draft Western Corridor Section 7.11 Local Infrastructure Contributions Plan 2013

Item 98 Attachment B: Western Corridor Traffic and Transport Study, 2019 (prepared by Bitzios Consulting)

Item 98 Attachment C: Relevant Ministerial - Direction Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012 as amended
CCL 10/12/19
EXHIBITION OF DRAFT WESTERN CORRIDOR CONTRIBUTIONS PLAN

Item 98 Attachment A: Draft Western Corridor Section 7.11 Local Infrastructure Contributions Plan 2013
Draft Section 7.11 Western Corridor
Local Infrastructure Contributions
Plan 2013

(Update December 2019)
<table>
<thead>
<tr>
<th><strong>Policy title</strong></th>
<th>Draft Section 94.7.11 Western Corridor Local Infrastructure Contributions Plan – August 2013 (Update December 2019)</th>
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<tbody>
<tr>
<td><strong>Policy owner</strong></td>
<td>Manager Strategic Planning Services Regulatory, Planning and Assessment</td>
</tr>
<tr>
<td><strong>Prepared by</strong></td>
<td>GLN Planning (updated December 2019 by City of Newcastle)</td>
</tr>
<tr>
<td><strong>Approved by</strong></td>
<td>Approved by Council</td>
</tr>
<tr>
<td><strong>Date approved</strong></td>
<td>26 November 2013</td>
</tr>
<tr>
<td><strong>Commencement Date</strong></td>
<td>13 January 2014</td>
</tr>
<tr>
<td><strong>Version</strong></td>
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<td><strong>Category</strong></td>
<td>Development and Building, Regulation Planning and Assessment</td>
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<tr>
<td><strong>Keywords</strong></td>
<td>Developer, Contributions, Section 94A, Western Corridor, Section 7.11, Local Infrastructure Contributions</td>
</tr>
<tr>
<td><strong>Revision date</strong></td>
<td>January 2016, 2024</td>
</tr>
<tr>
<td><strong>Amendments</strong></td>
<td>1</td>
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</tbody>
</table>
| **Relevant strategic direction** | Protected and Enhanced Environment  
Vibrant and Activated Public Places  
Caring and Inclusive Community  
Liveable and Distinctive Built Environment  
Open and Collaborative Leadership  
Liveable Built Environment  
Inclusive Community  
Vibrant, Safe and Active Public Places  
Integrated and Accessible Transport |
| **Relevant legislation/codes** | Environmental Planning and Assessment Act 1979  
Environmental Planning and Assessment Regulations 2000 |
| **Related policies/documents** | Department of Planning Developer Contributions Practice Notes  
Environmental Planning and Assessment (Local Infrastructure Contributions) Amended Ministerial Direction and Practice Notes |
| **Related forms** | N/A                                                                                                                  |
|                      | Functions authorised under this policy including **CN Officers** authorised to perform the function. |
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   3.2.1 Traffic and transport
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Table 2.1 Assumed household occupancy rates
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1.0 Summary of Plan

1.1 Preamble

The Western Corridor is an urban release area centred on the localities of Minmi, Fletcher and Maryland in the western part of the Newcastle local government area (LGA).

Development of the Western Corridor is well advanced but is only partly complete. Significant additional development in the south and west of the area, is yet to be determined.

The Local Infrastructure (public amenities or services) needs of the area have historically been managed through conditions of consent issued under pre-existing contributions plans and planning agreements negotiated with local developers. This Plan describes the Local Infrastructure that is demanded by the remainder of the Western Corridor development, and the contributions of land and works from Western Corridor developers that will be required.

The required Local Infrastructure includes:
- open space and recreation facilities, such as local and district sporting facilities, local parks and playgrounds;
- community facilities, such as multi-purpose community centres; and
- traffic and transport management facilities, such as upgraded roads, intersections and cycle paths.

1.2 Summary of contribution rates and works schedule costs

Table 1.1 shows the contribution rates applicable to development the subject of this Plan, and the total value of works to be funded by contributions anticipated under this Plan.

**Note:** A cap of $20,000 will apply to all residential lots / dwellings. This may increase for areas identified within this Plan as ‘Planned Future Development sites’ with Ministerial approval.

<table>
<thead>
<tr>
<th>Infrastructure type</th>
<th>Land and works cost to be met by development</th>
<th>Contribution rates</th>
<th>Per dwelling (except seniors housing)</th>
<th>Per self-contained seniors housing dwelling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per PM peak trip</td>
<td>Per person</td>
<td>$1,009</td>
<td>$13,773.40</td>
</tr>
<tr>
<td>Traffic and Transport</td>
<td>$2,900,382</td>
<td>$34,020,304</td>
<td>$858</td>
<td>$11,707.40</td>
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<tr>
<td>Social Infrastructure</td>
<td>$34,297,350</td>
<td>$58,328,985</td>
<td>$11,505.32</td>
<td>$19,566.90</td>
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<tr>
<td>Total</td>
<td>$37,995,744</td>
<td>$92,349,289</td>
<td>$12,363.32</td>
<td>$202</td>
</tr>
</tbody>
</table>

**Currently capped at $20,000**

**CURRENTLY CAPPED AT $20,000**

**$5,954.66**

**$12,538.20**
1.3 Overview and structure of Plan

Section 94.7.11 of the Environmental Planning and Assessment Act 1979 (EP&A Act) authorises a consent authority responsible for determining a development application to grant consent to a proposed development subject to a condition requiring development infrastructure contributions of cash and/or land towards the provision or improvement of public amenities and public services (i.e. Local Infrastructure) to meet that development.

Where the consent authority is a council or an accredited certifier, such a contribution may be imposed on a development only if it is of a kind allowed by and determined in accordance with a contributions plan, such as this Plan.

This Plan has been prepared to authorise the imposition of section 94.7.11 contributions on development expected to occur in the Western Corridor area of the Newcastle LGA.

This Plan has been prepared in accordance with the EP&A Act and Environmental Planning and Assessment Regulation 2000 (EP&A Regulation), including the requirement for the Plan to have had regard to the latest Practice Notes and Ministerial Direction (section 7.17) issued by the NSW Department of Planning, and Infrastructure and Environment.

There are minimum requirements as to the form and subject matter of section 94.7.11 contributions plans that are set out in the EP&A Regulation. Each requirement, and reference to the clause or Part of this document that deals with that requirement, are listed in Table 1.2.

Table 1.2 Contributions plan requirements

<table>
<thead>
<tr>
<th>EP&amp;A Regulation requirement</th>
<th>Reference in this Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>The purpose of the plan</td>
<td>Clause 2.6</td>
</tr>
<tr>
<td>The land to which the plan applies</td>
<td>Clause 2.8</td>
</tr>
<tr>
<td>The relationship or nexus between the expected development in the area and the community infrastructure that is required to meet the demands of that development</td>
<td>Background Document</td>
</tr>
<tr>
<td>The formulas to be used for determining the reasonable contributions required from expected development for different types of community infrastructure</td>
<td>Clauses 3.2.1 and 3.2.2</td>
</tr>
<tr>
<td>The contribution rates for the anticipated types of development in the area</td>
<td>Clause 1.2</td>
</tr>
<tr>
<td>The council’s policy concerning the timing of the payment of monetary section 94.7.11 contributions, and the imposition of section 94.7.11 conditions that allow deferred or periodic payment</td>
<td>Clauses 2.16 and 2.17</td>
</tr>
<tr>
<td>Maps showing the specific public amenities and services proposed to be provided by the council, supported by a works schedule that contains an estimate of their cost and staging (whether by reference to dates or thresholds)</td>
<td>Tables 3.2 and 3.3</td>
</tr>
<tr>
<td>If the plan authorises monetary section 94.7.11 contributions or section 94A.7.12 levies paid for different purposes to be pooled and applied progressively for those purposes, the priorities for the expenditure of the contributions or levies, particularised by reference to the works schedule</td>
<td>Tables 3.2 and 3.3</td>
</tr>
</tbody>
</table>
The Plan is structured in the following Parts:

- Part 1 (this Part) contains an introduction and summary schedules.
- Part 2 contains provisions that describe the contributions framework, essential details of the Plan, and how section 94.11 contributions for development in the CFPP Plan Area will be imposed, settled and managed.
- Part 3 provides summaries of the expected development, and the proposed infrastructure provision for meeting that development, including works schedules and maps.

A Background Document accompanies this Plan, should be read in conjunction with this Plan. While it provides background on the original Plan, updated information has been included in this Plan to support necessary adjustments in relation to traffic and transport and social infrastructure projects required to support growth.

The Background Document includes the following:

- Details on how the proposed schedule of Local Infrastructure levied under this Plan was originally derived.
- Details on the likely or expected development in the study area. These are assumptions that have informed the type, scale and location of public amenities and services included in the Plan.
- Discussion on the relevance of the Council’s current contributions plans that apply to the Western Corridor lands to the new contributions plan, and a strategy for dealing with contributions receipts under the current plans.

2.0 Administration and operation of the Plan

2.1 Name of the Plan

This Plan is called the Section 94.11 Local Infrastructure Contributions Plan.

2.2 Definitions used in this Plan

Except where indicated in this clause, the definitions of terms used in this Plan are the definitions included in the EP&A Act, EP&A Regulation and Newcastle Local Environmental Plan 2012.

In this Plan, the following words and phrases have the following meanings:

- **Attributable cost** means the estimated cost for each item in the works schedules set out in the Plan, which may differ from the final actual cost of the item. It will be the value used in determining the amount of any offset of monetary contributions as a result of any works-in-kind proposal.

- **Council** means Newcastle City Council City of Newcastle

- **CPI** means the Consumer Price Index (All Groups - Sydney) published by the Australian Statistician.

**EP&A Regulation** means the *Environmental Planning and Assessment Regulation 2000*.

**Local Infrastructure** means public amenities or public services in section 93C Division 7.1 of the EP&A Act.

**LGA** means *local* government area.

**CP 1** means *Development Contributions Plan No. 1 (2005)* adopted by the Council.

**CP4** means *Development Contributions Plan No. 4 (2006)* adopted by the Council.

**Residential Accommodation** has the same meaning as in *Newcastle Local Environmental Plan 2012*.

**Traffic Study** means City of Newcastle Western Corridor Traffic and Transport Study, prepared by *Better Transport Futures Bitzios, 2019*.

**Works-in-kind** means the undertaking of a work or provision of a facility by an applicant which is already nominated in the works schedule of a contributions plan as a means of either fully or partly satisfying a condition of consent requiring *development infrastructure* contributions to be made.

**Works schedule** means the schedule of the specific Local Infrastructure for which contributions may be required as set out in Part 3 of this Plan.

### 2.3 What are development infrastructure contributions?

*Development Infrastructure* contributions are contributions towards the provision or improvement of public amenities or services toward the provision of Local Infrastructure imposed on developments approved under the EP&A Act.

Contribution requirements may be in the form of the dedication of land free of cost, or the payment of a monetary contribution.

Contribution requirements may be settled by either of these means, or by the provision of a ‘material public benefit’ such as the provision of a work-in-kind.

There are different classes of development contributions provided for under the EP&A Act:

- Special infrastructure contributions;
- Local Infrastructure contributions, which may be either section 94.7.11 contributions or section 94A 7.12 fixed rate levies;
- contributions included in voluntary planning agreements; and
- contributions toward the provision of affordable housing.

This Plan is principally concerned with the imposition of conditions of consent requiring Local Infrastructure contributions under section 94 7.11 of the EP&A Act.
2.4 Prerequisites for imposing contribution requirements in consents

2.4.1 Contributions must be authorised by a contributions plan

The EP&A Act provides that a council (or an accredited certifier) can require, through imposition of a condition or conditions on a development consent (or on a complying development certificate), development infrastructure contributions if:

- there is a contributions plan applying to the development that is in force and that authorises the contribution (such as this Plan); and
- the contribution is imposed in accordance with the provisions of such a plan.

Accredited certifiers are further restricted to imposing only development infrastructure contributions being monetary contributions on a consent.

As an alternative to, or in addition to, the levying of section 94.7.11 contributions, a council may negotiate a planning agreement with a developer for the provision of Local Infrastructure.

Council may seek to negotiate planning agreements with relevant parties in relation to major developments. Such agreements may address the substitution of, or be in addition to, the contributions required under this Plan.

Any draft planning agreement shall be subject to any provisions of or Ministerial Directions made under the EP&A Act or EP&A Regulation relating to planning agreements.

2.4.2 Section 94.7.11 contributions must be reasonable

Section 94.7.11 contributions must be reasonable in the particular circumstances of each development. That is, a section 94.7.11 contribution must be proportional to the relationship (or ‘nexus’) that exists between the development being levied and the need for the public amenity or service for which the contribution is required.

Section 94.7.11 contributions may be imposed on developments to meet the cost of facilities yet to be provided; and to recoup the cost of facilities that have already been provided in advance of development occurring.

A condition may only be imposed under section 94.7.11 towards the future provision of public facilities:

- if the proposed development will or is likely to require the provision of, or increase the demand for, Local Infrastructure within the local government area; and
- to require only a reasonable dedication or monetary contribution for the provision, extension or augmentation of the Local Infrastructure concerned.

A condition may be imposed under section 94.7.11 towards the recoupment of the cost of Local Infrastructure if:

- the consent authority has, at any time, provided Local Infrastructure within the LGA in preparation for or to facilitate the carrying out of development in the area, and
- development for which development consent is sought will, if carried out, benefit from the provision of the Local Infrastructure.
A person entitled to act on a development consent may, under section 94B Division 7.13 of the EP&A Act, appeal the reasonableness of a section 94 7.11 condition that is imposed in accordance with a contributions plan. Such a condition may be disallowed or amended by the Land and Environment Court because it is unreasonable in the particular circumstances of that case, even if it was determined in accordance with the relevant contributions plan.

2.5 Cap on monetary section 94 7.11 contributions

As part of the State Government’s strategy to stimulate housing construction, increase housing supply and improve housing affordability in NSW, the Government has set limits on the total monetary section 94 7.11 contributions that a consent authority may impose on developments.

The Minister for Planning issued a Direction to the Council under section 94E Division 7.17 of the EP&A Act effective from 28 August 2012 that restricts consent authorities from imposing conditions of consent requiring monetary section 94 7.11 contributions on development for residential lots or dwellings in excess of the monetary cap specified by or under the Direction.

The monetary cap applying to residential development on the land to which this Plan applies is currently $20,000 per lot or dwelling unless the Plan has been reviewed and approved by IPART for a higher amount.

City of Newcastle will request that the Minister for Planning and Public Spaces increase the cap to $30,000 for areas identified in this Plan as ‘Planned Future Development sites’. The remainder of infill development will be capped at $20,000.

The contribution rates included in this Plan are consistent with that the updated Direction.

2.6 Purposes of the Plan

The primary purpose of the Plan is to authorise Council or accredited certifiers:

- when granting consent to an application to carry out development to which this Plan applies, or
- when issuing a complying development certificate for development to which this Plan applies,

required to make a contribution to be made towards either / both the provision, extension or augmentation of Local Infrastructure and the recoupment of the cost of providing existing Local Infrastructure.

Other purposes of the Plan are:

- to provide the framework for the efficient and equitable determination, collection and management of development infrastructure contributions toward the provision of Local Infrastructure generated by development within the Western Corridor;
- to determine the demand for Local Infrastructure generated by the incoming population to the area and ensure that development makes a reasonable contribution toward the provision of that Local Infrastructure;
- to ensure (within the limits imposed by Ministerial Directions) that the existing community is not unreasonably burdened by the provision of Local Infrastructure required (either partly or fully) as a result of development in the area; and
to ensure Council’s management of development contributions complies with relevant legislation and guidelines.

2.7 Commencement of the Plan

This Plan commences on 13 January 2014.

2.8 Land to which Plan applies

This Plan applies to all of the land identified in Figure 1.
Figure 1  Land to which this Plan applies (updated map)
2.9 Development to which this Plan applies

Except as provided for by this clause, this Plan applies to all Residential Accommodation development that will or is likely to require the provision of or increase the demand for Local Infrastructure.

This Plan does not apply to development:

- for the purpose of a single dwelling on a single allotment that was the subject of a section 94 7.11 contribution that has already been paid; or
- for the purpose of alterations and additions to existing dwellings; or
- ordinarily incidental or ancillary to the use of a dwelling, such as swimming pools, garages, sheds, tree applications and the like; or
- for the purposes of seniors housing by a social housing provider within the meaning of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004; or
- for demolition (where there is no replacement building or development); or
- for which Council considers an exemption warranted, where a decision is made by formal ratification of the Council at a public Council meeting.

Applicants for the above developments may be required to provide written justification for exemption from section 94 7.11 contributions under this Plan.

2.10 Relationship to other contributions plans

For the purposes of this clause, a ‘pre-existing contributions plan’ means the following:

- Development Contributions Plan No. 1, 2005 (CP1); and
- Development Contributions Plan No. 4, 2006 – Transport Facilities in Blue Gum Hills (CP4).

This Plan applies to the development of land shown in Figure 1 that has not been the subject of a section 94 7.11 contribution imposed under a pre-existing contributions plan.

Where a consent includes a contribution imposed under a pre-existing contributions plan, and that consent has lapsed, then any future development on the land the subject of that lapsed consent shall be assessed against, and be subject to the provisions of, the pre-existing contributions plans.

Similarly, where a consent includes a contribution imposed under a pre-existing contributions plan, and that development has been commenced but has not yet been completed, then any future development on the land the subject of that consent shall be assessed against, and be subject to the provisions of, the pre-existing contributions plans.
2.11 Allowances for existing development in the calculation of contributions

Monetary contributions determined under this Plan will be calculated according to the estimated net increase in demand for the particular items of Local Infrastructure that are included in this Plan and that a particular development is projected to generate.

In calculating contributions under this Plan an allowance will be made for the demand for social infrastructure assumed to be attributable to existing development on a development site.

Table 2.1 Assumed household occupancy rates

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Assumed Occupancy Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard residential lot</td>
<td>3.0 persons per dwelling</td>
</tr>
<tr>
<td>Dwellings</td>
<td>3.0 persons per dwelling</td>
</tr>
<tr>
<td>Self-contained seniors’ housing dwelling</td>
<td>1.5 persons per dwelling</td>
</tr>
</tbody>
</table>

The contribution required from a development for social infrastructure will only be due to any net increase in population relating to the proposed development, which is the total proposed population increase less any credits calculated using the assumptions in Table 2.1.

2.12 Section 94.7.11 contributions may be required as a condition of consent

This clause authorises consent authorises to require contributions of money and / or land on development consents, as follows.

2.12.1 Monetary contributions

This Plan authorises the Council or an accredited certifier, when determining a development application or an application for a complying development certificate, to impose a condition under section 94.7.11 of the EP&A Act requiring the payment of a monetary contribution towards:

- the provision, extension or augmentation of Local Infrastructure to meet the demands of the development; or
- the recoupment of the cost of Local Infrastructure previously provided in advance of development within the area.

2.12.2 Land contributions

This Plan authorises the Council, by imposition of a condition of development consent, to require in connection with any development on land to which this Plan applies (and in addition to any monetary contribution that may be sought) the dedication free of cost to the Council of any part of the development site that is land that is to be acquired under this Plan.

The area of land that may be required in the consent shall not exceed the area equivalent to the monetary contribution otherwise authorised by this Plan. Council will credit only the amount provided in the Plan.
For the purposes of this clause, the value of the land is to be calculated in accordance with the value of the land as indexed by the provisions of clause 2.14 of this Plan.

The monetary development contribution otherwise authorised by this Plan shall be reduced by an amount corresponding to the value of the land required to be dedicated.

Where the value of the land exceeds the monetary development contribution otherwise authorised, the developer may offer to enter into a planning agreement dealing with an appropriate settle-up in exchange for the dedication of the remainder.

2.13 Obligations of accredited certifiers

In relation to an application made to an accredited certifier for a complying development certificate:

- the accredited certifier must, if a complying development certificate is issued, impose a condition requiring a section 94 7.11 contribution, if such a contribution is authorised by this Plan; and
- any such contribution may only be a monetary contribution required under this Plan; and
- the amount of the monetary contribution that the accredited certifier must so impose is the amount determined in accordance with this Plan in respect of the development.

It is the responsibility of the principal certifying authority to accurately calculate and apply the Local Infrastructure contribution conditions to complying development certificates. Deferred payments of contributions required by a condition of a complying development certificate will not be accepted.

Likewise, it is the responsibility of an accredited certifier issuing a construction certificate to certify that the contributions have been paid to Council prior to the issue of the certificate. The accredited certifier must ensure that the applicant provides a receipt (or receipts) confirming that contributions have been fully paid and copies of such receipts must be included with copies of the certified plans provided to the Council in accordance with clause 142(2) of the EP&A Regulation. Failure to follow this procedure may render such a certificate invalid and expose the certifier to legal action.

The only exceptions to the requirement are where a works-in-kind, material public benefit, dedication of land and/or deferred payment arrangement has been agreed by the Council. In such cases the Council will issue a letter confirming that an alternative payment method has been agreed with the applicant.

2.14 Adjustment of contribution rates under this Plan

The purpose of this clause is to ensure that the monetary contribution rates imposed at the time of development consent reflect the indexed cost of the provision of Local Infrastructure included in this Plan.

Council may, without the necessity of preparing a new or amending contributions plan, make changes to the monetary section 94 7.11 contribution rates set out in this Plan to reflect quarterly changes to the Consumer Price Index.
The contribution rate for works schedule items will be indexed (subject to the Note) as follows:

\[
SC_A \times \text{Current CPI - Base CPI}
\]

Where:

- \(SC_A\) is the contribution rate for works schedule items (other than land yet to be acquired) at the time of adoption of the Plan expressed in dollars
- \(\text{Current CPI}\) is the most recent quarterly level of the Consumer Price Index (All Groups Index) for Sydney as published by the Australian Statistician at the time of the review of the contribution rate
- \(\text{Base CPI}\) is the Consumer Price Index (All Groups Index) for Sydney as published by the Australian Statistician at the date of adoption of this Plan

Note: The contribution rate will not be less than the contribution rate specified at the date of the adoption of this Plan.

### 2.15 Adjustment of contributions required by a condition imposed under this Plan

The purpose of this clause is to ensure that the monetary contributions at the time of payment reflect the indexed cost of the provision of Local Infrastructure included in this Plan.

A contribution required by a condition of development consent imposed in accordance with this Plan may require indexation of the contribution between the date of the grant of the consent and the date on which the contribution is made as follows.

The total contribution for all work schedule items at the time of payment is determined (subject to the Note) by the following formula:

\[
SC_C \times \frac{\text{CPI}_P}{\text{CPI}_C}
\]

Where:

- \(SC_C\) is the contribution amount for all works schedule items (other than land yet to be acquired) shown in the development consent expressed in dollars
- \(\text{CPI}_P\) is the most recent quarterly level of the Consumer Price Index (All Groups Index) for Sydney as published by the Australian Statistician at the time of the payment of the contribution
- \(\text{CPI}_C\) is the Consumer Price Index (All Groups Index) for Sydney as published by the Australian Statistician which applied at the time of the issue of the development consent

Note: The contribution payable will not be less than the contribution specified on the development consent.
2.16 **Timing of payment of monetary contribution required under this Plan**

Monetary contributions required under this Plan shall be paid to the Council at the time indicated in the development consent.

2.17 **Policy on deferred or periodic payments**

Deferred or periodic payments may be permitted in the following circumstances:

- Deferred or periodic payment of the contribution will not prejudice the timing or the manner of the provision of the items of Local Infrastructure included in this Plan’s works program; or
- In other circumstances considered reasonable by Council.

For a deferred or periodic payment to be considered, the applicant must satisfy to Council that:

- There are valid reasons for deferred or periodic payment;
- No prejudice will be caused to the community deriving benefit from the services being provided under this Plan; and
- No prejudice will be caused to the efficiency and operation of this Plan.

If Council does decide to accept deferred or periodic payment, Council may require the applicant to provide a bank guarantee for the full amount of the contribution or the outstanding balance on condition that:

(a) The bank guarantee be issued by an Australian bank or a bank in Australia for the amount of the total contribution, or the amount of the outstanding contribution, plus an amount equal to thirteen (13) months interest.

(b) Any charges associated with establishing or operating the bank security are payable by the applicant.

(c) The bank guarantee must carry specific wording identifying the exact obligation to which it relates (i.e. section 94 development contributions for development of Lot x DP xxx under Development Consent No. xxx)

(d) The bank unconditionally pays the guaranteed sum to the Council if the Council so demands in writing not earlier than 12 months from the provision of the guarantee or completion of the work.

(e) The bank must pay the guaranteed sum without reference to the applicant or landowner or other person who provided the guarantee, and without regard to any dispute, controversy, issue or other matter relating to the development consent or the carrying out of development.

(f) The bank's obligations are discharged when payment to the Council is made in accordance with this guarantee or when Council notifies the bank in writing that the guarantee is no longer required.

(g) Where a bank guarantee has been deposited with Council, the guarantee shall not be cancelled until such time as the original contribution and accrued interest are paid.

Deferred or periodic payments may be permitted, in accordance with the above requirements, only with approval of the Council Officer(s) whose position(s) holds the required Council delegations.
2.18 Dedication of land, or provision of works-in-kind or other material public benefits offered in part or full satisfaction of contribution requirements

A person may make an offer to the Council to carry out works or provide another kind of material public benefit or dedicate land, in lieu of making a contribution in accordance with a condition imposed under this Plan.

Any offer shall be made in writing to the Council.

If the offer is made prior to the issue of a development consent then the offer must be made by way of a planning agreement, and the Council will consider the request as part of its assessment of the development application.

The Council will take into account the following matters in deciding whether to accept an offer of works, land or other material public benefit:

- the requirements for dedication of land described in clause 2.18.1 (if the offer includes the dedication of land); and
- the overall benefit of the proposal; and
- the standard and timing of delivery of, and security arrangements applying to, the land or works the subject of the offer are to Council's satisfaction; and
- the conditions applying to the transfer of the asset to the Council are to Council's satisfaction; and
- the provision of the land or works will not unduly prejudice the timing or the manner of the provision of Local Infrastructure included in the works program; and
- whether the works schedule included in this Plan would require amendment; and
- the financial implications for cash flow and the continued implementation of the works schedule included in this Plan (including whether Council would need to make up for any shortfall in contributions by its acceptance of the offer).

The acceptance of any offer is entirely at Council's discretion.

If Council approves the offer then it will require the applicant to enter into a written agreement for the provision of the works in a suitable time period. Agreements shall specify (as a minimum) the works the subject of the offer, the value of those works, the relationship between those works and this Plan, the program for delivering the works.

If the offer is made by way of a draft planning agreement under the EP&A Act, the Council will require the agreement to be entered into and performed via a condition in the development consent. Planning agreements shall address the matters included in the EP&A Act and Regulation.

The value of any land, work-in-kind or material public benefit offered by the applicant may, at Council's discretion, be used to offset monetary contributions applicable to the development under this Plan. Refer to clause 2.18.1 for specific arrangements for dedication of land in exchange for offsetting contributions.
2.18.1 Minimum requirements for dedication of land for open space

The Council may accept the following areas for open space purposes:

- Land comprising natural areas or riparian corridors.
- Land that is required to deliver the social infrastructure contained in the Western Corridor contributions plan.
- Land that adds to the diversity of open space settings in the area.
- Land that links existing and/or proposed areas of open space and other community-focused land uses (e.g. shopping centres, libraries, transport nodes, schools, community centres).

Acceptance of such land is subject to the following conditions being met:

- The land can be made accessible to the general public.
- The land must be cleared of all rubbish, boulders and debris.
- The land must have in place ongoing maintenance arrangements that are acceptable to the Council.
- The land is separately subdivided and has a separate certificate of title.
- The land must not display any factors that may significantly limit its usability for open space purposes, such as flooding, contaminated soils, acid sulfate soils, current use of the land, or any other hazards or relevant factor.

Where any of the land is proposed to be dedicated to Council as open space for the purpose of offsetting the developer's monetary contributions under the contributions plan, the land must satisfy all of the following additional criteria:

- It must have the capacity to accommodate recreational facilities related to its intended purpose for either passive or active open space and recreation.
- It must be not less than 0.5 hectares in size, have a minimum dimension of 50 metres, and have a slope no greater than 1 in 20.
- It preferably should link existing and/or proposed areas of open space and other community-focused land uses (e.g. shopping centres, libraries, transport nodes, schools, community centres).
- It should have at least 50% frontage to a public road, facilitating visibility in to and from the site.
- It must have maintenance and emergency vehicle access.
- It must be provided with connection to water mains and other utility services.

2.18.2 Valuation of offers

The value of works offered as works-in-kind is the Attributable Cost of the works (or a proportion of the Attributable Cost if the offer involves providing only part of a work) indexed in accordance with the provisions of this Plan.

The Attributable Cost of works will be used in the calculation of the value of any offset of monetary contributions required under this Plan.

The value of any other kind of material public benefit will be determined by a process agreed to between the Council and the person making the offer at the time the development application is being prepared.
The value of land will be the Attributable Cost of the land under this Plan indexed to the time the agreement is entered into, in accordance with the indexing provisions of this Plan (refer to clause 2.14).

### 2.18.3 Provision of land, works-in-kind and other material public benefits in excess of contribution requirements

It is at Council’s discretion whether it will accept from a developer the provision of land, works-in-kind or other material public benefits where the value of the land and / or works (which is the Attributable Cost of the land and / or works indexed in accordance with the provisions of this Plan) exceeds the value of development contribution required by conditions of consent.

Where Council does agree to accept land and / or works with a value greater than the contributions required, Council will hold the ‘surplus value’ of the land / works as a credit in favour of the developer and will apply this credit against future development contribution requirements for that particular type of infrastructure.

For example, if works are provided by a developer that are ‘community facility’ works identified in this Plan, and those works have an Attributable Cost greater than the community facilities monetary contribution that is required on the developer’s development consent, then the difference between the Attributable Cost of the community facility works-in-kind and the monetary contribution (this is called the ‘surplus value’) will be held as a credit and will only be used to offset section 94 requirements for community facilities imposed on development consents in the Newcastle LGA issued to that developer.

That is, Council would not offset requirements to make contributions for the purposes of, for example, open space and recreation facilities or any other types of facilities required under this Plan or any other contributions plan against this ‘surplus value’, as the surplus value relates only to the provision of community facilities.

Developers providing land, works-in-kind and other material public benefits that are in excess of their contribution requirements should not expect ‘settle-up’ monetary payment from Council until all contributions toward the provision of the works identified in this Plan have been received from other developers of land in the Western Corridor and the surplus contributions are available to meet the payment.

### 2.19 Pooling of funds

For the purposes of section 93E(2) Division 7.3 of the EP&A Act, this Plan authorises money obtained from levies paid in respect of different developments to be pooled and applied by the Council progressively towards the Local Infrastructure items listed in Part 3 of this Plan.
2.20 Accountability and access to information

Council is required to comply with a range of financial accountability and public access to information requirements in relation to section 94 7.11 contributions. These are addressed in Divisions 5 and 6 of Part 4 of the EP&A Regulation and include:

- maintenance of, and public access to, a contributions register;
- maintenance of, and public access to, accounting records for contributions receipts and expenditure;
- annual financial reporting of contributions; and
- public access to contributions plans and supporting documents.

These records are available for inspection free of charge at Council.

2.21 Review of Plan without the need for public exhibition

Pursuant to clause 32(3) of the EPA Regulation, Council may make certain minor adjustments or amendments to the Plan without prior public exhibition and adoption by Council. Minor adjustments could include minor typographical corrections and amendments to rates resulting from changes in the indexes adopted by this Plan (see clause 2.14).

2.22 Savings and transitional arrangements

A development application which has been submitted prior to the adoption of this Plan but not determined shall be determined in accordance with the provisions of the plan which applied at the date of determination of the application.
3.0 Summary of Local Infrastructure demand and provision

3.1 Expected development Planned Future Developments and Approved developments

The Western Corridor has an estimated total development potential of 9,578 dwellings, of which approximately 40 percent was existing in 2011.

Approximately 27 percent of this potential has been developed since 2011 or is subject to a current consent. These developments will meet their local infrastructure needs through contributions paid under pre-existing contributions plans, or through planning agreements negotiated with the Council.

This means that there remains approximately 33 percent of the study area development (or around 3,132 dwellings) that is yet to be approved. The local infrastructure needs of these developments will be met by contributions levied under this Plan. Alternatively, these developments may be the subject of planning agreements negotiated between developers and Council.

Expected future development will mainly be accommodated in two major developments: Coal and Allied and Xstrata. Together, these developments will likely account for around 87 percent of yet-to-be-approved development.

Table 3.3 profiles the expected future development and resultant population growth. The location of the respective anticipated development areas is shown in Figure 2.

These areas of development are the focus of infrastructure identified in this Plan, and are expected to be the main developments that will be subject to the contributions included in this Plan.

The Western Corridor has experienced growth in residential developments and population which is forecast to continue into the foreseeable future. The Western Corridor has been divided into different sections which make up the Area of the Plan. New developments are proposed in Fletcher and Minmi.

Within the Plan Area a total of nine areas were identified where residential developments or other developments, have recently been completed or are being planned to be implemented in the future. Of the nine areas, the following four areas currently being planned for new development (should they proceed into LEP Amendments) include:

Planned Future Development sites
- Coal and Allied Part 3A (Winton)
- 505 Minmi Road
- Xstrata Coal
- Seniors living.

The remaining five areas already include a range of developments and additional developments that have been approved. These areas are:

Approved Development sites
- Nikkinba Ridge
- Hidden Waters
- St Andrews Way
• Sanctuary Estate
• The Outlook.

The location of these developments is shown in Figure 2.

Coal and Allied (Winton Property Group)
Coal and Allied is located within Minmi and Fletcher (and other suburbs outside of the CN LGA). A total of 1,672 dwellings is expected including 152 seniors living dwellings. The Coal and Allied development is estimated to house approximately 4,800 residents.

Note. The development proposed south of the City of Newcastle’s LGA boundary will allow for an additional 3,300 (approximately 1100 dwellings).

505 Minmi Road
505 Minmi Road is located within Fletcher. A total of 110 dwellings may be achieved housing approximately 300 residents.

Xstrata Coal
Xstrata Coal is located within Wallsend and Elermore Vale (with the remainder outside the CN LGA). A total of 1,200 dwellings may be achieved, housing approximately 3,600 residents.

Seniors Living
Seniors Living – Elermore Vale is located within Elermore Vale. A total of 150 seniors dwellings is expected, housing approximately 225 residents.

Nikkinba Ridge Estate
Nikkinba Ridge is located within Fletcher. It is expected that 463 dwellings would be constructed within Nikkinba Ridge, housing an estimated 1,400 residents. The proposed development also includes the expectation that 32 of the 463 dwellings will be medium density.

Hidden Waters
Hidden Waters is located within Fletcher. It is expected that 427 dwellings would be constructed within Hidden Waters, housing an estimated 1,350 residents.

St Andrews Way
St Andrew Way is located within Fletcher. It is the smallest development area within the Western Corridor with only 25 dwellings approved, but yet to be released. It is expected to be around 75 residents.
Sanctuary Estate
Sanctuary Estate is located to the north of Fletcher. Sanctuary Estate is expected to be the largest estate within Fletcher with an expected 836 dwellings, including 77 medium density dwellings, housing approximately 3,000 residents.

Outlook
The Outlook is located within Fletcher. The Outlook is proposed to contain the highest proportion of medium density dwellings, with over 25% of all dwellings to be medium density. A total of 618 dwellings are expected, housing approximately 1,850 residents.

An additional 3,132 dwellings are expected in this area and when added to the 2,634 dwellings which are approved or under construction, this results to a total of 5,766 dwellings.

Table 3.1  Expected (Planned Future) development in the Western Corridor

<table>
<thead>
<tr>
<th>Western Corridor Development Areas</th>
<th>Expected dwellings</th>
<th>Estimated population in anticipated development¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal &amp; Allied Part 3A</td>
<td>1,520</td>
<td>4,560</td>
</tr>
<tr>
<td>- seniors living component</td>
<td>152</td>
<td>228</td>
</tr>
<tr>
<td>505 Minmi Road</td>
<td>110</td>
<td>330</td>
</tr>
<tr>
<td>Xstrata</td>
<td>1,200</td>
<td>3,600</td>
</tr>
<tr>
<td>Seniors Living - Elermore Vale</td>
<td>150</td>
<td>225</td>
</tr>
<tr>
<td>Total</td>
<td>3,132</td>
<td>8,943</td>
</tr>
</tbody>
</table>

Notes:
1. assumed occupancy rate of 1.5 persons per dwelling for self-contained seniors living development and 3 persons per dwelling for all other dwellings.
Figure 2  Western Corridor development area (updated map)
3.2 Local Infrastructure strategies

3.2.1 Traffic and transport

Background

When the 2013 plan was published, a total of 67% of the area was either developed or covered by an approved development application. The 2013 plan reported multiple intersections along Minmi Road having unacceptable Levels of Service (LoS) in at least one peak period, based on forecast 2016 traffic volumes at that time. The Plan proposed approximately $3 million of upgrades along Minmi Road transport corridor. The majority of upgrades comprised additional lanes in Minmi Road and minor modifications to intersection geometry. The planned suite of upgrades also included an off-road cycleway from Britannia Boulevard to Woodford Street.

CN commissioned a traffic and transport study of the Western Corridor Plan Area to inform a future works program and provide the necessary information to recalculate contributions from planned developments. It is intended that the traffic and transport study be reviewed in five years’ time, and the contributions plan be updated to support further recommendations for longer term projects. The traffic and transport study considers future road network requirements for general traffic, as well as required footpath and cycleways infrastructure, including indicative costs and staging.

The following information is extracted from the Western Corridor Traffic and Transport Study (2019).

Existing situation and growth challenges

Most of the major developments in the study area rely on Minmi Road for access to Newcastle Link Road. With the Newcastle CBD being a major attractor to the east, there is a heavy orientation of traffic between these development areas and the intersections in the south-east of the study area.

Development Areas and Road Network

An additional 3,310 dwellings are expected for this area and when added to the 2,634 dwellings which are approved or under construction, results in a total of 5,764 dwellings which need to be accommodated by the road network. This dwelling forecast aligns with the forecast population for an area slightly larger than the study area with an increase from 29,779 residents in 2016 to 42,835 residents in 2046. This growth in the study area will add nearly 50,000 vehicles per day (vpd) to the road network, most of which is orientated towards the south-east confluence of the network. Through traffic on the Newcastle Link Road corridor is forecast to increase by nearly 22,000 vpd between 2016 and 2036.
In 2017, most of the intersections in the study area operated at a Level of Service (LoS) of ‘D’ or better in both the AM and the PM peak hours. LoS E/F is typically identified as the condition where an upgrade would ordinarily be warranted. The exception to the LoS D performance is the Lake Road/Thomas Street/Newcastle Link Road intersection which operates at LoS F in the PM peak. With a heavy reliance on Minmi Road for distributing development traffic to/from the south-east, there are significant challenges in providing sufficient road capacity in this corridor, particularly at its southern end which is already heavily trafficked.

**Upgrades Needs Assessment Process**

Traffic demands were calculated for each of the assessment years of 2021, 2026 and later based on expected rates of development in each of the approved and planned development areas, as well as the growth in through traffic on the Newcastle Link Road corridor. Footpath and cycleway upgrades have been identified based on ‘missing links’ and logical extensions of facilities into development areas.

The following upgrade needs have been identified for years 2021 - 2028:

**Cowper Street / Lake Road Intersection**
- addition of one extra circulating lane between the Southern and Western approaches and
- one additional exit lane on the Southern approach.

**Cowper Street / Newcastle Road Intersection**
- change from priority control to a 4-way, one lane roundabout.

**Sandgate Road / Wilkinson Avenue / Tillie Street Intersection**
- realign the Wilkinson Avenue approach to join Sandgate Road / Tillie Street intersection and signalise the intersection with pedestrian crossings across the Sandgate Road (E), Wilkinson Avenue and Tillie Street approaches of the intersection
- an additional lane on the Tillie Street approach (80m long)
- an additional lane on the Sandgate Road departure
- extend the short lane by banning peak hour kerb side parking on the approach and departure of Sandgate Road (W) as far as Dennis Place.
Cowper Street / Cameron Street Intersection
- ban the east to north right turn movement at the Cowper Street / Cameron Street intersection and introduce traffic signals at the Minmi Road/Sandgate Road intersection to provide the east to north right turn
- reconfigure the intersection to incorporate an additional left turn slip lane from Minmi Road (N) to Sandgate Road (E) at the Sandgate Road/Minmi Road intersection
- an additional lane on the departure side of Longworth Avenue and
- reconfigure the intersection to allow two through lanes for eastbound traffic.

Minmi Road / Awabakal Road Intersection
- introduce an additional traffic lane for the westbound traffic.

Minmi Road / Highland Way Intersection
- reconfigure the current priority (T) intersection to a 4-way single lane roundabout.

Minmi Road / Woodford Street Intersection
- an additional right turn lane on Woodford Street (S) and an additional departure lane on Minmi Road (E).

Mid-block Road Capacity Improvements
- widen Minmi Road eastbound to two lanes between Awabakal Drive and Maryland Drive, Maryland Drive and Bottlebrush Boulevard, Bottlebrush Boulevard and Warkworth Street and Warkworth Street and Summerhill Road; and
- widen Minmi Road southbound to two lanes between Cowper Street/Cameron Street and Longworth Avenue/Newcastle Road.

Cowper Street / Kokera Street Intersection
- an additional lane (80m long) for the east to north movement
- an additional eastbound lane on the Cowper Street departure as far as Brooks Street and
- re-configure the eastbound kerb side lane to be a shared left and through lane.

Cowper Street / Nelson Street Intersection
- an additional departure lane in Cowper Street (E) as far as Murnin Street and
- extend the westbound short lane between Nelson Street and Newcastle Road.

Cowper Street / Newcastle Road Intersection
- an additional short northbound lane (25m long) on the northbound approach of Newcastle Road and
- consequently an additional short lane (60m) on the exit side of Cowper Street (E).
Sandgate Road / Wilkinson Avenue / Tillie Street Intersection
- extend the two-lane section on the Tillie Street approach by 70m.

Cowper Street / Cameron Street Intersection
- an additional southbound lane at the Minmi Road/Sandgate Road/Cowper Street/Cameron Street intersection and
- an additional northbound short lane (65m) at the Longworth Avenue approach.

Minmi Road / Bunnings Intersection
- an additional departure lane northbound and
- re-configure the northbound approach so that the kerb side lane is shared between through and left turning traffic.

Minmi Road / Maryland Drive Intersection
- re-configure the southbound left turn from priority control (give-way) to a slip lane configuration and introduce an additional traffic lane on the eastbound departure.

Minmi Road / McNaughton Avenue Intersection
- additional lane eastbound and westbound and
- exclusive (60m) left turn lane on McNaughton Avenue.

Minmi Road / Woodford Street Intersection
- an additional northbound lane between Bell Street and Minmi Road
- two left turn lanes on the westbound approach: one 50m lane and one full lane and
- an additional southbound lane on Woodford Street south of the intersection.

Mid-block Road Capacity Improvements
- widen Minmi Road to two-lanes eastbound between Anna Place and Maryland Drive
- widen Minmi Road to three-lanes eastbound between Maryland Drive and Fletcher Street
- widen Minmi Road to two-lanes westbound between Bunnings and Macquarie Street and between Maryland Drive and Anna Place
- widen Minmi Road to two-lanes eastbound between McInnes Street and McCarthy Street and between McCarthy Street and McInnes Street
- widen Cowper street to two-lanes eastbound between Kokera Street and Nelson Street, between Newcastle Road and Union Street and between John Street and Minmi Road
- widen Cowper Street to two-lanes westbound between Union Street and Newcastle Road
- ban peak hour kerb side parking along Woodford Street between Minmi Road and Railway Street southbound and between Bell Street and Minmi Road northbound and
- ban peak hour kerb side parking along Cowper Street between Lake Road and Kokera Street and between Nelson Street and Newcastle Road eastbound and between Newcastle Road and Nelson Street westbound and between Kokera Street and Lake Road westbound.
Footpath and Cycleway Upgrade Needs

Additional footpath and cycleway links have also been identified for years 2021 – 2026 based on the assessment of missing links and new links needed to service new development areas. The following footpath and cycleway projects have been identified, as follows:

Footpath projects:

- 1: Tallowood Crest to Jetty Parade
- 2: Cottonwood Chase to Weller Street
- 3: Beech Close to Weller Street
- 4: Along Minmi Road (between Churnwood Drive & Bellbird Close)
- 5: St Andrews Way to Styles Close
- 2: Waterside Drive to Hebrides Road
- 3: Waterside Drive to Tartan Place
- 4: Waterside Drive to Plattsburg Parade
- 5: Wedgetail Street to Crestview Street
- 6: Wedgetail Street to Crestview Street
- 7: Pebblestone Street to Kingfisher Drive
- 8: Pebblestone Street to Kingfisher Drive

Cycleway projects

- 1: Blue Gum Hills Road to Brookfield Avenue (Northern side of Minmi Road)
- 2: Brookfield Avenue to Blue Gum Hills Road (Southern side of Minmi Road)
- 3: Britannia Boulevard to Brookfield Avenue
- 4: Maryland Drive to Summerhill Road

Minmi Road is the key item of transport infrastructure that will be impacted by future development in the study area. Currently, Minmi Road generally operates within capacity, with some links however showing unacceptable LOS in at least one peak hour.

By 2016, Minmi Road will generally experience volumes in excess of capacity. Accordingly, the widening of Minmi Road south-east of Maryland Drive (west) to Cameron Street/Cowper Street to two lanes in each direction is considered critical to the successful operation of the road. Also, more than half the studied intersections will likely operate at an unacceptable LOS by this time. The majority of the works required to mitigate these impacts is required by existing developments or developments that have already been approved.

The works recommended to sustain 2016 vehicle flows would, if carried out with certain additional works identified to meet the future development in the study area, likely support the traffic flows anticipated in the study area up to 2031.

Several public transport, walking and cycling works have also been identified as being needed to sustain the future development of the study area.
Summary (Planned and Approved Developments)

The combination of planned and approved developments within the study area are expected to generate 4,580 vehicular trips during peak hours from a total of 5,764 low density residential and senior living dwellings.

This is summarised in Table 3.2

Table 3.2 Traffic Generation Summary (Planned plus Approved Developments)

<table>
<thead>
<tr>
<th>Development Stage</th>
<th>Expected Dwellings</th>
<th>Weekday Peak Hour Vehicle Trip Rate</th>
<th>Vehicle Trips/hour</th>
<th>Daily Vehicle Trip Rate</th>
<th>Vehicle Trips/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned</td>
<td>3,130</td>
<td>Various</td>
<td>2,470</td>
<td>Various</td>
<td>26,075</td>
</tr>
<tr>
<td>Approved</td>
<td>2,834</td>
<td></td>
<td>2,110</td>
<td>Various</td>
<td>22,220</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5,764</td>
<td></td>
<td>4,580</td>
<td></td>
<td>48,295</td>
</tr>
</tbody>
</table>

Calculation of a reasonable development contribution

Monetary contributions for traffic and transport infrastructure are calculated on a per peak hour trip basis, then factored up to a per lot or per dwelling amount.

The monetary contribution per peak hour trip in a development containing residential dwellings or lots is calculated as follows:

\[
\text{Contribution per resident (\$)} = \frac{\$\text{INF}}{T}
\]

Where:

\(\$\text{INF}\) = the estimated total cost of all the traffic and transport infrastructure required to meet the future development expected under this Plan

\(T\) = the estimated total number of peak hour vehicle trips that will be generated by the future development expected under this Plan. The per dwelling amount is determined by multiplying the per trip contribution by the estimated increase in peak hour vehicle trips as a result of the development, using the following assumed trip generation rates shown below.

The following workings show the calculation of the section 94 contribution rate:

\[
\text{Contribution per vehicle trip (\$)} = \frac{\$\text{INF}}{T}
\]

\[
\frac{\$2,900,382.00}{2,874} = \$1,009.18 \quad \$13,773.40
\]

\[
\frac{\$34,020,304}{2,470} = \$13,773.40
\]
Assumed peak hour vehicle trip generation rates:

- Standard lot or dwelling: 0.85 trips per dwelling
- Seniors living dwellings: 0.2 trips per dwelling

Using the above assumptions the following per dwelling contributions are derived:

Contribution per standard lot or dwelling ($) = \( \frac{1,009.18 \times 0.85}{13,773.40} \) 
\( = \) \$857.80
\( \frac{11,707.40}{13,773.40} \) 

Contribution per seniors living dwelling ($) = \( \frac{1,009.18 \times 0.2}{13,773.40} \) 
\( = \) \$201.84
\( \frac{2,754.70}{13,773.40} \)

**Works program**

The proposed traffic and transport works program for works to 2026, and maps showing the location of the infrastructure, are shown on the following pages.
### Table 3.2 Western Corridor traffic and transport infrastructure schedule

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
<th>Estimated cost of works</th>
<th>Estimated staging and priority</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Roads and Intersections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td>Minmi Road, Awabakal Drive and Bellbird Close</td>
<td>Additional westbound approach lane and westbound departure lane on Minmi Road</td>
<td>$378,338</td>
<td>7</td>
</tr>
<tr>
<td>T2</td>
<td>Minmi Road, Churnwood Drive and Maryland Drive, west</td>
<td>Lengthening of approach and departure two lanes on Minmi Road and provision of left turn slip lane on Maryland Drive (west)</td>
<td>$509,350</td>
<td>6</td>
</tr>
<tr>
<td>T3</td>
<td>Summerhill Waste Management roundabout</td>
<td>Widen Minmi Road on approach and departure to 2 lanes</td>
<td>$272,475</td>
<td>5</td>
</tr>
<tr>
<td>T4</td>
<td>Minmi Road and McNaughton Street</td>
<td>Modification to intersection at McNaughton Street to restrict turning movements</td>
<td>$244,765</td>
<td>4</td>
</tr>
<tr>
<td>T5</td>
<td>Minmi Road and Maryland Drive east</td>
<td>Duplicate Minmi Road to the east to Maryland Drive (east)</td>
<td>$244,765</td>
<td>3</td>
</tr>
<tr>
<td>T6</td>
<td>Minmi Road, Creek Road and Macquarie Street</td>
<td>Modifications to side road exit movements with additional lanes and extension of turn lanes on Minmi Road eastern approach</td>
<td>$327,394</td>
<td>2</td>
</tr>
<tr>
<td>T7</td>
<td>Minmi Road and Sandgate Road</td>
<td>Widen on approach and departure to 2 lanes in both directions on Minmi Road</td>
<td>$258,645</td>
<td>1</td>
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<tr>
<td></td>
<td><strong>Sub-Total</strong></td>
<td></td>
<td><strong>$2,235,732</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Contingencies allowance (20%)</strong></td>
<td></td>
<td><strong>$447,150</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Sub-total including contingencies</strong></td>
<td></td>
<td><strong>$2,682,882</strong></td>
<td></td>
</tr>
</tbody>
</table>
### Traffic Infrastructure

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Description</th>
<th>Estimated cost of works</th>
<th>Estimated staging and priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Awabakal Drive to Maryland Drive - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>Road widening upgrades</td>
<td>$2,371,961</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T2</td>
<td>Maryland Drive to Bottlebrush Boulevard (EB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>Road widening upgrades</td>
<td>$1,931,454</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T3</td>
<td>Bottlebrush Boulevard to Warkworth Street (EB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>Road widening upgrades</td>
<td>$1,185,981</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T4</td>
<td>Cameron Street to Newcastle Road (SB) - Add lanes (1 to 2 lanes) - Longworth Avenue (+ Longworth Ave, Wallsend road widening)</td>
<td>Road widening upgrades</td>
<td>$3,185,205 + $9,890,000</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T5</td>
<td>Cowper Street / Lake Road</td>
<td>Intersection upgrade</td>
<td>$1,528,316</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T6</td>
<td>Minmi Road / Awabakal Drive</td>
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<td>$1,457,062</td>
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</tr>
<tr>
<td>T7</td>
<td>Minmi Road / Highland Way</td>
<td>Intersection upgrade</td>
<td>$253,858</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T8</td>
<td>Minmi Road / Woodford Street</td>
<td>Intersection upgrade</td>
<td>$900,694</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T9</td>
<td>Sandgate Road / Wilkinson Avenue / Tillie Street</td>
<td>Intersection upgrade</td>
<td>$960,690</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T10</td>
<td>Kokera Street to Nelson Street (EB) - Add lanes (1 to 2 lanes) - Cowper Street</td>
<td>Road widening upgrades</td>
<td>$1,200,863</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T11</td>
<td>John Street to Minmi Road (EB) - Add lanes (1 to 2 lanes) - Cowper Street</td>
<td>Road widening upgrades</td>
<td>$928,792</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T12</td>
<td>Union Street to Newcastle Road (WB) - Add lanes (1 to 2 lanes)- Cowper Street</td>
<td>Road widening upgrades</td>
<td>$365,888</td>
<td>2021-2026</td>
</tr>
<tr>
<td>T13</td>
<td>Newcastle Road to John Street (NB) - Add lanes (1 to 2 lanes)- Longworth Avenue</td>
<td>Road widening upgrades</td>
<td>$816,211</td>
<td>2021-2026</td>
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<td>T14</td>
<td>Land Acquisition Costs</td>
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<td>$873,438</td>
<td>2021-2026</td>
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<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$27,850,413</strong></td>
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<tr>
<td>No.</td>
<td>Item</td>
<td>Description</td>
<td>Estimated cost of works</td>
<td>Estimated staging and priority</td>
</tr>
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<td>-----</td>
<td>-----------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
<td>Pedestrian / Bicycle Facilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T8</td>
<td>Pedestrian / Bicycle Facilities</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Pedestrian / Bicycle Facilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T8</td>
<td>Off road footway / cycleway between Britannia-Boulevard and Woodford Street</td>
<td>$137,500</td>
<td>8</td>
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<td></td>
<td>Sub-Total</td>
<td></td>
<td>$137,500</td>
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<tr>
<td>T9</td>
<td>Public Transport Facilities</td>
<td></td>
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<tr>
<td></td>
<td>Public Transport Facilities</td>
<td></td>
<td></td>
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<td></td>
<td>T9</td>
<td>New Bus Shelters x 4</td>
<td>$80,000</td>
<td>9</td>
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<tr>
<td></td>
<td>Sub-Total</td>
<td></td>
<td>$80,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub-Total</td>
<td></td>
<td>$2,900,382</td>
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## Cycleway and pedestrian infrastructure

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<tr>
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<th>Item</th>
<th>Description</th>
<th>Estimated cost of works</th>
<th>Estimated staging and priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Blue Gum Hills Road to Brookfield Avenue (Northern side of Minmi Road)</td>
<td>Cycling infrastructure</td>
<td>$380,737.85</td>
<td>2021-2026</td>
</tr>
<tr>
<td>C2</td>
<td>Brookfield Avenue to Blue Gum Hills Road (Southern side of Minmi Road)</td>
<td>Cycling infrastructure</td>
<td>$380,737.85</td>
<td>2021-2026</td>
</tr>
<tr>
<td>C3</td>
<td>Britannia Boulevard to Brookfield Avenue</td>
<td>Cycling infrastructure</td>
<td>$158,640.77</td>
<td>2021-2026</td>
</tr>
<tr>
<td>C4</td>
<td>Maryland Drive to Summerhill Road</td>
<td>Cycling infrastructure</td>
<td>$174,504.85</td>
<td>2021-2026</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$1,094,621</strong></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>Tallowood Crest to Jetty Parade</td>
<td>Pedestrian infrastructure</td>
<td>$489,555</td>
<td>2021-2026</td>
</tr>
<tr>
<td>P2</td>
<td>Cottonwood Chase to Weller Street</td>
<td>Pedestrian infrastructure</td>
<td>$575,947</td>
<td>2021-2026</td>
</tr>
<tr>
<td>P3</td>
<td>Beech Close to Weller Street</td>
<td>Pedestrian infrastructure</td>
<td>$590,345</td>
<td>2021-2026</td>
</tr>
<tr>
<td>P4</td>
<td>Along Minmi Road (between Churnwood Drive &amp; BellbirdClose)</td>
<td>Pedestrian infrastructure</td>
<td>$604,744</td>
<td>2021-2026</td>
</tr>
<tr>
<td>P5</td>
<td>St Andrews Way to Styles Close</td>
<td>Pedestrian infrastructure</td>
<td>$393,551</td>
<td>2021-2026</td>
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<tr>
<td>P5</td>
<td>Waterside Drive to Hebrides Road</td>
<td>Pedestrian infrastructure</td>
<td>$188,905</td>
<td>2021-2026</td>
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<tr>
<td>P6</td>
<td>Waterside Drive to Tartan Place</td>
<td>Pedestrian infrastructure</td>
<td>$355,770</td>
<td>2021-2026</td>
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<tr>
<td>P7</td>
<td>Waterside Drive to Plattsburg Parade</td>
<td>Pedestrian infrastructure</td>
<td>$289,654</td>
<td>2021-2026</td>
</tr>
<tr>
<td>P8</td>
<td>Wedgetail Street to Crestview Street</td>
<td>Pedestrian infrastructure</td>
<td>$550,972</td>
<td>2021-2026</td>
</tr>
<tr>
<td>P9</td>
<td>Wedgetail Street to Crestview Street</td>
<td>Pedestrian infrastructure</td>
<td>$428,184</td>
<td>2021-2026</td>
</tr>
<tr>
<td>P10</td>
<td>Pebblestone Street to Kingfisher Drive</td>
<td>Pedestrian infrastructure</td>
<td>$333,731</td>
<td>2021-2026</td>
</tr>
<tr>
<td>P11</td>
<td>Pebblestone Street to Kingfisher Drive</td>
<td>Pedestrian infrastructure</td>
<td>$333,731</td>
<td>2021-2026</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$5,075,270</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total for all Traffic and Transport</strong></td>
<td></td>
<td><strong>$34,020,304</strong></td>
<td></td>
</tr>
</tbody>
</table>
Figure 3  Western Corridor transport infrastructure (updated map)
3.2.2 Social infrastructure Summary of requirements

Social infrastructure includes the community facilities, services and networks which help individuals, facilities, groups and communities meet their social needs, maximise their potential for development and enhance community wellbeing.

Currently, there is some 113 hectares of open space available in the study area, about 33 hectares of which is considered by Council to be ‘usable’ open space. The Blue Gum Hills Regional Park is an additional facility that is a major recreation resource. Further local recreation facilities are being provided as part of the Sanctuary Estate development. The study area also has three existing centres that comprise community facilities floor space.

The social infrastructure within and immediately surrounding the study area are generally adequate only to service the existing population. Given the estimated projected population growth in the study area, the current facilities will not remain adequate.

A range of planning benchmarks were examined to develop an indication of the social infrastructure needs and demands attributable to future development in the study area, including State Government guidelines, Council’s community assets policy, CP4 and other comparable contributions plans, the current rates of provision in the study area, and the facilities proposed as part of future developments (such as Coal and Allied).

A set of facility planning principles were prepared to inform the social infrastructure requirements. These principles focus on providing an equitable distribution of baseline and robust facilities in partnership with others, including the developers who will largely be responsible for creating the new communities in the study area.

A set of requirements and a schedule for the following facilities was prepared. These facilities will be the subject of development contribution requirements imposed under the contributions plan, or of voluntary planning agreements negotiated with developers of land in the study area:

- Passive (developed) open space
- Sportsfields (local and district)
- Outdoor Courts
- Playgrounds
- Skate facilities
- Multi-purpose Community Facilities / Neighbourhood Centres
Calculation of a reasonable development contribution

Monetary contributions for social infrastructure are calculated on a per person or per resident basis, then factored up to a per lot or per dwelling amount.

The monetary contribution per person in a development containing residential dwellings or lots is calculated as follows:

Contribution per resident ($) = \frac{\$INF}{P}

Where:

\$INF = \text{the estimated total cost of all the social infrastructure required to meet the future population in development expected under this Plan (i.e. $34,297,350 – $58,328,985)}

P = \text{the estimated resident population that will require the social infrastructure included in this Plan (i.e. 8,943 persons)}

The per dwelling amount is determined by multiplying the per person contribution by the estimated increase in population as a result of the development, using the assumed dwelling occupancy rates listed in Table 2.1 of this Plan.

The following workings show the calculation of the section 94 contribution rate:

\[
\text{Contribution per resident ($) } = \frac{\$INF}{P} = \frac{34,297,350}{58,328,985} = 0.586 \\
\text{Contribution per standard lot or dwelling ($) } = \frac{\$INF}{P} \times 3.0 = \frac{34,297,350}{58,328,985} \times 3.0 = 5,752.66 \\
\text{Contribution per seniors living dwelling ($) } = \frac{\$INF}{P} \times 1.5 = \frac{34,297,350}{58,328,985} \times 1.5 = 2,434.44
\]

Works program

The proposed social infrastructure works program, and maps showing the location of the infrastructure, are shown on the following pages.
### Table 3.3 Western Corridor social infrastructure schedule

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Description</th>
<th>Land area</th>
<th>Estimated cost of land</th>
<th>Estimated cost of works</th>
<th>Project on costs and contingency allowance</th>
<th>Estimated total cost / apportioned cost of item</th>
<th>Estimated staging and priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Developed passive open space</td>
<td>Minimum of 0.5ha /1,000 people for new development areas = 4.5ha</td>
<td>45,000</td>
<td>$562,500</td>
<td>$2,250,000</td>
<td>$337,500</td>
<td>$3,150,000</td>
</tr>
<tr>
<td></td>
<td>Half roads based on 9 parks each of 5000m², with half the total parks frontage having a facing road</td>
<td>10,080</td>
<td>$126,000</td>
<td>$1,197,000</td>
<td>$179,550</td>
<td>$1,502,550</td>
<td>As and when surrounding development proceeds</td>
</tr>
<tr>
<td>S2</td>
<td>Local sportsfields</td>
<td>Minimum of 7 local fields; double fields facilities each min. 5ha</td>
<td>175,000</td>
<td>$2,187,500</td>
<td>$11,158,000</td>
<td>$1,673,700</td>
<td>$15,019,200</td>
</tr>
<tr>
<td></td>
<td>Half roads based on half the park area frontage of 5ha having a facing road</td>
<td>11,872</td>
<td>$148,400</td>
<td>$2,819,600</td>
<td>$422,940</td>
<td>$3,390,940</td>
<td>As and when surrounding development proceeds</td>
</tr>
<tr>
<td>S3</td>
<td>District sportsfields</td>
<td>Apportioned cost of providing 2 fields at the proposed Creek Road facility</td>
<td>247,600</td>
<td>$508,600</td>
<td>$10,627,121</td>
<td>$1,594,068</td>
<td>$3,637,083</td>
</tr>
<tr>
<td>S4</td>
<td>Outdoor courts</td>
<td>Minimum of 8 sealed courts: 3 x Netball 2 x Basketball 3 x Local Tennis</td>
<td>included in local sports fields</td>
<td>$620,000.00</td>
<td>78,000.00</td>
<td>$698,000.00</td>
<td>As and when surrounding development proceeds</td>
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<tr>
<td>S5</td>
<td>Cricket nets</td>
<td>Minimum of 3 nets</td>
<td>included in local sports fields</td>
<td>$60,000</td>
<td>$0.00</td>
<td>$60.00</td>
<td>As and when surrounding development proceeds</td>
</tr>
<tr>
<td>Item No.</td>
<td>Item Description</td>
<td>Description</td>
<td>Land area</td>
<td>Estimated cost of land</td>
<td>Estimated cost of works</td>
<td>Project on costs and contingencies</td>
<td>Estimated total cost / apportioned cost of item</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------</td>
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<td>------------------------</td>
<td>------------------------</td>
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<td>-----------------------------------------------</td>
</tr>
<tr>
<td>S6</td>
<td>Playgrounds</td>
<td>Minimum of 6 playgrounds</td>
<td></td>
<td>Included in passive open space</td>
<td>750,000.00</td>
<td>112,500.00</td>
<td>862,500.00</td>
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<tr>
<td>S7</td>
<td>Skate/BMX facility</td>
<td>One (1) local facility to be provided in a location TBD</td>
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<td>$600,000</td>
<td>$90,000</td>
<td>$690,000</td>
<td>To be determined</td>
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<td><strong>Sub-total</strong></td>
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<td></td>
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<td></td>
<td><strong>$28,919,273</strong></td>
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<tr>
<td>S8</td>
<td>Local and district multi-purpose community facility</td>
<td>Construction of floor space - land required for second centre only</td>
<td>3,000</td>
<td>$37,500</td>
<td>$4,643,980</td>
<td>$696,597</td>
<td>$5,378,077</td>
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<tr>
<td></td>
<td>Construction of parking area (say 60-80 spaces)</td>
<td></td>
<td></td>
<td>$217,403</td>
<td>$32,610</td>
<td>$250,013</td>
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<tr>
<td></td>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$5,378,077</strong></td>
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<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td><strong>$34,297,350</strong></td>
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</tbody>
</table>
### Social Infrastructure

<table>
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<tr>
<th>Item No.</th>
<th>Item</th>
<th>Description</th>
<th>Land Area</th>
<th>Estimated cost of land</th>
<th>Estimated cost of works</th>
<th>Project on costs and contingency</th>
<th>Estimated total cost/appropriated cost</th>
<th>Estimated staging and priority</th>
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<tbody>
<tr>
<td><strong>Open Space &amp; Recreation</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S1</td>
<td>Developed, passive open space</td>
<td>Minimum of 0.5ha / 1,000 people for new development areas = 4.5ha</td>
<td>45,000</td>
<td>$562,500</td>
<td>$3,109,041</td>
<td>$466,356</td>
<td>$4,137,897</td>
<td>As and when surrounding development proceeds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Half roads based on 9 parks each of 5,000m2, with half the total parks frontage having a facing road</td>
<td>10,080</td>
<td>$126,000</td>
<td>$1,429,281</td>
<td>$214,392</td>
<td>$1,769,673</td>
<td>As and when surrounding development proceeds</td>
</tr>
<tr>
<td>S2</td>
<td>Local Sportsfields</td>
<td>Minimum of 7 local fields; double field facilities each min 5ha 1:1,250</td>
<td>175,000</td>
<td>$2,187,500</td>
<td>$17,305,625</td>
<td>$2,595,844</td>
<td>$22,088,969</td>
<td>As and when surrounding development proceeds</td>
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<tr>
<td></td>
<td></td>
<td>Half roads based on half the park area frontage of 5ha having a facing road</td>
<td>11,872</td>
<td>$148,400</td>
<td>$3,366,750</td>
<td>$505,013</td>
<td>$4,020,163</td>
<td>As and when surrounding development proceeds</td>
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<tr>
<td>Baseball</td>
<td></td>
<td>One Diamond plus associated facilities and amenities 1: 10,000</td>
<td>Included in existing Reserve</td>
<td>$840,000</td>
<td>$126,000</td>
<td>$966,000</td>
<td></td>
<td>As and when surrounding development proceeds</td>
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<tr>
<td>S3</td>
<td>District Sportsfields</td>
<td>Apportioned cost of providing 2 fields at the proposed Creek Rd District Sports Facility</td>
<td>Included in Creek Rd site</td>
<td>$12,689,350</td>
<td>$1,903,403</td>
<td>$4,169,150</td>
<td></td>
<td>As and when surrounding development proceeds</td>
</tr>
<tr>
<td>S4</td>
<td>Outdoor Courts</td>
<td>Minimum 8 sealed courts: 3 x Netball 1:3,000 2 Basketball 1:5,000 3 x Tennis 1:3,000</td>
<td>Included in sportsfields</td>
<td>$1,539,170</td>
<td>$230,875</td>
<td>$1,770,045</td>
<td></td>
<td>As and when surrounding development proceeds</td>
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<tr>
<td>Item No.</td>
<td>Item</td>
<td>Description</td>
<td>Land Area</td>
<td>Estimated cost of land</td>
<td>Estimated cost of works</td>
<td>Project on costs and contingency</td>
<td>Estimated total cost/appropriated cost</td>
<td>Estimated staging and priority</td>
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<td>----------------------------------------</td>
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</tr>
<tr>
<td>S5</td>
<td>Enclosed Dog Exercise Area</td>
<td>Enclosed area 1:10,000</td>
<td>Included in passive open space</td>
<td>$440,000</td>
<td>$56,000</td>
<td>$496,000</td>
<td>As and when surrounding development proceeds</td>
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<tr>
<td>S6</td>
<td>Playgrounds</td>
<td>Minimum of 5 local playgrounds 1:1,500</td>
<td>Included in passive open space</td>
<td>$2,117,518</td>
<td>$317,628</td>
<td>$2,435,146</td>
<td>As and when surrounding development proceeds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Apportioned cost of providing 1 local playground in Nikimba Estate</td>
<td>NA - within existing open space</td>
<td>$368,264</td>
<td>$55,239</td>
<td></td>
<td></td>
<td>As and when surrounding development proceeds</td>
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<tr>
<td></td>
<td>1 district level playground (1:15,000)</td>
<td>NA (investigate location in Blue Gum Hills Regional Park)</td>
<td>$1,563,399</td>
<td>$234,510</td>
<td>$1,797,908</td>
<td></td>
<td>As and when surrounding development proceeds</td>
<td></td>
</tr>
<tr>
<td>S7</td>
<td>Skate/BMX Facility</td>
<td>One (1) local facility to be provided in a location TBD 1:10,000</td>
<td>$763,508</td>
<td>$114,526</td>
<td>$878,034</td>
<td></td>
<td>As and when surrounding development proceeds</td>
<td></td>
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<tr>
<td>S8</td>
<td>Multipurpose community hub</td>
<td>Construction of floorspace</td>
<td>3000</td>
<td>$12,000,000</td>
<td>$1,800,000</td>
<td>$13,800,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
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<td></td>
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<td></td>
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<td></td>
<td><strong>$58,328,985</strong></td>
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</table>
Figure 4  Western Corridor social infrastructure (updated map)
CCL 10/12/19
EXHIBITION OF DRAFT WESTERN CORRIDOR CONTRIBUTIONS PLAN

Item 98 Attachment B: Western Corridor Traffic and Transport Study, 2019 (prepared by Bitzios Consulting)
WESTERN CORRIDOR
TRAFFIC AND TRANSPORT STUDY
FOR
CITY OF NEWCASTLE
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Appendix A: Model Calibration and Validation Technical Note
Appendix B: 2021 Upgrade Concepts
Appendix C: 2026 Upgrade Concepts
Appendix D: 2036 Upgrade Concepts
## Glossary of Terms and Abbreviations

<table>
<thead>
<tr>
<th>Term / Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
</tr>
<tr>
<td>CoN</td>
<td>City of Newcastle</td>
</tr>
<tr>
<td>DoS</td>
<td>Degree of Saturation</td>
</tr>
<tr>
<td>HTS</td>
<td>Household Travel Survey</td>
</tr>
<tr>
<td>LGA</td>
<td>Local Government Area</td>
</tr>
<tr>
<td>LoS</td>
<td>Level of Service</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>TPA</td>
<td>Transport Performance and Analytics</td>
</tr>
<tr>
<td>TZ</td>
<td>Travel Zone</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Background

The Western Corridor of Newcastle includes the suburbs of Minmi, Fletcher and Maryland and is identified by City of Newcastle (CoN) as a major urban land release area. This area is growing rapidly, and CoN has identified the need to review and update its (year 2013) Section 94 contributions plan for this corridor. Bitzios Consulting was commissioned to assess the traffic infrastructure and the pedestrian and cyclist infrastructure needed in this area for the purposes of updating the Section 94 plan. In order to determine traffic infrastructure upgrade needs, a microsimulation traffic model has been created for the study area and used to assess issues and network requirements to cater for expected traffic levels in 2021, 2026 and 2036.

Existing Situation and Growth Challenges

The major development sites in the study area are shown in Figure ES1. Most of these developments rely on Minmi Road for access to Newcastle Link Road. With the Newcastle CBD being a major attractor to the east, there is a heavy orientation of traffic between these development areas and the intersections in the south-east of the study area.

Figure ES1: Development Areas and Road Network

An additional 3,310 dwellings are planned for this area and when added to the 2,634 dwellings which are approved or under construction, results in a total of 5,764 dwellings which need to be accommodated by the road network. This dwelling forecast aligns with the forecast population for an area slightly larger than the study area with an increase from 29,779 residents in 2016 to 42,835 residents in 2046. This growth in the study area will add nearly 50,000 vehicles per day (vpd) to the road network, most of which is orientated towards the south-east confluence of the network. Through traffic on the Newcastle Link Road corridor is forecast to increase by nearly 22,000 vpd between 2016 and 2036.

In 2017, most of the intersections in the study area operated at a Level of Service (LoS) of ‘D’ or better in both the AM and the PM peak hours. LoS E/F is typically identified as the condition where an upgrade would ordinarily be warranted. The exception to the LoS D performance is the Lake Road/Thomas Street/Newcastle Link Road intersection which operates at LoS F in the PM peak. With a heavy reliance on Minmi Road for distributing development traffic to/from the
south-east, there are significant challenges in providing sufficient road capacity in this corridor, particularly at its southern end which is already heavily trafficked.

**Upgrades Needs Assessment Process**

Traffic demands were calculated for each of the assessment years of 2021, 2026 and 2036 based on expected rates of development in each of the approved and planned development areas, as well as the growth in through traffic on the Newcastle Link Road corridor. Any ‘likely’ road network upgrades such as the Roads and Maritime proposal to replace the roundabout at Minmi Road / Newcastle Link Road with a major signalised intersection and the CoN upgrades proposed in the Wallsend Local Centre were then added to 2017 network to create the 2021 ‘Do Minimum’ network.

The assessment then involved progressively adding traffic upgrades to the network in 2021, targeting LoS D or better at every intersection in both the AM and PM peak hours. The 2021 ‘Option Model’ network was then used as the 2026 Do Minimum network and run with 2026 traffic demands. The process was repeated for 2036 and culminated in a schedule of upgrade works required for 2021, 2026 and 2036 for intersection upgrades and road link upgrades. Footpath and cycleway upgrades were also identified based on ‘missing links’ and logical extensions of facilities into development areas.

**Traffic Infrastructure Upgrade Needs: 2021**

The following upgrade needs have been identified for year 2021:

- **Cowper Street / Lake Road Intersection:**
  - addition of one extra circulating lane between the Southern and Western approaches; and
  - one additional exit lane on the Southern approach.

- **Cowper Street / Newcastle Road Intersection:**
  - change from priority control to a 4-way, one lane roundabout.

- **Sandgate Road / Wilkinson Avenue / Tillie Street Intersection:**
  - realign the Wilkinson Avenue approach to join Sandgate Road / Tillie Street intersection and signalise the intersection with pedestrian crossings across the Sandgate Road (E), Wilkinson Avenue and Tillie Street approaches of the intersection;
  - an additional lane on the Tillie Street approach (80m long);
  - an additional lane on the Sandgate Road departure; and
  - extend the short lane by banning peak hour kerb side parking on the approach and departure of Sandgate Road (W) as far as Dennis Place.

- **Cowper Street / Cameron Street Intersection:**
  - ban the east to north right turn movement at the Cowper Street / Cameron Street intersection and introduce traffic signals at the Minmi Road/Sandgate Road intersection to provide the east to north right turn;
  - reconfigure the intersection to incorporate an additional left turn slip lane from Minmi Road (N) to Sandgate Road (E) at the Sandgate Road/Minmi Road intersection;
  - an additional lane on the departure side of Longworth Avenue; and
  - reconfigure the intersection to allow two through lanes for eastbound traffic.

- **Minmi Road / Awabakal Road Intersection:**
  - introduce an additional traffic lane for the westbound traffic.

- **Minmi Road / Highland Way Intersection:**
  - reconfigure the current priority (T) intersection to a 4-way single lane roundabout.

- **Minmi Road / Woodford Street Intersection:**
  - an additional right turn lane on Woodford Street (S) and an additional departure lane on Minmi Road (E).

- **Mid-block Road Capacity Improvements:**
  - widen Minmi Road eastbound to two lanes between Awabakal Drive and Maryland Drive, Maryland Drive and Bottlebrush Boulevard, Bottlebrush Boulevard and Warkworth Street and Warkworth Street and Summerhill Road; and
  - widen Minmi Road southbound to two-lanes between Cowper Street/Cameron Street and Longworth Avenue/Newcastle Road.
Traffic Infrastructure Upgrade Needs: 2026

The following upgrade needs have been identified for year 2026 (in addition to those in 2021):

- **Cowper Street / Kokera Street Intersection:**
  - an additional lane (80m long) for the east to north movement;
  - an additional eastbound lane on the Cowper Street departure as far as Brooks Street; and
  - re-configure the eastbound kerb side lane to be a shared left and through lane.

- **Cowper Street / Nelson Street Intersection:**
  - an additional departure lane in Cowper Street (E) as far as Murnin Street; and
  - extend the westbound short lane between Nelson Street and Newcastle Road.

- **Cowper Street / Newcastle Road Intersection:**
  - an additional short northbound lane (25m long) on the northbound approach of Newcastle Road and consequently an additional short lane (60m) on the exit side of Cowper Street (E).

- **Sandgate Road / Wilkinson Avenue / Tillie Street Intersection:**
  - extend the two-lane section on the Tillie Street approach by 70m.

- **Cowper Street / Cameron Street Intersection:**
  - an additional southbound lane at the Minmi Road/Sandgate Road/Cowper Street/Cameron Street intersection; and
  - an additional northbound short lane (65m) at the Longworth Avenue approach.

- **Minmi Road / Bunnings Intersection:**
  - an additional departure lane northbound; and
  - re-configure the northbound approach so that the kerb side lane is shared between through and left turning traffic.

- **Minmi Road / Maryland Drive Intersection:**
  - re-configure the southbound left turn from priority control (give-way) to a slip lane configuration and introduce an additional traffic lane on the eastbound departure.

- **Minmi Road / McNaughton Avenue Intersection:**
  - additional lane eastbound and westbound; and
  - exclusive (60m) left turn lane on McNaughton Avenue.

- **Minmi Road / Woodford Street Intersection:**
  - an additional northbound lane between Bell Street and Minmi Road;
  - two left turn lanes on the westbound approach: one 50m lane and one full lane; and
  - an additional southbound lane on Woodford Street south of the intersection.

- **Mid-block Road Capacity Improvements:**
  - widen Minmi Road to two-lanes eastbound between Anna Place and Maryland Drive;
  - widen Minmi Road to three-lanes eastbound between Maryland Drive and Fletcher Street;
  - widen Minmi Road to two-lanes westbound between Bunnings and Macquarie Street and between Maryland Drive and Anna Place;
  - widen Minmi Road to two-lanes eastbound between Mclnnes Street and McCarthy Street and between McCarthy Street and Mclnnes Street;
  - widen Cowper street to two-lanes eastbound between Kokera Street and Nelson Street, between Newcastle Road and Union Street and between John Street and Minmi Road;
  - widen Cowper Street to two-lanes westbound between Union Street and Newcastle Road;
  - ban peak hour kerb side parking along Woodford Street between Minmi Road and Railway Street southbound and between Bell Street and Minmi Road northbound; and
  - ban peak hour kerb side parking along Cowper Street between Lake Road and Kokera Street and between Nelson Street and Newcastle Road eastbound and between Newcastle Road and Nelson Street westbound and between Kokera Street and Lake Road westbound.
Traffic Infrastructure Upgrade Needs: 2036

The following upgrade needs have been identified for year 2036 (in addition to those in 2021 and 2026):

- **Cowper Street / Newcastle Road Intersection:**
  - extend the additional short northbound traffic lane as far as Dangar Street; and
  - extend the additional short departure lane in Cowper Street (E) to a full traffic lane.

- **Cowper Street / Cameron Street Intersection:**
  - free-flow left turn lane from north to east traffic at the Minmi Road / Sandgate Road intersection.

- **Sandgate Road / Wilkinson Avenue / Tillie Street Intersection:**
  - re-configure the short lane heading east to west on Sandgate Road to a full lane between Sandgate Road/Wilkinson Avenue/Tillie Street and Minmi Road/Sandgate Road.

- **Minmi Road / Bunnings Intersection:**
  - introduce traffic signals with pedestrian crossings on all three approaches;
  - three through lanes and one dedicated turn lane (35m long) on the southbound approach; and
  - three through lanes on the northbound approach.

- **Minmi Road / Macquarie Street / Creek Road Intersection:**
  - additional lane eastbound and westbound on Minmi Road; and
  - ban peak hour kerb side parking at the Macquarie Street approach to provide two full lanes.

- **Minmi Road / Warkworth Street Intersection:**
  - additional lane on Minmi Road eastbound; and
  - an additional 50m left turn lane on Warkworth Street.

- **Minmi Road / Kurraka Drive Intersection:**
  - an additional lane on Minmi Road eastbound; and
  - an additional 60m left turn short lane on Kurraka Drive.

- **Minmi Road / Highland Way Intersection:**
  - re-configure the roundabout to a priority type (give-way) intersection. This is required to reduce delays for the eastbound and westbound Minmi Road movements by prioritising them over the minor legs of the intersection; and
  - an additional left turn lane on the Highland Way northbound approach; and
  - an additional traffic lane on Minmi Road eastbound.

- **Minmi Road / Blue Gum Hills Road Intersection:**
  - an additional traffic lane on Minmi Road eastbound; and
  - an additional free flow short left turn lane on Blue Gum Hills Road (south); and
  - an additional westbound traffic lane on Minmi Road west of the intersection.

- **Minmi Road / Woodford Street Intersection:**
  - ban peak hour kerb side parking on Woodford Street southbound approach to provide two traffic lanes.

- **Mid-block Road Capacity Improvements:**
  - widen Minmi Road to two-lanes eastbound between McCarthy Street and Awabakal Drive;
  - widen Minmi Road to three-lanes eastbound between Fletcher Street and Sandgate Road;
  - widen Minmi Road to three-lanes westbound between Sandgate Road and Maryland Drive;
  - widen Minmi Road to two-lanes westbound between Summerhill Road and Bottlebrush Boulevard, between Bottlebrush Boulevard and Churnwood Drive, and between Blue Gum Hills Road and Mclnnes Street;
  - widen Cowper Street to two-lanes each way between Union Street and John Street;
  - ban peak hour kerb side parking on the Woodford Street Southbound to provide two lanes;
  - ban peak hour kerb side parking along Woodford Street northbound (Railway Street to Bell Street); and
  - ban peak hour kerb side parking on Sandgate Road (Minmi Road to Tillie Street).

*It is important to note that the following upgrade will only be required if the full level of development in the model area is realised. It may be preferable that this project not be further considered now, and the (roundabout) intersection is monitored into the future to determine if this configuration needs to be changed at that time. This change, if required, would be likely to require the following:*
  - re-configure the roundabout to a priority type (give-way) intersection. This is required to reduce delays for the eastbound and westbound Minmi Road movements by prioritising them over the minor legs of the intersection; and
  - an additional left turn lane on the Highland Way northbound approach; and
  - an additional traffic lane on Minmi Road eastbound.
Link Road Testing

In an attempt to reduce the scale of upgrade works required along Minmi Road between 2021 and 2036, a new ‘Link Road’ was tested to provide an alternative connection between Minmi Road (near Summerhill Road) and Bulkara Street, located to the west of Minmi Road. This road was tested using the 2036 Option model with all of the proposed 2036 upgrades in.

The new link was forecast to attract approximately 780vph in the AM peak and 940vph in the PM peak which would equate to approximately 10,000 vpd. Whilst not an insignificant volume of traffic taken off Minmi Road, the improvements to intersections along Minmi Road were shown to be relatively small, with no significant savings in 2036 upgrades required on Minmi Road.

Also, the diverted traffic to this new link adversely affected the Warkworth Street / Minmi Road intersection in the AM peak and the Newcastle Road / Cowper Street intersection during the PM peak. The modelling shows that the queues of right turn traffic will extend back to the Warkworth Street intersection thereby restricting traffic flows from that road. The Wakenworth Street / Minmi Road intersection would be warranted to be upgraded as it reports a LoS F with average delays in the order of 120 seconds in the AM peak with the proposed Link Road in place. In the PM peak, a significant number of trips travelling from Newcastle City Centre to Minmi would use the bypass route. These vehicles would use the Newcastle Road / Cowper Street intersection to access the bypass.

Footpath and Cycleway Upgrade Needs

Additional footpath and cycleway links have also been identified based on the assessment of missing links and new links needed to service new development areas. In total, 15 footpath projects and four (4) cycleway projects have been identified, as follows:

- **Footpath projects:**
  - 1: Mowane Street to Awabakal Drive
  - 2: St Andrews Way to Styles Close
  - 3: Waterside Drive to Hebrides Road
  - 4: Waterside Drive to Tartan Place
  - 5: Waterside Drive to Plattsburg Parade
  - 6: Wedgetail Street to Crestview Street
  - 7: Wedgetail Street to Crestview Street
  - 8: Pebblestone Street to Kingfisher Drive
  - 9: Pebblestone Street to Kingfisher Drive
  - 10: Tallowood Crest to Jetty Parade
  - 11: Cottonwood Chase to Weller Street
  - 12: Beech Close to Weller Street
  - 13: Along Minmi Road (between Churnwood Drive & Bellbird Close)
  - 14: Minmi Road to Glendore Parade
  - 15: Minmi Road to Yapug Close

- **Cycleway projects:**
  - 1: Blue Gum Hills Road to Brookfield Avenue (Northern side of Minmi Road)
  - 2: Brookfield Avenue to Blue Gum Hills Road (Southern side of Minmi Road)
  - 3: Britannia Boulevard to Brookfield Avenue
  - 4: Maryland Drive to Summerhill Road

Traffic Infrastructure Costs

Concept-level cost estimates have been prepared for each of the upgrade items identified as being needed to cater for expected traffic growth between 2017 and 2036. These costs are summarised as follows:

<table>
<thead>
<tr>
<th>Period</th>
<th>Intersection Works</th>
<th>Road Widening Works</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 2021</td>
<td>$17,247,077</td>
<td>$15,369,694</td>
<td>$32,616,771</td>
</tr>
<tr>
<td>2021-2026</td>
<td>$10,411,277</td>
<td>$18,259,274</td>
<td>$28,670,551</td>
</tr>
<tr>
<td>2026-2036</td>
<td>$38,655,766</td>
<td>$113,877,237</td>
<td>$152,533,002</td>
</tr>
<tr>
<td>Total (to 2036)</td>
<td>$66,314,120</td>
<td>$131,639,927</td>
<td>$197,954,047</td>
</tr>
</tbody>
</table>
Whilst this is a significant infrastructure upgrade budget, a large proportion of the need for these upgrades is associated with ‘background’ traffic that was already using this infrastructure in 2017 or is part of growth in ‘external’ traffic. For example, the proportion of ‘new development’ traffic of total traffic within the study area by each year is:

- By 2021: 8% of total traffic in the study area;
- By 2026: 14% of total traffic in the study area; and
- By 2036: 26% of total traffic in the study area.

The network is already approaching capacity, and there are few committed upgrades to address issues generated by traffic that is already there. The additional development traffic will exponentially increase delays and congestion given prevailing congestion levels. This is why the quantum of upgrades needed for the network to operate at reasonable levels of service in 2036 is significant relative to the level of new development expected.

Footpath and Cycleway Infrastructure Costs

The proposed footpath and cycleway infrastructure costs are itemised as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Footpath Works</th>
<th>Cycleway Works (1)</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 2021</td>
<td>$2,260,591</td>
<td>$-</td>
<td>$2,260,591</td>
</tr>
<tr>
<td>2021-2026</td>
<td>$2,814,678</td>
<td>$1,094,621</td>
<td>$3,909,299</td>
</tr>
<tr>
<td>2026-2036</td>
<td>$1,994,550</td>
<td>$-</td>
<td>$1,994,550</td>
</tr>
<tr>
<td>Total (to 2036)</td>
<td>$7,069,819</td>
<td>$1,094,621</td>
<td>$8,164,440</td>
</tr>
</tbody>
</table>

(1) It is expected that additional cycleway works will be delivered as part of proposed road widening works under the Traffic Infrastructure Upgrades

Conclusions

Key conclusions from the assessment of traffic and transport infrastructure upgrades required in the Newcastle West Corridor study area are:

- site observations in 2017 revealed that there was inadequate parking, cycling and pedestrian infrastructure in parts of the study area and the Minmi Road / Cowper Street intersection is already congested;
- almost 50,000 trips per day will be added to the road network through approved and planned developments and most of this traffic relies on Minmi Road for access to the Newcastle Link Road and/or Cowper Street;
- development growth (if realised in the timeframes forecast) results in significant worsening of intersection performance and travel times across the study area by 2021 given that many intersections in the south-east of the network were approaching capacity in 2017, with minimal upgrades committed;
- the suite of proposed upgrades proposed for 2021, 2026 and 2036 reduces vehicle travel times to slightly in excess of the 2017 base case performance in 2021 however there is still some overall increase in travel times in 2026 and 2036 with the upgrades. This is partly due to the presence of more signalised intersections. Most intersections however are shown to operate at LoS D or better with the upgrades proposed;
- the potential ‘Link Road’ between Minmi Road (near Summerhill Road) and Bulkara Street whilst heavily used as a two-lane road, would result in a relatively small improvement at parallel intersections on Minmi Road. The traffic diverted to this new link impacts the Warkworth Street / Minmi Road intersection in the AM peak and the Newcastle Road / Cowper Street intersection during the PM peak. The Warkworth Street / Minmi Road intersection would need to be upgraded with average delays of 120 seconds (LoS F) in the AM peak;
- The proposed suite of works (traffic, footpath and cycleways infrastructure combined) to maintain a reasonable level of service across the study area is estimated to cost (approximately):
  - $38,740,851 by 2021;
  - An additional $32,579,580 by 2026; and
  - An additional $154,527,552 by 2036.

The network is approaching capacity now and further traffic will exponentially increase delays and congestion. The suite of upgrades proposed in 2021, 2026 and 2036 will provide levels of service similar to, but slightly worse than those experienced in 2017. A significant number of upgrades are required at an overall costs in excess of $226M to cater for an expected increase of over 50,000 vpd with expected development and an increase of 22,000 vpd of through traffic. In addition, the modelling has revealed that the Newcastle Link Road corridor will be at capacity by 2036 which will affect the ability for traffic from the Minmi Road catchment to access this corridor and will generate queues back from this corridor into the study area.
1. INTRODUCTION

1.1 BACKGROUND

The Western Corridor is an urban release area centred on the suburbs on Minmi, Fletcher and Maryland in the western part of the Newcastle Local Government Area (LGA). The first Western Corridor Section 94 Contribution Plan was developed in December 1995. This plan since been subsequently amended twice; first in 2006 and then in 2013, in order to reflect changes in demography, development scale and types and increases in the construction cost of the upgrades in the schedule.

The City of Newcastle (CoN) has identified the need to update the 2013 Western Corridor Section 94 Contribution Plan.

At the time when the 2013 plan was published, a total of 67% of the area was either developed or covered by an approved development application. The Western Corridor area including the remaining 33% of ‘greenfield area’ was estimated to have the potential to contain 9,578 additional dwellings. The 2013 plan reported multiple intersections along Minmi Road incurring unacceptable Levels of Service (LoS) in at least one peak period, based on forecast 2016 traffic volumes at that time. The Plan proposed approximately $3 million of upgrades along the Western Corridor. The majority of upgrades comprised of additional lanes along Minmi Road and minor modifications to intersection geometry. The planned suite of upgrades also included an off-road cycleway from Britannia Boulevard to Woodford Street.

1.2 STUDY PURPOSE

Bitzios Consulting has been commissioned by CoN to undertake a traffic and transport study of the Western Corridor to inform an updated 20-year works program and to provide the necessary information to recalculate contributions from planned developments. This traffic and transport study considers future road network requirements for general traffic, as well as required footpath and cycleways infrastructure, including indicative costs and staging.

The locality of the study area is shown in Figure 1.1.

Source: Google Maps

Figure 1.1: Study Area and Locality
A traffic microsimulation model was created to inform the assessment of traffic infrastructure upgrade needs.

Other key tasks included:

- analysis of the existing traffic and crash data and assess the operational performance of 29 intersections in the study area;
- identification of future development and when it is expected to be constructed, calculate the trip generation of these developments and forecast the growth in external trips through the study area in order to establish study area traffic demands for 2021, 2026 and 2036;
- use of the models to understand the future year traffic performance of intersection and links in the study area and identify future operational performance issues;
- development, testing and optimisation of traffic infrastructure improvement measures to identify priorities for their staged implementation. As part of this work the performance of the proposed north-south ‘Link Road’ west of Minmi Road was also assessed and its impact on key intersections was documented;
- preparation of concept-level cost estimates for the traffic infrastructure upgrades required to support future traffic levels; and
- determination of the primary bicycle and pedestrian upgrade requirements to service new development areas including cost estimates and staging.
2. **EXISTING TRAFFIC AND TRANSPORT CONDITIONS**

2.1 **ROAD HIERARCHY**

The road network within the study area contains a mix of local, regional and state roads. Newcastle Link Road and Minmi Road are the primary routes in the area, delivering traffic to, from and between the Pacific Motorway and the Newcastle CBD. The majority of traffic generated within the study area uses Minmi Road to access the Newcastle Link Road.

The classification of the roads within the study are:

- **State Roads**:
  - Newcastle Link Road;
  - Thomas Street;
  - Newcastle Road; and
  - Lake Road;
- **Regional Roads**:
  - Cameron Park Drive; and
  - Minmi Road (the southern section between Newcastle Link Road south to Main Road, Edgeware).
- **Local Roads**:
  - all other roads.

The study area’s road hierarchy is illustrated in Figure 2.1.

![Figure 2.1: Road Hierarchy](image)

2.2 **MINMI ROAD CORRIDOR**

2.2.1 **General**

Most of the new development in the study area relies on Minmi Road (north of Newcastle Link Road). Minmi Road is a two-lane undivided road, which connects Woodford Street in the west to Cameron Street / Cowper Street in the east, linking the suburbs of Minmi, Maryland and Wallsend. Minmi Road generally services the relatively new low-density housing developments that are located on either side of this sub-arterial road. Minmi Road also links several key non-residential developments including Summerhill Waste Management Centre, Bunnings Warehouse (near Sandgate Road) and a large industrial estate (near Creek Road).
are six signalised intersections, and five roundabouts on Minmi Road. In addition, there are several priority intersections, mostly servicing the residential developments on both either side of the road.

### 2.2.2 Major Intersections

The key intersections along Minmi Road (from west to east/south-east) are as follows:

- Minmi Road / Woodford Street;
- Minmi Road / Britannia Boulevard;
- Minmi Road / Kurraka Drive;
- Minmi Road / Awabakal Drive / Bellbird Close;
- Minmi Road / Churnwood Drive / Maryland Drive;
- Minmi Road / Bottlebrush Boulevard;
- Minmi Road / Summerhill Road;
- Minmi Road / Maryland Drive;
- Minmi Road / Creek Road / Macquarie Street;
- Minmi Road / Bunnings Access; and
- Minmi Road / Cameron Street / Cowper Street.

Table 2.1 provides a description of the layout of key intersections along Minmi Road.

**Table 2.1: Intersection Descriptions**

<table>
<thead>
<tr>
<th>Intersection Description</th>
<th>Intersection Layout</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Woodford Street</strong></td>
<td><img src="image" alt="Woodford Street Diagram" /></td>
</tr>
<tr>
<td>This is a signalised T-intersection where Minmi Road provides one lane in each direction. Woodford Street provides a right turn pocket from the south approach and a left turn pocket from the north approach. No significant queues currently exist during the AM and PM peak hours.</td>
<td></td>
</tr>
</tbody>
</table>

<p>| <strong>Britannia Boulevard</strong>  | <img src="image" alt="Britannia Boulevard Diagram" /> |
| This single lane roundabout services the low-density residential area to the south. No congestion currently exists during the AM and PM peak. |</p>
<table>
<thead>
<tr>
<th>Intersection Description</th>
<th>Intersection Layout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kurraka Drive</td>
<td>This single lane roundabout provides access to the low-density residential area to the south. There is a ‘bypass’ lane for westbound through traffic on Minmi Road. No congestion exists during the AM and PM peaks.</td>
</tr>
<tr>
<td>Awabakal Drive / Bellbird Close</td>
<td>This is a signalised intersection providing access to the low-density residential areas to the north and south. It also provides access to an existing high school to the north. Minmi Road has a right turn pocket on both its approaches. During the AM peak some queues exist for right turning traffic the westbound approach of Minmi Road, with these queues generally clearing every signal cycle. Some queues are also present in the southern approach. No significant queues are present during the PM peak.</td>
</tr>
<tr>
<td>Churnwood Drive / Maryland Drive</td>
<td>This is a signalised intersection providing access to the low-density residential areas to the north-east and south-west. It also provides access to the retail development located off Churnwood Drive. Minmi Road provides right turn pockets on both approaches. Traffic queues exist on both of the Minmi Road approaches during the AM and PM peak periods, with the long queues generally clearing in every signal cycle.</td>
</tr>
<tr>
<td>Bottlebrush Boulevard</td>
<td>This roundabout provides access to the low-density residential area to the south (west). Minmi Road provides two lanes in each direction on its the approaches. No congestion occurs during the AM and PM peak sites.</td>
</tr>
<tr>
<td>Intersection Description</td>
<td>Intersection Layout</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td><strong>Summerhill Road</strong></td>
<td><img src="image" alt="Summerhill Road Layout" /></td>
</tr>
<tr>
<td>This roundabout provides access to the Summerhill Waste Management Centre to the south-west. Minmi Road provides two lanes in each direction on its approaches. In the AM peak, queues of slow moving vehicles occur on the eastbound approach and no congestion occurs during the PM peak.</td>
<td></td>
</tr>
</tbody>
</table>

| **Maryland Drive**       | ![Maryland Drive Layout](image) |
| This is a signalised intersection providing access to the low-density residential areas to the north. Minmi Road provides a two-lane right turn pocket in its westbound approach and a left turn pocket on its eastbound approach. Queues of slow moving traffic occur on Minmi Road eastbound during the AM peak. In the PM peak, right turn queues occur on the westbound approach but generally clear in every signal cycle. |

| **Creek Road / Macquarie Street** | ![Creek Road / Macquarie Street Layout](image) |
| This is a signalised intersection providing access to the commercial/industrial area to the north. Minmi Road has right turn pockets in both its eastbound and westbound approaches and a left turn pocket westbound. Queues of slow moving traffic are evident eastbound on Minmi Road during the AM peak. In the PM peak, queues occur on the westbound approach but generally each signal cycle. |

| **Bunnings Access**      | ![Bunnings Access Layout](image) |
| This roundabout provides access to Bunnings Warehouse. Minmi Road has one lane for through traffic in both of its approaches. The Minmi Road westbound approach also provides a left turn pocket for turns into Bunnings. Queues of slow moving traffic occur eastbound on Minmi Road during the AM peak. In the PM peak, queues occur in the westbound approach primarily as a platoon of vehicles arriving from the Cameron Street / Cowper Street intersection. |
### 2.2.3 Safety Considerations

During the site visit it was observed that at the Minmi Road intersection with Churnwood Drive, vehicles turning right from Churnwood Drive onto Minmi Road have poor forward visibility of oncoming traffic from the opposite leg of the intersection (Maryland Drive). Given right turning traffic filters across opposing traffic, inadequate sightlines increase the risk of conflict between vehicles. This problem is exacerbated at night when visibility is reduced. The view from the stop-line at the Churnwood Drive approach is shown in Figure 2.2.

![Difficult right turn from Churnwood Drive onto eastbound Minmi Road](image_url)
2.2.4 Speed Environment

The posted speed limits within the study area are shown in Figure 2.3. Minmi Road generally has a posted speed limit of 60 km/h however there is a short section in the west of the study area posted at 50 km/h. There is also a section between Blue Gum Hill Road and Brookfield Avenue which is posted at 70 km/h predominantly through a rural road environment with limited direct access from the adjacent properties. There is a school zone near the Awabakal Drive / Bellbird Close intersection, which is in operation from 8:00 - 9:30 am and 2:30 - 4:00 pm on school days.

![Figure 2.3: Posted Speed Limits within the Study Area](image)

2.3 FREIGHT ACCESS AND FREIGHT ROUTES

Figure 2.4 shows the freight routes in the study area which are:

- Newcastle Link Road, Thomas Street and Newcastle Road east of Thomas Street / Longworth Avenue which are all designated B-double and HML B-double routes; and
- Longworth Avenue and Minmi Road between Cameron Street / Cowper Street and Summerhill Road which are designated B-double routes.

![Figure 2.4: Freight Routes within the Study Area](image)
2.4 **SURROUNDING LAND USES**

The *Newcastle Local Environmental Plan 2012 Land Zoning Maps 1B, 2A, 2B and 2C*, and the *Lake Macquarie Local Environmental Plan 2014 Land Zoning Maps 8A, 8B and 8C*, shows that the study area is includes and is surrounded by the following land use zones:

- B1 Neighbourhood Centre;
- B2 Local Centre;
- E1 National Parks and Nature Reserves;
- E2 Environmental Conservation;
- E3 Environmental Management;
- E4 Environmental Living;
- IN1 General Industrial;
- IN2 Light Industrial;
- R2 Low Density Residential;
- R3 Medium Density Residential;
- RE1 Public Recreation;
- RE2 Private Recreation; and
- SP2 Infrastructure.

Figure 2.5 shows the land use zoning within and surrounding the eastern parts of the study area in the vicinity of Minmi Road and Longworth Avenue.

![Map showing land use zones](image-url)

*Source: Newcastle Local Environmental Plan 2012*

**Figure 2.5:** Land Zoning - Minmi Road to Longworth Avenue
Figure 2.6 shows the land use zoning in the south-eastern parts of the study area between Newcastle Road and Newcastle Link Road via Thomas Street.

![Figure 2.6: Land Zoning - Newcastle Road to Newcastle Link Road via Thomas Street](image)

Source: Newcastle Local Environmental Plan 2012

Figure 2.7 shows the land use zoning in the southern parts of the study area along Newcastle Link Road.

![Figure 2.7: Land Zoning - Newcastle Link Road](image)

Source: Lake Macquarie Local Environmental Plan 2014

The majority of the study area contains low density residential zones. Local centre and recreation zones are spread throughout the study area with western parts of the study area including environmental conservation area and eastern parts of the study area surrounded by light industrial and medium density residential zones.
2.5 DEMOGRAPHICS

2.5.1 Population

Population forecasts published by NSW Transport Performance Analytics (TPA) which is based on Australian Bureau of Statistics (ABS) 2016 Census data are shown in Figure 2.9. The ABS shown has been combined for the Travel Zones (TZs) within and immediately adjacent to the study area as per Figure 2.8.

Figure 2.8: Travel Zones included in the Study Area

The TPA data indicates that the study area’s population is expected to increase by 50% over the next three decades, from approximately 30,000 to 43,000 people. The highest population increase is forecast for the Minmi TZs where the population is expected to grow by over 300 percent, followed by Fletcher, Jesmond and Maryland.

Figure 2.9: 2021 - 2046 Population Forecasts
Figure 2.10 provides average annual population growth forecasts for every 5-year period until 2046. An average growth rate of 1.3% p.a. is predicted in the 25-year period between 2021 and 2046.

Source: NSW Travel Zone Explorer

**Figure 2.10: 2021-2046 Average Annual Population Forecasts**

### 2.5.2 Employment

The number of people employed within the study area is forecast to increase by approximately 4,000 between 2016 and 2046 as shown in Figure 2.11 below.

Source: NSW Land Use Planner – Employment

**Figure 2.11: 2021-2046 Employment Forecasts**

### 2.6 CURRENT TRAVEL PATTERNS

#### 2.6.1 Trip Purpose

The study area is situated in the Newcastle LGA, where on average 558,000 trips are made on a typical weekday. Figure 2.12 below shows the purpose of trips from the LGA in 2016/17.

Social recreation trips make up 25% of all trips, followed by work trips, including business trips, and shopping trips (22% and 18% respectively). Education or child care-related trips constitute only 5% of all trips.

Although work trips make up approximately 22% of all trips, they account for 31% of all kilometres travelled.
2.6.2 Public Transport Networks and Services

Data for public transport services within the study area was obtained from the Transport for NSW website. Table 2.2 details the bus services and Figure 2.13 shows these routes within and around the Wallsend Town Centre. Bus services and stop locations along Minmi Road and Woodford Street corridors are shown in Figure 2.14.

Table 2.2: Bus Services and Stop Locations – Wallsend Town Centre

<table>
<thead>
<tr>
<th>Route Number</th>
<th>Route Direction</th>
<th>Route Reference in Figure 2.13</th>
<th>Stops</th>
</tr>
</thead>
<tbody>
<tr>
<td>222</td>
<td>Wallsend to Newcastle Via Lambton</td>
<td>cf</td>
<td>231, 222</td>
</tr>
<tr>
<td>231</td>
<td>Newcastle to Wallsend Via Jesmon</td>
<td>cf</td>
<td>231, 222</td>
</tr>
<tr>
<td>230</td>
<td>Newcastle to Wallsend Via North Lambton</td>
<td>cd</td>
<td>226, 267, 222, 235, 230</td>
</tr>
<tr>
<td>235</td>
<td>Newcastle to Wallsend Via Hamilton</td>
<td>cd</td>
<td>226, 267, 261, 235, 230</td>
</tr>
<tr>
<td>267</td>
<td>Wallsend to West Wallsend</td>
<td>he</td>
<td>260, 270, 261, 226, 267</td>
</tr>
<tr>
<td>160</td>
<td>Woodonga to Albury Via Birallee and Oakmount (Loop Service)</td>
<td>ae</td>
<td>260, 270, 261, 261, 267</td>
</tr>
<tr>
<td>260</td>
<td>University of Newcastle to Minimi Via Wallsend Marylands &amp; Fletcher</td>
<td>be</td>
<td>261, 226, 231</td>
</tr>
<tr>
<td>261</td>
<td>University of Newcastle to Minimi Via Wallsend Marylands</td>
<td>be</td>
<td>226, 230, 260, 267</td>
</tr>
<tr>
<td>270</td>
<td>University of Newcastle to Toronto West</td>
<td>he</td>
<td>260, 270, 267</td>
</tr>
<tr>
<td>226</td>
<td>Newcastle to Glendale</td>
<td>be</td>
<td>260, 270, 267</td>
</tr>
<tr>
<td>224</td>
<td>Wallsend to Newcastle Via Kotara</td>
<td>ch</td>
<td>224, 267, 270</td>
</tr>
</tbody>
</table>
Figure 2.13: Bus Service Routes and Stops – Wallsend Town Centre and Surrounding
Figure 2.14: Bus Service Routes and Stops – Minmi Road
2.7 TRAFFIC VOLUMES AND PATTERNS

2.7.1 Intersection Counts

Intersection count data, collected by Seca Solution for the AM and PM peak periods on Wednesday 2\textsuperscript{nd} November and Thursday 10\textsuperscript{th} November 2016, was provided by Council for the following locations:

- 101 – Woodford Street at Newcastle Link Road;
- 102 – Woodford Street at Minmi Road;
- 103 – Brookfield Avenue at Minmi Road;
- 104 – Highland Way at Minmi Road;
- 105 – Britannia Blvd at Minmi Road;
- 106 – Kurraka Dr at Minmi Road;
- 107 – Awabakal Drive at Minmi Road;
- 108 – Churnwood Drive at Minmi Road;
- 109 – Bottlebrush Blvd at Minmi Road;
- 110 – Warkworth Street at Minmi Road;
- 111 – Summerhill Road at Minmi Road;
- 112 – McNaughton Ave at Minmi Road;
- 113 – Maryland Drive at Minmi Road;
- 114 – Creek Road at Minmi Road;
- 115 – Minmi Road at Bunnings;
- 116 – Sandgate Road at Minmi Road; and
- 117 – Cowper Street at Minmi Road.

Turn count surveys were undertaken by Traffic Data and Control (TDC) on Thursday 2\textsuperscript{nd} March 2017 for the AM and PM peak periods at the following intersections:

- 118 – Tillie Street at Sandgate Road;
- 119 – Tillie Street at Wilkinson Avenue;
- 120 – Cameron Street at Tillie Street;
- 121 – Walford Street at Thomas Street;
- 122 – Newcastle Road at Longworth Avenue;
- 123 – Newcastle Road at Cowper Street;
- 124 – Cowper Street at Kokera (Shopping Centre Access);
- 125 – Thomas Street at Metcalfe Street;
- 126 – Cowper Street at Lake Road;
- 127 – Lake Road at Newcastle Link Road;
- 128 – Newcastle Link Road at Minmi Road (South); and
- 129 – Cowper Street at Nelson Street.

Commercial Vehicles

The AM and PM peak traffic data were analysed for Minmi Road at its intersection with Bunnings Warehouse to determine the proportion of commercial vehicles (light and heavy vehicles) in the total traffic mix. In the AM peak (between 7.30 am and 9.30 am) the proportion of commercial vehicle in the two-way traffic is 5.6%. In the PM peak (between 4.30 pm and 6.30 pm), the proportion is 1.8%. In the AM peak the westbound traffic on Minmi Road contains a relatively high proportion of commercial vehicles, measuring 9.1% of the total traffic flow.
2.7.2 Weekday AM Peak Period

The weekday AM peak turning movements at all key intersection within the corridor are summarised in Figure 2.15 and Figure 2.16 below.

Figure 2.15: AM Peak (8.00-9.00am) Turning Movement Counts Summary – Section 1
Figure 2.16: AM Peak (08.00-09.00am) Turning Movement Counts Summary – Section 2
2.7.3 Weekday PM Peak Period

The weekday AM peak turning movements at all key intersection within the corridor are summarised in Figure 2.17 and Figure 2.18 below.

Figure 2.17: PM Peak (4.30-5.30pm) Turning Movement Counts Summary – Section 1
Section 2 of 2: Thomas Street, Newcastle Road, Cameron Street, Cowper Street and Lake Road

Figure 2.18: PM Peak (4.30-5.30pm) Turning Movement Counts Summary – Section 2
2.7.4 Link Counts
Mid-block link traffic volumes were collected by TDC on Thursday 2nd March 2017 for the AM and PM peak periods at the following locations within the study area:
- Newcastle Link Road (West of Lake Road); and
- Minmi Road (North of Cowper Street).

2.7.5 Origin-Destination Surveys
Origin-destination surveys were undertaken on Thursday 2nd March 2017 by Matrix for the AM and PM peak periods, considering the following 10 locations:
- 1 – Newcastle Link Road (West of Woodford Road);
- 2 – Minmi Road South (South of Newcastle Link Road);
- 3 – Lake Road (South of Newcastle Link Road);
- 4 – Walford Road (South of Thomas Street);
- 5 – Metcalfe Street (South of Thomas Street);
- 6 – Newcastle Road (East of Thomas Street);
- 7 – Cameron Street (East of Minmi Road);
- 8 – Maryland Drive (North of Minmi Road);
- 9 – Maryland Drive West (North of Minmi Road); and
- 10 – Woodford Street (North of Minmi Road).

Origin-destination survey locations are shown in Figure 2.19. Outcomes from the survey were used to develop a traffic matrix for the study area.

Figure 2.19: Origin-Destination Survey Locations

2.7.6 Travel Times and Speed
Bitzios Consulting commissioned travel time surveys to be conducted along Minmi Road and Newcastle Link Road. The surveys were conducted by TDC, for the AM and PM peak periods on Wednesday 15th March 2017. In order to verify localised delays at various locations, the route was separated into a number of sub-sections. The clockwise and counter-clockwise routes are shown in Figure 2.20.
Results from the travel time survey were used to calculate average travel speeds along the Minmi Road corridor. The AM and PM peak average travel speeds are shown in Figure 2.21 and Figure 2.22.

In the AM peak the average speed drop substantially eastbound between the Maryland Drive and Cowper Street intersections. This is attributed to queues of slow moving vehicles on the Minmi Road eastbound carriageway. In the westbound direction, vehicles generally maintain average speeds between 40 and 50 km/h.

In the PM peak the average speeds on Minmi Road corridor are within the 40 km/h and 50 km/h range. The only exception is the short section in between the Bunnings access and Cowper Road, as shown in Figure 2.22.
Figure 2.22: Average Speed on Minmi Road Corridor – 2017 PM Peak

It should be noted that during the site visit, a work zone of 40km/h was identified between Brookfield Avenue and Highland Way.
2.8 CONGESTION HOTSPOTS

During site visits, significant queues were observed during the AM peak eastbound along Minmi Road between the Summerhill Road and Cowper Street intersections. These queues were observed to be caused by downstream capacity constraints at the Bunnings roundabout. It should be noted the queue was observed to be slow moving and no cars were observed to have stopped. The queueing was maintained to Creek Road after 9:00am.

Figure 2.23: Queueing due to the construction along Minmi Road

Other observed congestion hotspots included the following intersections:

- Minmi Road / Awabakal Drive;
- Minmi Road / Maryland Drive / Churnwood Drive;
- Minmi Road / Maryland Drive (right turn);
- Minmi Road / Cowper Road; and
- Bunnings roundabout.

Queueing at the above signalised intersections cleared within a single cycle. As such, traffic along Minmi Road was mostly free flowing. The largest queues (with the exception of the road works area) occurred on the right movement on the eastern leg of the Minmi Road / Maryland Drive intersection.
2.9 **CRASH DATA ANALYSIS**

2.9.1 **Overall Statistics**

Roads and Maritime provided five-year crash data, between 1st July 2011 and 30th June 2016, for Minmi Road, Longworth Avenue and a section of Woodford Street within the study area. Across the five-year period, a total of 92 crashes were reported on Minmi Road, equating to an average of 18.4 crashes per year. Figure 2.24 illustrates the number of crashes between 2011-12 and 2015-16.

![Number of Crashes 2011-2016](image_url)

**Figure 2.24:** The Number of Crashes Recorded Between July 2011 and June 2016

Figure 2.25 illustrates the proportion of crashes occurring during different conditions, sorted by natural lighting and surface condition.

![Crash Analysis by Conditions](image_url)

**Figure 2.25:** Study Area Crash Analysis – Light vs Dark and Dry vs Wet

2.9.2 **Causality Crash Analysis**

Of the 92 crashes, 61 crashes resulted in casualties of some degree, with the remaining 31 crashes resulting in vehicle damage only. Table 2.4 summarises crash severity and number of casualties. In the period of assessment one person was killed, whilst 15 were seriously injured.
### Table 2.3: Crash Severity and the Number of Casualties

<table>
<thead>
<tr>
<th>Crash Severity</th>
<th>No. of Crashes</th>
<th>%</th>
<th>No. of Casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>1</td>
<td>1%</td>
<td>1</td>
</tr>
<tr>
<td>Serious Injury</td>
<td>15</td>
<td>16%</td>
<td>16</td>
</tr>
<tr>
<td>Moderate Injury</td>
<td>30</td>
<td>33%</td>
<td>37</td>
</tr>
<tr>
<td>Minor Injury</td>
<td>9</td>
<td>10%</td>
<td>10</td>
</tr>
<tr>
<td>Uncategorised</td>
<td>6</td>
<td>7%</td>
<td>7</td>
</tr>
<tr>
<td>Damage Only</td>
<td>31</td>
<td>34%</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>92</strong></td>
<td><strong>100%</strong></td>
<td><strong>71</strong></td>
</tr>
</tbody>
</table>

### 2.9.3 Crash Type

Table 2.4 provides a breakdown of all crash types which occurred in the study area, including the number of crashes and casualties. The most common types of crashes throughout the study area include 'off-road objects', 'rear end', and 'right through' movements.

### Table 2.4: Crash Type Summary

<table>
<thead>
<tr>
<th>Crash Type</th>
<th>No. of crashes</th>
<th>%</th>
<th>No. of Casualties</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross traffic</td>
<td>3</td>
<td>3%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Emerging from drive</td>
<td>4</td>
<td>4%</td>
<td>5</td>
<td>7%</td>
</tr>
<tr>
<td>Fell in/from vehicle</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Head on</td>
<td>4</td>
<td>4%</td>
<td>5</td>
<td>7%</td>
</tr>
<tr>
<td>Left near</td>
<td>2</td>
<td>2%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Left rear</td>
<td>3</td>
<td>3%</td>
<td>5</td>
<td>7%</td>
</tr>
<tr>
<td>Left turn sideswipe</td>
<td>2</td>
<td>2%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Off left/left bend</td>
<td>2</td>
<td>2%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Off left/right bend</td>
<td>1</td>
<td>1%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Off left/right bend, hit object</td>
<td>9</td>
<td>10%</td>
<td>4</td>
<td>6%</td>
</tr>
<tr>
<td>Off left/left bend, hit object</td>
<td>3</td>
<td>3%</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Off road to left, hit object</td>
<td>6</td>
<td>7%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Off road to right, hit object</td>
<td>3</td>
<td>3%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Off road to left</td>
<td>2</td>
<td>2%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Off right/left bend, hit object</td>
<td>3</td>
<td>3%</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Off right/right bend, hit object</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Other opposing</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Other same direction</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Out of control on bend</td>
<td>3</td>
<td>3%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Overtake turning</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>
### Crash Types and Statistics

<table>
<thead>
<tr>
<th>Crash Type</th>
<th>No. of crashes</th>
<th>%</th>
<th>No. of Casualties</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parked</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Ped far side</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Ped nearside</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Rear end</td>
<td>16</td>
<td>17%</td>
<td>8</td>
<td>11%</td>
</tr>
<tr>
<td>Right near</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Right rear</td>
<td>3</td>
<td>3%</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Right through</td>
<td>11</td>
<td>12%</td>
<td>8</td>
<td>11%</td>
</tr>
<tr>
<td>U turn</td>
<td>3</td>
<td>3%</td>
<td>6</td>
<td>8%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>92</strong></td>
<td><strong>100%</strong></td>
<td><strong>71</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

### Section 1 – Minmi Road

In the five-year period ending June 2016, a total of 65 crashes were recorded along the 7.8 km section of Minmi Road. Over the five-year period, Minmi Road had an average of 13 crashes per year, where the majority of crashes occurred during the day and when the road surface was dry.

The following three clusters are identified on Minmi Road:

- **Cluster 1**: section between Summer Hill Road and Creek Road;
- **Cluster 2**: section between Cowper Street and Bunnings Roundabout; and
- **Cluster 3**: McCartney Street / Blue Gum Hills Road.

The locations are shown in Figure 2.26.

**Figure 2.26:** Section 1 Crash Cluster Locations

**Cluster 1: Section between Summer Hill Road and Creek Road**

This section extends between the Summer Hill Road roundabout intersection with Minmi Road in the west and 300m east of Creek Rd, encompassing approximately 1.4km. During the five-year period, a total of 26 crashes were reported within this section. These crashes resulted in 25 casualties, including one fatality.
Cluster 1 accounts for 40% of crashes on Minmi Road over the five year period. Within the 2011-2012 year, a total of eight crashes occurred. Of the total crashes, 76% occurred in dry conditions and an equal number of crashes took place in daylight and darkness.

Most crashes were caused by 'right through' movements, equating to 31% of crashes along this section. The 'right through' type crashes resulted in seven casualties. Five crashes were 'rear end' crashes, equating to 19% of crashes along the segment of Minmi Road and resulting in three casualties, including one fatality. The recorded fatal crash occurred approximately 200m east of Creek Road.

**Cluster 2: Section between Cowper St and Bunning’s Warehouse**

Along this section, a total of eight crashes were recorded between 2011-12 and 2015-16, resulting in three casualties.

Of the crashes along this section, six (75%) were 'rear end' crashes. It was observed that most 'rear end' crashes occurred on the eastbound approach of the roundabout with Bunnings entrance. A majority of crashes occurred when the road surface was dry.

**Cluster 3: McCartney St / Blue Gum Hills Road**

Another crash cluster was identified at the entrance of the Minmi Cemetery, to the east of Minmi Road intersection with Woodford Street. Two crashes resulted in serious injuries.

Of the four crashes, two occurred during the day and the other two at night. All recorded crashes at this location occurred in dry conditions. These crashes occurred on the westbound carriageway near the bend.

2.9.1 **Section 2 – Longworth Avenue**

In the five-year period, a total of 10 crashes were recorded on Longworth Avenue, resulting in nine casualties. From the data provided, it was also found 90% of crashes occurred in dry conditions. Additionally, an equal number of crashes occurred in the day and night.

'Head on' type crashes most commonly occurred on Longworth Avenue, making up 30% of crashes recorded on this road. 'Head on' incidents resulted in six casualties over the six-year period, where three resulted in severe injuries.

A single cluster was observed at the intersection of Longworth Avenue and Bean Street, where three crashes occurred, including two casualties. Of the three crashes, two were 'head on' incidents, one resulting in serious injury. All three crashes occurred in dry conditions, with one crash occurring after dark.

2.9.2 **Section 3 – Woodford Street**

In the five-year period, a total of eight crashes were recorded on the 2 kilometres long section of Woodford Street between Minmi Road and Newcastle Link Road. Out of the eight crashes, three resulted in casualties. Of the crashes recorded, 75% of crashes occurred during daylight hours and 63% occurred in dry conditions. The type of crashes that occurred on Woodford Street varied and no common crash type was observed. Table 2.5 summarises the type of crash and the number of crashes that occurred along Woodford Street.
Table 2.5 Various types of crashes along Woodford Street

<table>
<thead>
<tr>
<th>Crash Severity</th>
<th>No. of Casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross traffic</td>
<td>1</td>
</tr>
<tr>
<td>Head on</td>
<td>1</td>
</tr>
<tr>
<td>Left turn sideswipe</td>
<td>1</td>
</tr>
<tr>
<td>Off left/right bend, hit object</td>
<td>1</td>
</tr>
<tr>
<td>Off road to right, hit object</td>
<td>1</td>
</tr>
<tr>
<td>Parked</td>
<td>1</td>
</tr>
<tr>
<td>Right rear</td>
<td>1</td>
</tr>
<tr>
<td>U turn</td>
<td>1</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

Throughout Woodford Street, two clusters were identified: one near the Minmi Road intersection and the other near Bell Street intersection.

**Cluster 1 – Minmi Road / Woodford Street**

Two crashes reported at the Minmi Road / Woodford Street intersection. One crash was caused by a 'cross traffic turn' movement while the other was caused by a 'left turn sideswipe'. Both incidents took place during the day in dry conditions.

**Cluster 2 – Bell Street / Woodford Street**

Two crashes were reported in the five-year period. One crash involved a parked car, whilst the other crash involved a vehicle driving off the road and hitting an object. Both crashes occurred in wet weather, with one crash occurring at night.

2.10 PARKING

In relation to Figure 2.27, kerbside parking is restricted along Minmi Road. The exceptions are as follows:

- **Kerbside parking 1**: On the southern side of Minmi Road between Britannia Boulevard and Highland Way;
- **Kerbside parking 2**: At two locations on the northern side of Minmi Road between Summerhill Road and Maryland Drive;
- **Kerbside parking 3**: A short section north of Minmi Road to the east of Maryland Drive; and
- **Kerbside parking 4**: On the southern side of Minmi Road between Macquarie Street and Fletcher Street.
Private off-street car parks are provided at the following locations:

- Fletcher Village;
- Bunnings Warehouse;
- Aldi Store; and
- The industrial/commercial area west of Creek Road.

During site visits, some vehicles were observed to park illegally within the verge near the shared path. As seen in Figure 2.28, a cluster of cars was observed to park on the southern side of Minmi Road, close to Maryland Drive.

Figure 2.28: Cars obstruct shared path along Minmi Road northbound to Caltex Station
3. YEAR 2017 NETWORK PERFORMANCE MODELLING

3.1 BASE MODEL CALIBRATION AND VALIDATION

3.1.1 Overview

The traffic modelling software VISSIM was used to create a microsimulation model for the study area. The model network is shown in Figure 3.1. The model was calibrated and validated in accordance with the RMS Traffic Modelling Guidelines, February 2013. The existing base case model represented:

- the AM peak period between 8.00 am and 9.00 am, with a 30-minute warm up and call down period on either side of the peak hour, capturing school zone between 8.00 am and 9.30 am; and
- the PM peak period between 4:30 pm and 5:30 pm, with a 30-minute warm up and call down period on either side of the peak hour.

![Figure 3.1: Western Corridor VISSIM Model Network](image)

3.1.2 Input Data

A wide variety of data sets were used to build, calibrate and validate the models. These included:

- intersection turn counts by vehicle classes;
- origin-destination surveys;
- travel time surveys;
- SCATS Intersection Diagnostic Monitor (IDM) signal data;
- aerial photography; and
- site observations.

3.1.3 Base Model Coding

The VISSIM model was coded using knowledge obtained from site visits and road layouts based on Google Maps and other mapping programs. Model parameters were left as the VISSIM defaults. Some of the key features of the model coding that should be noted are:

- movements within intersections and approaching zebra crossings are controlled by “Priority Rules” to ensure appropriate give-way behaviours;
- all pedestrian crossings are included in the model;
- vehicle inputs, releasing all vehicles into the model, are consistent with the posted speed along the relevant roads; and
- reduced speed areas have been included in to more accurately reflect driver behaviour when approaching stop lines and completing some manoeuvres.
3.1.4 VISSIM Model Calibration and Validation Outcomes

The 2017 VISSIM model was calibrated and validated as per the Roads and Maritime guidelines. Model calibration and validation results are documented in a separate technical note, provided in Appendix A. The base year 2017 VISSIM models have been calibrated and validated adequately and are fit for the study purpose.

3.2 PERFORMANCE METRICS

The Levels of Service (LoS) for each intersection have been assessed based on average delay in accordance with the Roads and Maritime guidelines (Guide to Traffic Generating Developments, Issue 2.2, Roads and Maritime Services, October 2002). The LoS thresholds are summarised in Table 3.1.

<table>
<thead>
<tr>
<th>Level of Service (LoS)</th>
<th>Average Delay per vehicle (sec/veh)</th>
<th>Traffic Signals, Roundabouts</th>
<th>Give Way and Stop Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≤14</td>
<td>Good operation.</td>
<td>Good operation.</td>
</tr>
<tr>
<td>B</td>
<td>15 to 28</td>
<td>Good with acceptable delays and spare capacity.</td>
<td>Acceptable delays and spare capacity.</td>
</tr>
<tr>
<td>C</td>
<td>29 to 42</td>
<td>Satisfactory.</td>
<td>Satisfactory, but accident study required.</td>
</tr>
<tr>
<td>D</td>
<td>43 to 56</td>
<td>Operating near capacity.</td>
<td>Near capacity and accident study required.</td>
</tr>
<tr>
<td>E</td>
<td>57 to 70</td>
<td>At capacity; at signals, incident will cause excess delays. Roundabout require other control mode.</td>
<td>At capacity, requires other control mode.</td>
</tr>
<tr>
<td>F</td>
<td>&gt; 70</td>
<td>Flow breakdown; forced flow.</td>
<td>Intersection failure.</td>
</tr>
</tbody>
</table>

The guidelines recommend that for priority intersections, such as roundabouts and sign-controlled intersections, the LoS value is determined by the critical movement with the longest delay, whereas for a signalised intersection the LoS criteria is based on average delay.

3.3 INTERSECTION PERFORMANCE

3.3.1 LoS and Delay

The peak hour performance of each intersection within the study area is summarised in Table 3.2.

In the AM peak hour, the Minmi Road / Creek Road / Macquarie Street intersection is shown to experience congestion with an average delay of 43 seconds (LoS D). The Minmi Road / Cameron Street / Cowper Street intersection also experience substantial congestion in both the AM and PM peak periods.
<table>
<thead>
<tr>
<th>Intersection</th>
<th>Intersection Control</th>
<th>LoS – AM (delay in seconds)</th>
<th>LoS – PM (delay in seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodford Street / Newcastle Link Road / Cameron Park Drive</td>
<td>C</td>
<td>(36)</td>
<td>C</td>
</tr>
<tr>
<td>Woodford Street / Minmi Road</td>
<td>B</td>
<td>(18)</td>
<td>B</td>
</tr>
<tr>
<td>Brookfield Avenue / Minmi Road</td>
<td>A</td>
<td>(1)</td>
<td>A</td>
</tr>
<tr>
<td>Minmi Road / Highland Way</td>
<td>A</td>
<td>(0)</td>
<td>A</td>
</tr>
<tr>
<td>Minmi Road / Britannia Boulevard</td>
<td>A</td>
<td>(4)</td>
<td>A</td>
</tr>
<tr>
<td>Kurraka Drive / Minmi Road</td>
<td>A</td>
<td>(1)</td>
<td>A</td>
</tr>
<tr>
<td>Awakabal Drive / Minmi Road / Bellbird Close</td>
<td>B</td>
<td>(23)</td>
<td>B</td>
</tr>
<tr>
<td>Maryland Drive / Minmi Road / Churnwood Drive</td>
<td>B</td>
<td>(24)</td>
<td>B</td>
</tr>
<tr>
<td>Minmi Road / Bottlebrush Boulevard</td>
<td>A</td>
<td>(6)</td>
<td>A</td>
</tr>
<tr>
<td>Warkworth Street / Minmi Road</td>
<td>A</td>
<td>(2)</td>
<td>A</td>
</tr>
<tr>
<td>Minmi Road / Summerhill Road</td>
<td>A</td>
<td>(5)</td>
<td>A</td>
</tr>
<tr>
<td>McNaughton Avenue / Minmi Road</td>
<td>A</td>
<td>(4)</td>
<td>A</td>
</tr>
<tr>
<td>Maryland Drive / Minmi Road</td>
<td>B</td>
<td>(16)</td>
<td>B</td>
</tr>
<tr>
<td>Creek Road / Minmi Road / Macquarie Street</td>
<td>D</td>
<td>(43)</td>
<td>B</td>
</tr>
<tr>
<td>Minmi Road / Bunnings</td>
<td>A</td>
<td>(9)</td>
<td>A</td>
</tr>
<tr>
<td>Sandgate Road / Minmi Road</td>
<td>A</td>
<td>(7)</td>
<td>A</td>
</tr>
<tr>
<td>Cameron Street / Longworth Avenue / Cowper Street / Minmi Road</td>
<td>C</td>
<td>(34)</td>
<td>C</td>
</tr>
<tr>
<td>Sandgate Road / Tillie Street</td>
<td>A</td>
<td>(12)</td>
<td>A</td>
</tr>
<tr>
<td>Tillie Street / Wilkinson Avenue</td>
<td>A</td>
<td>(4)</td>
<td>A</td>
</tr>
<tr>
<td>Tillie Street / Douglas Street / Cameron Street</td>
<td>A</td>
<td>(5)</td>
<td>A</td>
</tr>
<tr>
<td>Thomas Street / Walford Street</td>
<td>B</td>
<td>(24)</td>
<td>A</td>
</tr>
<tr>
<td>Longworth Avenue / Newcastle Road / Thomas Street</td>
<td>A</td>
<td>(14)</td>
<td>A</td>
</tr>
<tr>
<td>Newcastle Road / Cowper Street</td>
<td>A</td>
<td>(6)</td>
<td>A</td>
</tr>
<tr>
<td>Kokera Street / Cowper Street</td>
<td>A</td>
<td>(11)</td>
<td>A</td>
</tr>
<tr>
<td>Metcalfe Street / Thomas Street</td>
<td>B</td>
<td>(17)</td>
<td>B</td>
</tr>
<tr>
<td>Lake Road / Cowper Street</td>
<td>A</td>
<td>(6)</td>
<td>B</td>
</tr>
<tr>
<td>Lake Road / Thomas Street / Newcastle Link Road</td>
<td>D</td>
<td>(49)</td>
<td>F</td>
</tr>
<tr>
<td>Newcastle Link Road / Minmi Road</td>
<td>B</td>
<td>(17)</td>
<td>C</td>
</tr>
<tr>
<td>Nelson Street / Cowper Street</td>
<td>B</td>
<td>(19)</td>
<td>B</td>
</tr>
</tbody>
</table>
3.3.2 Worst Performing Movements

The following section discusses movements at each intersection that experience significant delays.

**Woodford Street / Newcastle Link Road / Cameron Park Drive**

The right turn from Newcastle Link Road (W) to Cameron Park Drive (S) experiences a LoS E and F in the AM and PM peaks respectively. Furthermore, the right turn from Cameron Park Drive (S) to Newcastle Link Road (E) experiences a LoS E during the PM Peak.

**Awakabal Drive Minmi Road / Bellbird Close**

The right turn from Bellbird Close (S) to Minmi Road (E) experiences a LoS F during the AM peak. Furthermore, the right turn from Minmi Road (E) to Awakabal Drive (N) and the left turn from Bellbird Close (S) to Minmi Road (W) both experience a LoS E during the PM peak.

**Creek Road / Minmi Road / Macquarie Street**

The right turn from Macquarie Street (S) to Minmi Road (E) (11 vehicles) experiences a LoS E during the AM Peak. Furthermore, the right turn from Minmi Road (E) to Creek Road (N) experiences a LoS E during the PM Peak.

**Cameron Street / Longworth Avenue / Cowper Street / Minmi Road**

The right turn from Longworth Avenue (E) to Cameron Street (N) and the right turn from Cowper Street (S) to Longworth Avenue (E) both experience a LoS F during the AM and PM Peak. Furthermore, the right turn from Minmi Road (W) to Cowper Street (S) experiences a LoS E during the AM and PM Peak.

**Thomas Street / Walford Street**

The right turn from Thomas Street (W) to Walford Street (S) experiences a LoS E in the AM Peak.

**Metcalfe Street / Thomas Street**

The right turn from Metcalfe Street (N) to Thomas Street (W), the right turn from Thomas Street (E) to Metcalfe Street (N) and the right turn from Metcalfe Street (S) to Thomas Street (E) all experience a LoS E during the AM Peak.

The right, through and left movements from Metcalfe Street (N) to Thomas Street (E & W) and Metcalfe Street (S) all experience a LoS F during the PM Peak. Furthermore, the right turn from Thomas Street (W) to Metcalfe Street (S) experiences a LoS F during the PM Peak.

**Lake Road / Cowper Street**

The right turn from Cowper Street (E) to Lake Road (N) experiences a LoS E during the PM Peak.

**Lake Road / Thomas Street / Newcastle Link Road**

The movement from Thomas Street (E) to Newcastle Link Road (W) and the right turn from Newcastle Link Road (W) to Lake Road (S) both experience a LoS F during the AM Peak. Furthermore, the right turn from Lake Road (S) to Thomas Street (E) experiences a LoS E during the AM Peak.

The right, through and left movements from Lake Road (N) to Newcastle Link Road (W), Lake Road (S) and Thomas Street (E), the through movement from Thomas Street (E) to Newcastle Link Road (W) and the through and left movements from Lake Road (S) to Lake Road (N) and Newcastle Link Road (W) all experience a LoS F during the PM Peak. Furthermore, the right turn from Newcastle Link Road (W) to Lake Road (S) experiences a LoS E.

**Newcastle Link Road / Minmi Road**

The through and left movements from Newcastle Link Road (E) to Newcastle Link Road (W) and Minmi Road (S) both experience a LoS E during the PM Peak.
3.4 TRAVEL TIMES

The eastbound and westbound travel times on Minmi Road are shown graphically in Figure 3.2 and Figure 3.3. In the eastbound direction, the AM peak travel times are longer than the PM peak by approximately 2 minutes 15 seconds. This is attributed to slow moving traffic on the eastbound Minmi Road. In the westbound direction the PM peak travel times are longer than the AM peak by approximately half a minute. What the comparison of the graphs also show is the travel time variability effects eastbound due to the ‘confluence’ of traffic in more heavily trafficked south-east of the model, compared to the divergence of traffic westbound which shows more uniform speed profiles.

![Figure 3.2: 2017 Eastbound (clock-wise) Travel Times on Minmi Road](image)

![Figure 3.3: 2017 Westbound (counter clock-wise) Travel Time on Minmi Road](image)
4. FUTURE YEAR TRAFFIC DEMANDS AND ASSESSMENT PROCESS

4.1 OVERVIEW

Two key components in the development of future year models were:
- an estimation of future traffic volumes; and
- future transport network including committed network improvements.

Information regarding future developments was provided by CoN. This chapter summarises the all key future developments: their estimated traffic generation, forecast trip distribution throughout the road network and the increase in through (background) traffic within the study area. This chapter also summarises the key committed network improvements within the study area.

Finally, this chapter outlines the process for the assessment of network deficiencies within the study area and how the 2021, 2026 and 2036 networks were subsequently developed, tested and optimised.

4.2 DEVELOPMENT AREAS

4.2.1 Planned Future Developments and Approved Developments

The Western Corridor has experienced growth in residential developments and population which is forecast to continue into the foreseeable future. The Western Corridor has been divided into different sections which make up the Area of Contribution Plan under the Section 94 Contributions Plan 2013. New developments are proposed in Elermore Vale, Wallsend, Fletcher, Minmi and Cameron Park.

Within the study area, a total of nine areas were identified where residential developments or other developments, have recently been completed or are being planned to be implemented in the future. Of the nine areas, the following four areas are currently being planned for new development:

Planned Future Developments
- Coal and Allied Part 3A site;
- 505 Minmi Road site;
- Xstrata Coal site; and
- seniors living site.

The remaining five areas already include a range of developments and additional developments that have been approved. These areas are:

Approved Developments
- Nikkinba Ridge;
- Hidden Waters;
- St Andrews Way;
- Sanctuary Estate; and
- The Outlook.

The locations of these development areas are shown in Figure 4.1.
4.2.2 Coal and Allied

Coal and Allied is located within Cameron Park, Minmi and Fletcher. At the time of the publication of the Newcastle Western Corridor Section 94 Background Document, (August 2013), a total of 1,672 dwellings were expected, including 152 seniors living dwellings. The Coal and Allied development is estimated to house approximately 4,800 residents.

4.2.3 505 Minmi Road

505 Minmi Road is located within Fletcher. At the time of the publication of the Newcastle Western Corridor Section 94 Background Document (August 2013), a total of 110 dwellings were expected, housing approximately 300 residents.

4.2.4 Xstrata Coal

Xstrata Coal is located within Wallsend, Elermore Vale, Cameron Park, Edgeworth and Glendale. At the time of the publication of the Newcastle Western Corridor Section 94 Background Document (August 2013), a total of 1,200 dwellings were expected, housing approximately 3,600 residents.

4.2.5 Seniors Living

Seniors Living – Elermore Vale is located within Elermore Vale. At the time of the publication of the Newcastle Western Corridor Section 94 Background Document (August 2013), a total of 150 seniors dwellings were expected, housing approximately 225 residents.

4.2.6 Nikkinba Ridge Estate

Nikkinba Ridge is located within Fletcher. At the time of the publication of the Newcastle Western Corridor Section 94 Background Document (August 2013), a total of 148 dwellings had been constructed, with a further 188 approved for release. It was expected that 463 dwellings would be constructed within Nikkinba
Ridge, housing an estimated 1,400 residents. The proposed development also includes the expectation that 32 of the 463 dwellings will be medium density dwellings.

4.2.7 **Hidden Waters**

Hidden Waters is located within Fletcher. At the time of the publication of the Newcastle Western Corridor Section 94 Background Document (August 2013), a total of 110 dwellings had been constructed, with a further 174 approved for release. It was expected that 427 dwellings would be constructed within Hidden Waters, housing an estimated 1,350 residents.

4.2.8 **St Andrews Way**

St Andrew Way is located within Fletcher. It is the smallest development area within the Western Corridor with only 25 dwellings approved, but yet to be released, at the time of the publication of the Newcastle Western Corridor Section 94 Background Document (August 2013), the expected population of St Andrews Way is expected to be around 75 residents.

4.2.9 **Sanctuary Estate**

Sanctuary Estate is located to the north of Fletcher. At the time of the publication of the Newcastle Western Corridor Section 94 Background Document (August 2013), a total of 80 dwellings had been constructed, with a further 185 approved for release. Sanctuary Estate is expected to be the largest estate within Fletcher with an expected 836 dwellings, including 77 medium density dwellings, housing approximately 3,000 residents.

4.2.10 **The Outlook**

The Outlook is located within Fletcher. At the time of the publication of the Newcastle Western Corridor Section 94 Background Document (August 2013), a total of 42 dwellings had been constructed, with a further 117 approved for release. The Outlook is proposed to contain the highest proportion of medium density dwellings, with over 25% of all dwellings to be medium density. A total of 618 dwellings are expected, housing approximately 1,850 residents.

4.3 **TRAFFIC GENERATION**

4.3.1 **Traffic Generation Rates**

Traffic generation rates were taken from the Roads and Maritime *Guide to Traffic Generating Developments* and are summarised in Table 4.1.

<table>
<thead>
<tr>
<th>Development</th>
<th>Weekday Peak Rate</th>
<th>Daily Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seniors Living</td>
<td>0.2 per dwelling</td>
<td>2.0 per dwelling</td>
</tr>
<tr>
<td>Low Density Housing</td>
<td>0.85 per dwelling</td>
<td>9.0 per dwelling</td>
</tr>
<tr>
<td>Medium Density Housing – Up to 2 bedrooms</td>
<td>0.4 per dwelling</td>
<td>4.0 per dwelling</td>
</tr>
</tbody>
</table>

Source: Roads and Maritime Services Guide to Generating Traffic Developments

The number of trips expected to be generated from future developments were calculated using the above traffic generation rates.

4.3.2 **Traffic Generation of Planned Future Developments**

Table 4.2 summarises the expected number of the dwellings in each area, the associated traffic generation rate, the estimated number of vehicle trips during the weekday peak hour and the daily vehicle trips generated.
### Table 4.2: Traffic Generation by Proposed Planned Future Developments

<table>
<thead>
<tr>
<th>Development Areas</th>
<th>Expected Dwellings</th>
<th>Weekday Peak Hour Vehicle Trip Rate</th>
<th>Vehicle Trips/hour</th>
<th>Daily Vehicle Trip Rate</th>
<th>Vehicle Trips/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal &amp; Allied Part 3A</td>
<td>1,520</td>
<td>0.85 per dwelling</td>
<td>1,290</td>
<td>9 per dwelling</td>
<td>13,680</td>
</tr>
<tr>
<td>Seniors living component – part of Coal &amp; Allied Part 3A</td>
<td>152</td>
<td>0.20 per dwelling</td>
<td>30</td>
<td>2 per dwelling</td>
<td>304</td>
</tr>
<tr>
<td>505 Minmi Road</td>
<td>110</td>
<td>0.85 per dwelling</td>
<td>94</td>
<td>9 per dwelling</td>
<td>990</td>
</tr>
<tr>
<td>Xstrata</td>
<td>1,200</td>
<td>0.85 per dwelling</td>
<td>1,020</td>
<td>9 per dwelling</td>
<td>10,800</td>
</tr>
<tr>
<td>Seniors Living – Elemore Vale</td>
<td>150</td>
<td>0.20 per dwelling</td>
<td>30</td>
<td>2 per dwelling</td>
<td>300</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3,130</td>
<td></td>
<td>2,470</td>
<td></td>
<td>26,075</td>
</tr>
</tbody>
</table>

In summary, a total of 2,470 additional trips are expected to be generated during the peak hours from the proposed 3,130 residential dwellings in the “Planned Future Development” areas.

#### 4.3.3 Traffic Generation of Approved Developments

This section summarises the additional traffic that needs to be added to base year traffic to account for approved developments in future year modelling. Developments in these areas are at different stages of construction which include:

- houses recently constructed;
- approved and released for construction; and
- approved and not yet released for construction.

Table 4.3 summarises the weekday peak hour and daily vehicle trips from developments at various stages.

### Table 4.3: Traffic Generation by Approved Developments

<table>
<thead>
<tr>
<th>Development Stage</th>
<th>Expected Dwellings</th>
<th>Weekday Peak Hour Vehicle Trip Rate</th>
<th>Vehicle Trips/hour</th>
<th>Daily Vehicle Trip Rate</th>
<th>Vehicle Trips/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recently Constructed Houses</td>
<td>380</td>
<td>0.85 per dwelling</td>
<td>325</td>
<td>9 per dwelling</td>
<td>3,420</td>
</tr>
<tr>
<td>Approved – Released</td>
<td>664</td>
<td>0.85 per dwelling</td>
<td>565</td>
<td>9 per dwelling</td>
<td>5,978</td>
</tr>
<tr>
<td>Approved – Not yet released</td>
<td>1,590</td>
<td>0.85 per dwelling</td>
<td>1,220</td>
<td>9 per dwelling</td>
<td>12,820</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,634</td>
<td>0.85 per dwelling</td>
<td>2,110</td>
<td>9 per dwelling</td>
<td>22,220</td>
</tr>
</tbody>
</table>

A total of 2,110 vehicle trips are expected to be generated during the peak hours from already approved developments, including all recently constructed developments.

#### 4.3.4 Summary (Planned and Approved Developments)

The combination of planned and approved developments within the study area are expected to generate 4,580 vehicular trips during peak hours from a total of 5,764 low density residential and senior living dwellings. This is summarised in Table 4.4.
Table 4.4: Traffic Generation Summary (Planned plus Approved Developments)

<table>
<thead>
<tr>
<th>Development Stage</th>
<th>Expected Dwellings</th>
<th>Weekday Peak Hour Vehicle Trip Rate</th>
<th>Vehicle Trips/hour</th>
<th>Daily Vehicle Trip Rate</th>
<th>Vehicle Trips/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned</td>
<td>3,130</td>
<td>Various</td>
<td>2,470</td>
<td>Various</td>
<td>26,075</td>
</tr>
<tr>
<td>Approved</td>
<td>2,634</td>
<td></td>
<td>2,110</td>
<td></td>
<td>22,220</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>5,764</strong></td>
<td></td>
<td><strong>4,580</strong></td>
<td></td>
<td><strong>48,295</strong></td>
</tr>
</tbody>
</table>

### 4.4 Trip Distribution

Results from the origin-destination (OD) surveys conducted on Thursday, 2nd March 2017 were interrogated to determine the traffic distribution pattern. The survey was conducted between 7:30am and 9:30am and between 4.00pm and 6.00pm. The eastern extent of the OD survey at Maryland Drive (West) was assumed to be representative of all trips attracted/generated from the key section of Minmi Road under consideration as shown in Figure 4.2.

![Location of expected developments along Minmi Road](image)

**Figure 4.2:** Location of Expected Developments along Minmi Road, West of Maryland Drive

The locations of major attractors of trips from the study area, including suburbs and key routes, are summarised in Table 4.5. The inbound and outbound trip distributions for both the AM and PM peak periods to/from Maryland Drive (West) are also summarised in the table.

Table 4.5: Minmi Road Corridor Peak Hours Outbound and Inbound Trip Proportions

| Destination              | AM Peak | | PM Peak | | |
|--------------------------|---------|---|---------|---|
|                          | Outbound| Inbound| Outbound| Inbound|
| Pacific Highway (North)  | 10%     | 22%  | 17%     | 18%  |
| Hunter Expressway        | 10%     | 9%   | 16%     | 10%  |
| Newcastle CBD            | 12%     | 16%  | 10%     | 10%  |
| Edgeworth                | 5%      | 6%   | 2%      | 3%   |
| Lake Road                | 11%     | 11%  | 7%      | 11%  |
| Charlestown              | 4%      | 7%   | 3%      | 2%   |
| Sandgate                 | 13%     | 1%   | 19%     | 0%   |
| Other (local)            | 35%     | 28%  | 26%     | 46%  |
Apart from local trip-making, the following four locations are the major attractors of Minmi Road corridor trips:

- Pacific Highway (north via Woodford Street);
- Hunter Expressway / Pacific Highway (south);
- Newcastle CBD; and
- Lake Road.

In the AM peak, each of the above four locations attract between 10% and 12% of all trips originating from the corridor. In the PM peak, each of these locations generate between 11% and 18% each of all the trips travelling into the corridor.

Figure 4.3 to Figure 4.6 summarise the inbound and outbound trip distributions associated with the Minmi Road corridor.

The traffic generation and traffic distribution calculations presented above were used as the basis to add to the base year traffic demands and then to assign this traffic to the calibrated and validated road network models. These models reflect ‘Do Minimum’ network conditions in the future years for further consideration.
Figure 4.3: Outbound (from development areas) Trip Distribution - AM Peak
Figure 4.4: Inbound (to development areas) Trip Distribution - AM Peak
Figure 4.5: Outbound (from development areas) Trip Distribution - PM Peak
Figure 4.6: Inbound (to development areas) Trip Distribution - PM Peak
4.5 **ESTIMATION OF EXTERNAL TRAFFIC GROWTH**

The traffic model includes various external travel zones. One example is the west to east movement between M1/Hunter Expressway and Newcastle City Centre. These external movements are forecast to grow in the future assessment years. The Sydney Strategic Travel Model (STM) was interrogated to understand the growth in external traffic through the study area. A total of eight key external travel zones have been identified as shown in Figure 4.7. A significant number of vehicles travel between these zones through the study area.

![Key External Travel Zones](image)

**Figure 4.7:** Key External Travel Zones

The growth in external traffic through the study area from the STM is summarised in Table 4.6.

**Table 4.6:** Growth in External Traffic – AM and PM Peaks (2 hour STM volumes)

<table>
<thead>
<tr>
<th>Traffic Growth</th>
<th>2016 to 2026</th>
<th></th>
<th>2016 to 2036</th>
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<tr>
<td></td>
<td>AM</td>
<td>PM</td>
<td>AM</td>
<td>PM</td>
</tr>
<tr>
<td>Growth in Through Traffic</td>
<td>2,600</td>
<td>2,810</td>
<td>4,125</td>
<td>3,900</td>
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</table>
4.6 **FUTURE TRANSPORT NETWORK**

In consultation with CoN and Roads and Maritime, a number of improvements have been identified on both State and Local Roads as being committed or highly likely to be implemented. These works have been included in the future year ‘Do Minimum’ networks.

4.6.1 **Committed Works**

**State Roads**

During the course of this study Roads and Maritime was undertaking a parallel study to develop corridor strategy for Newcastle Link Road and Thomas Street between M1 Pacific Motorway and Newcastle Road. No information on future infrastructure improvements for this corridor was available at the time of this study. However, Roads and Maritime did indicate a potential upgrade of the existing roundabout at the intersection of Newcastle Link Road and Minmi Road to a traffic signals. The configuration included free flow left turn lanes on the southbound, westbound and northbound approaches. The indicative layout of the intersection is shown in Figure 4.8.

![Figure 4.8: Newcastle Link Road / Minmi Road intersection – Future Improvement Option](image)

**Local Roads**

CoN was developing a draft Public Domain Plan and Traffic Plan for the Wallsend Local Centre. As part of the plan a number of improvement options were being considered including improvements at key intersections on Cowper Street. In consultation with the Bitzios Consulting study team, concept plans were developed for the following three intersections:

- Cowper Street / Kokera Street;
- Cowper Street / Nelson Street; and
- Cowper Street / Newcastle Road.

Locations of these intersections are shown in Figure 4.9 and the upgrade proposals are detailed below.

CoN has an intent to ensure that the Wallsend Town Centre supports walking and cycling movements and local traffic accessibility. This will influence decisions regarding the geometric scale of intersection upgrades in this area.
Figure 4.9: Proposed Intersection Upgrades at Wallsend Local Centre

Cowper Street / Kokera Street

The existing roundabout is proposed to be upgraded to a signalised intersection with the layout shown in Figure 4.10. The proposed layout will include a right turn bay on the westbound approach. It is also proposed to provide pedestrian crossing facilities on all three approaches.

Figure 4.10: Proposed Layout of the Cowper Street / Kokera Street Intersection
Cowper Street / Nelson Street

It is proposed to introduce signalised pedestrian crossings on the southbound and westbound approaches. This will necessitate the existing priority controlled left turn from north to east to be signalised. The proposed layout is shown in Figure 4.11.

![Diagram of Cowper Street / Nelson Street Intersection](image)

**Figure 4.11:** Proposed Layout of the Cowper Street / Nelson Street Intersection

Cowper Street / Newcastle Road

It is proposed to introduce a roundabout at the location of the existing priority intersection. The proposed layout is shown in Figure 4.12. The proposed roundabout configuration will improve traffic flows at this intersection especially traffic flows on Newcastle Road (south) which provides connectivity between Thomas Street and Cowper Road. It is required to promote this connectivity as an alternative to Thomas Street.
Minmi Road

Work is in progress on the Minmi Road upgrade between Macquarie Street and Bunnings Access Road. It is proposed to introduce an additional traffic lane in Minmi Road eastbound.

4.7 **Future Year Network Development Process**

A three-stage process was adopted with each stage includes identification of network issues and development of improvement measures for each of the following three assessment years: 2021, 2026 and 2036. The process is summarised in Figure 4.13.

In Stage 1, a Do Minimum VISSIM model was developed for 2021 traffic conditions. The model includes all road improvements identified including the proposed Newcastle Link Road / Minmi Road intersection upgrade and the proposed intersection improvements on the Cowper Street. The 2021 Do Minimum VISSIM model was interrogated to identify network congestion hot spots and pinch points. A set of network improvement measures was developed to address the congestion issues. The 2021 Do Minimum VISSIM model was updated to develop the 2021 “option” model by incorporating the network improvement measures.

As part of the Stage 2 process, the 2026 Do Minimum model was developed by incorporating the 2021 option model but introducing 2026 project traffic demands. The same process was repeated until a 2026 option model was developed. Stage 3 repeated the Stage 2 process for year 2036.
Figure 4.13: Network Assessment and Network Improvement Process

Table 4.7 summarises the three stages. The key outcome of the process is the identification of network improvement measures and their staging for the intermediate years 2021 and 2026.

Table 4.7: Model Scenarios

<table>
<thead>
<tr>
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<th>Stage 3 (2036)</th>
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<td>Do Minimum</td>
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<td>Road Network</td>
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<td>2021 Do Minimum + Improvements</td>
<td>2021 Option Model Network</td>
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<td>Traffic Demand</td>
<td>Existing Traffic +</td>
<td>Existing Traffic +</td>
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</tr>
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</table>
5. **2021 NETWORK ASSESSMENT**

5.1 **2021 DO MINIMUM ASSESSMENT**

5.1.1 **2021 Link Traffic Volumes – AM and PM Peaks**

The link / network volumes for the Do Minimum 2021 AM and PM peak period have been extracted from VISSIM as shown in Figure 5.1 and Figure 5.2.

![Figure 5.1: Link Volumes - 2021 Do Minimum, AM](image1)

![Figure 5.2: Link Volumes - 2021 Do Minimum, PM](image2)
5.1.2 Intersection Analysis

The 2021 Do Minimum AM and PM intersection traffic performance is compared against the 2017 AM and PM peak periods in Table 5.1. Most of the key intersections along Minmi Road, Newcastle Link Road and Thomas Street operate at LoS E-F with substantial delays for general traffic.

In the AM peak, significant delays and queue build-up for the general eastbound traffic is observed at:

- Lake Road / Cowper Street and Lake Road / Thomas Street / Newcastle Link Road intersections as shown in Figure 5.3;
- Kurraka Drive / Minmi Road, Awakabal Drive / Minmi Road / Bellbird Close, Maryland Drive / Minmi Road / Churnwood Drive intersections as shown in Figure 5.4; and
- Woodford Street / Newcastle Link Road / Cameron Park Drive intersections as shown in Figure 5.5.

Figure 5.3: Queues along Thomas Street and Newcastle Link Road– 2021 Do Minimum, AM Peak

Figure 5.4: Queues along Minmi Road– 2021 Do Minimum, AM Peak
Figure 5.5: Queues along Newcastle Link Road – 2021 Do Minimum, AM Peak

In the PM peak, significant delays and queue build-up for the general traffic is observed at:

- Lake Road / Thomas Street / Newcastle Link Road, Thomas Street / Walford Street and Longworth Avenue / Newcastle Road / Thomas Street intersections as shown in Figure 5.6.

Figure 5.6: Queues along Thomas Street and Newcastle Link Road – 2021 Do Minimum, PM Peak
<table>
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<td>B (17)</td>
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</tbody>
</table>
A detailed analysis of intersection identified the failing movements at the following intersections:

- Minmi Road / Kurraka Drive: the southbound to westbound right turn movement experience 175 seconds delay in the 2021 AM peak. The AM peak volume of the right turning traffic is only 46 vehicles /hour. This is primarily a safety issue for this low volume of traffic not being able to select gaps. Some of this traffic may decide instead to turn left and u-turn elsewhere, or the right turn may be banned in the future to address the safety issue.

- Minmi Road / MacNaughton Avenue: the southbound to westbound right turn movement experience 332 seconds delay in the 2021 AM peak. The AM peak volume of the right turning traffic is only 7 vehicles /hour. This is primarily a safety issue for this low volume of traffic not being able to select gaps. Some of this traffic may decide instead to turn left and u-turn elsewhere, or the right turn may be banned in the future to address the safety issue.

- Tillie Street/Wilkinson Avenue: the westbound to northbound left turn movement experience 276 seconds delay in the 2021 PM peak. The PM peak volume of the right turning traffic is only 6 vehicles /hour. This is primarily a safety issue for this low volume of traffic not being able to select gaps. Some of this traffic may decide instead to turn left and u-turn elsewhere, or the right turn may be banned in the future to address the safety issue.

In addition, the northbound through movement at the Longworth Avenue/Newcastle Road/Thomas Street roundabout intersection will experience substantial delays in the 2021 PM peak.

5.1.3 Travel Times

Figure 5.7 and Figure 5.8 compare the 2021 Do Minimum AM peak clockwise and counter-clockwise cumulative travel times with the existing 2017 cumulative travel times. In the AM peak (clockwise direction of travel), an increase in travel time of nearly 20 minutes is predicted between Woodford Street and the Bunnings intersection, with over-capacity conditions at the south-east end of Minmi Road. In the AM peak (counter clockwise direction of travel), an increase in travel time by about 14 minutes is expected on approach to the Lake Road intersection, which is well over capacity.

![Figure 5.7: 2021 Do Minimum Travel Time – Clockwise, AM Peak](image-url)
Figure 5.8: 2021 Do Minimum Travel Time – Counter-Clockwise, AM Peak

Figure 5.9 and Figure 5.10 compare the 2021 Do Minimum PM peak clockwise and counter clockwise cumulative travel times with the 2017 PM cumulative travel times. In the PM peak (clockwise direction of travel) the Minmi Road intersection with the Newcastle Link Road is where travel times diverge significantly by about five minutes. In the PM peak (counter clockwise direction of travel), there is a sharp increase in travel times at the Lake Road intersection which is well over capacity, and then from Lake Road through to the Bunnings roundabout.

Figure 5.9: 2021 Do Minimum Travel Time – Clockwise, PM Peak
5.1.4 2021 Do Minimum Traffic Performance Summary

In the event the predicted traffic growth is achieved, traffic demands along Minmi Road and Newcastle Link Road will be higher than the theoretical capacity. The 2021 Do Minimum traffic modelling predicts poor LoS at E/F for most of the intersections within the study area. In the AM peak, delays, queues and travel times in the eastbound direction will increase substantially while in the PM peak, the westbound vehicles will experience substantial delays, queues and increased travel time.

5.2 2021 OPTION MODEL TRAFFIC PERFORMANCE

5.2.1 2021 Option Model Network Changes

The 2021 Option Model was developed in order to identify key intersections / pinch points within the network which would require further improvements for the future year network.

5.2.2 Proposed Improvements for Year 2021

This section summarises the proposed improvements made to the 2021 network in order to cater for the increased 2021 traffic demand. Appendix B shows the intersection improvements made within the study area for Year 2021. The improvements were:

Cowper Street / Lake Road Intersection
- addition of one extra circulating lane between the Southern and Western approaches; and
- one additional exit lane on the Southern approach.

Cowper Street / Newcastle Road Intersection

The following modifications to Council design are required to service the 2021 traffic volumes:
- an additional traffic lane on the Cowper Street eastbound approach;
- the number of traffic lanes in the Newcastle Road northbound approach is reduced to one as shown in Figure 5.11.
Sandgate Road / Wilkinson Avenue / Tillie Street Intersection

- realign the Wilkinson Avenue approach to join Sandgate Road/Tillie Street intersection and signalise the intersection with pedestrian crossings across the Sandgate Road (E), Wilkinson Avenue and Tillie Street approaches of the intersection;
- an additional lane on the Tillie Street approach (80m long) and on its departure (40m long);
- an additional lane on the Sandgate Road departure; and
- extend the short lane by banning peak hour kerb side parking on the approach and departure of Sandgate Road (W) as far as Dennis Place.

There are opportunities to refine the proposed design of this intersection. For example, it is possible to ban some turning movements including the ban of the eastbound to southbound right turn from Sandgate Road. The proposed ban will simplify traffic signal phase arrangement thereby improve traffic performance at this intersection. Council / Roads and Maritime will need to consider the design refinement during the concept design and option testing phase should this upgrade project proceed. It is beyond the scale of assessment/scope to consider this intersection upgrade detail to this extent in such a large network model.

Cowper Street / Kokera Street Intersection

The following modifications to Council design are required to service the 2021 traffic volumes:
- an additional traffic lane on the Cowper Street westbound approach:
- the exclusive left turn is proposed to be shared between left and through traffic as shown in Figure 5.12.
The following modifications to Council design are required to service the 2021 traffic volumes:

- the exclusive right turn lane on the westbound approach is proposed to be shared between right and through traffic as shown in Figure 5.13;

- ban the east to north right turn movement at the Cowper Street/Cameron Street intersection and introduce traffic signals at the Minmi Road/Sandgate Road intersection to provide the east to north right turn;

- reconfigure the intersection to incorporate an additional left turn slip lane from Minmi Road (N) to Sandgate Road (E) at the Sandgate Road/Minmi Road intersection;

- an additional lane on the departure side of Longworth Avenue; and

- reconfigure the intersection to allow two through lanes for eastbound traffic.

Further design refinement including additional right turn lane on the southbound approach should be considered during the concept design and option testing phase.

Minmi Road / Awabakal Road Intersection
- introduce an additional traffic lane for the westbound traffic.

**Minmi Road / Highland Way Intersection**
- reconfigure the current priority (T) intersection to a 4-way single lane roundabout.

**Minmi Road / Woodford Street Intersection**
- an additional right turn lane on Woodford Street (S) and an additional departure lane on Minmi Road (E).

**Mid-block Road Capacity Improvements**
- widen Minmi Road eastbound to two lanes between Awabakal Drive and Maryland Drive, Maryland Drive and Bottlebrush Boulevard, Bottlebrush Boulevard and Warkworth Street and Warkworth Street and Summerhill Road; and
- widen Minmi Road southbound to two-lanes between Cowper Street/Cameron Street and Longworth Avenue/Newcastle Road.

### 5.2.3 Intersection Analysis

The 2021 Option Model network performance was compared with the 2021 Do Minimum and the Base 2017 models network performance. Table 5.2 shows how the network performance for each scenario compares with one another.
**Table 5.2: 2021 Option Model Intersection Performance – AM and PM Peak Periods**

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5.2.4 Travel Time Analysis

The 2021 Option Model travel time was compared to the 2021 Do Minimum and the Base 2017 models. Figure 5.14 through Figure 5.17 compare the clockwise and counter clockwise cumulative travel times. The results show that the upgrades in the 2021 Option Model (‘Do Something’) mitigate most of the travel time impacts that would occur if nothing was done. With some of the interventions however aimed at improving conditions in the peak direction of travel in the AM, then counter-peak direction does worsen, particularly along sections of the Newcastle Link Road.

Figure 5.14: 2021 Travel Time – Clockwise, AM Peak

Figure 5.15: 2021 Travel Time – Counter Clockwise, AM Peak
5.2.5 2021 Option Model Traffic Performance Summary

The 2021 Option Model provides a significant travel benefit to the study area when compared to the 2021 Do Minimum scenario. It is noted that some specific intersections are shown to experience a decrease in performance when compared to the Do Minimum scenario. This is partly due to the increase in traffic flow to key intersections as a result of increased upstream capacity essentially ‘flooding’ the next downstream pinch point. Overall though, the increased capacity provided at pinch points leads to significant improvements in travel time in both the AM and PM peak hour.
6. **2026 NETWORK ASSESSMENT**

6.1 **2026 DO MINIMUM TRAFFIC PERFORMANCE**

6.1.1 **Do Minimum Network Assumptions**

The Do Minimum 2026 VISSIM Model was developed using the 2021 Option Model road network and the traffic demand for year 2026. This was done to identify key intersections / pinch points within the network which would require further improvements for the future year network.

6.1.2 **2026 Link Traffic Volumes – AM and PM Peaks**

The link / network volumes for the Do Minimum 2026 AM and PM peak period have been extracted from VISSIM as shown in Figure 6.1 and Figure 6.2.

![Figure 6.1: Link Volumes - 2026 Do Minimum, AM](image1)

![Figure 6.2: Link Volumes - 2026 Do Minimum, PM](image2)
6.1.3 Intersection Analysis

The 2026 Do Minimum AM and PM intersection traffic performance is compared against the 2017 and 2021 Option Model in Table 6.1. Most of the key intersections along Minmi Road, Newcastle Link Road and Thomas Street operate at LoS E-F with substantial delays for general traffic.

In the AM peak, significant delays and queue build-up for the general eastbound traffic is observed at:

- Woodford Street / Newcastle Link Road / Cameron Park Drive intersection as shown in Figure 6.3;
- along Minmi Road at Minmi Road / Kurraka Drive, Minmi Road / Awabakal Drive and Minmi Road / Highland Way intersections as shown in Figure 6.4; and
- along Minmi Road at Minmi Road / Bottlebrush Boulevard, Warkworth Street / Minmi Road and Minmi Road / Summerhill Road intersections as shown in Figure 6.5.

![Figure 6.3: Queues at Woodford Street / Newcastle Link Road– 2026 Do Minimum, AM Peak](image)

![Figure 6.4: Minmi Road Queues (Highland Way-Awabakal Drive), 2026 Do Minimum, AM Peak](image)
Figure 6.5: Minmi Road Queues (Summerhill-Warkworth)—2026 Do Minimum, AM Peak

In the PM peak, significant delays and queue build-up for the general eastbound traffic is observed at:

- Lake Road / Thomas Street / Newcastle Link Road intersection as shown in Figure 6.6; and
- along Minmi Road at Minmi Road / Bunnings and Sandgate Road / Minmi Road intersections as shown in Figure 6.7.
Figure 6.6: Queues at Lake / Thomas / Cowper – 2026 Do Minimum, PM Peak

Figure 6.7: Queues at Minmi / Bunnings / Sandgate – 2026 Do Minimum, PM Peak
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6.1.4 Travel Time Analyses

Figure 6.8 and Figure 6.9 compare the 2026 Do Minimum AM peak clockwise and counter clockwise cumulative travel times with the existing 2017 and the 2021 Option Model cumulative travel times. Comparing the 2026 Do Minimum and the 2021 Option Model for the AM peak (clockwise direction of travel), a jump in travel time of about 10 minutes is predicted at the Maryland Drive intersection. In the counter clockwise direction of travel, there are clear travel time increases at Cameron Park Drive and between Churnwood Drive and the Bunnings roundabout.

![Travel Time Analyses Figure 6.8](image)

**Figure 6.8:** 2026 Do Minimum Travel Time – Clockwise, AM Peak

![Travel Time Analyses Figure 6.9](image)

**Figure 6.9:** 2026 Do Minimum Travel Time – Counter Clockwise, AM Peak
Figure 6.10 and Figure 6.11 compare the 2026 Do Minimum PM peak clockwise and counter clockwise cumulative travel times with the 2017 and the 2021 Option Model PM cumulative travel times. Comparing the 2026 Do Minimum and 2021 Option Model 2021 in the PM peak (clockwise direction of travel) shows jump in travel time on approach to Cameron Park Drive. In the PM peak counter clockwise direction of travel, there is a steady increase in travel times between Lake Road and the Bunnings roundabout.

**Figure 6.10:** 2026 Do Minimum Travel Time – Clockwise, PM Peak

**Figure 6.11:** 2026 Do Minimum Travel Time – Counter Clockwise, PM Peak
6.1.5 2026 Do Minimum Traffic Performance Summary

In the event the predicted traffic growth is achieved, traffic volumes along Minmi Road and Newcastle Link Road will be higher than the theoretical capacity. The 2026 Do Minimum scenario traffic modelling predicts a marginally worse level of performance for most intersections along the road corridor when compared to the 2021 Option Model scenario. Specifically, the modelling showed significant queueing along Minmi Road on the northern approach to the Cowper Road intersection.

6.2 2026 OPTION MODEL TRAFFIC PERFORMANCE

6.2.1 2026 Option Model Network Changes

The 2026 Option Model was developed in order to address deficiencies at key intersections / pinch points within the network.

6.2.2 Proposed Improvements for Year 2026

This section summarises the proposed improvements made to the 2026 network in order to cater for the increased 2026 traffic demand. Appendix C shows the intersection improvements made within the study are for the Year 2026. The improvements were:

Cowper Street / Kokera Street Intersection
- an additional lane (80m long) for the east to north movement;
- an additional eastbound lane on the Cowper Street departure as far as Brooks Street; and
- re-configure the eastbound kerb side lane to be a shared left and through lane.

Cowper Street / Nelson Street Intersection
- an additional departure lane in Cowper Street (E) as far as Murnin Street;
- extend the westbound short lane between Nelson Street and Newcastle Road; and
- one lane on the Nelson Street approach. This will reduce length of the pedestrian crossing. Vehicles existing the Wallsend Town centre can alternatively use the Cowper Street / Newcastle Road roundabout.

Cowper Street / Newcastle Road Intersection
- an additional short northbound lane (25m long) on the northbound approach of Newcastle Road and consequently an additional short lane (60m) on the exit side of Cowper Street (E).

Sandgate Road / Wilkinson Avenue / Tillie Street Intersection
- extend the two-lane section on the Tillie Street approach by 70m.

Cowper Street / Cameron Street Intersection
- an additional southbound lane at the Minmi Road/Sandgate Road/Cowper Street/Cameron Street intersection; and
- an additional northbound short lane (65m) at the Longworth Avenue approach.

Minmi Road / Bunnings Intersection
- an additional departure lane northbound; and
- re-configure the northbound approach so that the kerb side lane is shared between through and left turning traffic.
Minmi Road / Maryland Drive Intersection
- re-configure the southbound left turn from priority control (give-way) to a slip lane configuration and introduce an additional traffic lane on the eastbound departure.

Minmi Road / McNaughton Avenue Intersection
- additional lane eastbound and westbound; and
- exclusive (60m) left turn lane on McNaughton Avenue.

Minmi Road / Woodford Street Intersection
- an additional northbound lane between Bell Street and Minmi Road;
- two left turn lanes on the westbound approach: one 50m lane and one full lane; and
- an additional southbound lane on Woodford Street south of the intersection.

Mid-block Road Capacity Improvements
- widen Minmi Road to two-lanes eastbound between Anna Place and Maryland Drive;
- widen Minmi Road to three-lanes eastbound between Maryland Drive and Fletcher Street;
- widen Minmi Road to two-lanes westbound between Bunnings and Macquarie Street and between Maryland Drive and Anna Place;
- widen Minmi Road to two-lanes eastbound between McInnes Street and McCarthy Street and between McCarthy Street and McInnes Street;
- widen Cowper Street to two-lanes eastbound between Kokera Street and Nelson Street, between Newcastle Road and Union Street and between John Street and Minmi Road;
- widen Cowper Street to two-lanes westbound between Union Street and Newcastle Road;
- ban peak hour kerb side parking along Woodford Street between Minmi Road and Railway Street southbound and between Bell Street and Minmi Road northbound; and
- ban peak hour kerb side parking along Cowper Street between Lake Road and Kokera Street and between Nelson Street and Newcastle Road eastbound and between Newcastle Road and Nelson Street westbound and between Kokera Street and Lake Road westbound.

6.2.3 Intersection Analysis

The 2026 Option Model network performance was compared with the 2026 Do Minimum and the Base 2017 models network performance. Table 6.2 shows the comparison of the network performance across each scenario.
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A detailed analysis shows that some intersections in the 2026 option models will fail with LoS F. A detailed analysis shows that this is due to selected failing movements which are very lightly trafficked. The failing movements at each intersection is identified below:

- **Kurraka Drive/Minmi Road:** the southbound to westbound right turn movement will experience 196 seconds delay in the AM peak. The volume of the right turning traffic is only 58 vehicles / hour. This is primarily a safety issue for this volume of traffic not being able to select gaps. Some of this traffic may decide instead to turn left and u-turn elsewhere, or the right turn may be banned in the future to address the safety issue; and

- **Warkworth Street/Minmi Road:** the southbound to westbound right turn movement will experience 101 seconds delay in the AM peak. The volume of the right turning traffic is only 83 vehicles / hour. This is primarily a safety issue for this volume of traffic not being able to select gaps. Some of this traffic may decide instead to turn left and u-turn elsewhere, or the right turn may be banned in the future to address the safety issue.

### 6.2.4 Travel Time Analysis

The 2026 Option Model travel time was compared to the 2026 Do Minimum and the Base 2017 model travel time, as shown in Figure 6.12 and Figure 6.15. The results generally show that the infrastructure upgrades in the Option Model (Do Something) result in overall lower travel times and more consistent speeds, although there are some localised exceptions where released traffic from an upgrade ‘floods’ a downstream pinch point.

![Figure 6.12: 2026 Travel Time – Clockwise, AM Peak](image)
Figure 6.13: 2026 Travel Time – Counter Clockwise, AM Peak

Figure 6.14: 2026 Travel Time – Clockwise, PM Peak
6.2.5 2026 Option Model Traffic Performance Summary

The 2026 Option Model shows an improvement in intersection performance across the study area when compared to the 2026 Do Minimum scenario. There is more consistent performance of the network and ‘flattening out’ of critical pinch points. These capacity improvements resulted in general reductions in travel time across the study area.
7. **2036 NETWORK ASSESSMENT**

7.1.1 **Do Minimum Network Assumptions**

The Do Minimum 2036 Model was developed using the 2026 Option Model road network and the traffic demand for the year 2036. The model was run to identify key pinch points within the network which would require upgrades.

7.1.2 **2036 Link Traffic Volumes – AM and PM Peaks**

The link/network volumes for the Do Minimum 2026 AM and PM peak period have been extracted from VISSIM as shown in Figure 7.1 and Figure 7.2.

![Figure 7.1: Link Volumes - 2036 Do Minimum, AM](image1)

![Figure 7.2: Link Volumes - 2036 Do Minimum, PM](image2)
7.1.3 Intersection Analysis

The 2036 Do Minimum AM and PM intersection traffic performance is compared against the 2017 and Option Model in Table 7.1. Most of the key intersections along Minmi Road, Newcastle Link Road and Thomas Street operate at LoS E-F with substantial delays for general traffic in 2036.

In the AM peak, significant delays and queue build-up for the general eastbound traffic is observed at:

- Woodford Street / Newcastle Link Road / Cameron Park Drive intersection as shown in Figure 7.3; and
- along Minmi Road at Minmi Road / Bottlebrush Boulevard, Warkworth Street / Minmi Road, Minmi Road / Summerhill Road and Minmi Road / McNaughton Avenue intersections as shown in Figure 7.4.

![Figure 7.3: Queues at Woodford Street / Newcastle Link Road– 2036 Do Minimum, AM Peak](image)

![Figure 7.4: Minmi Road Queues (Bottlebrush-McNaughton)– 2036 Do Minimum, AM Peak](image)
In the PM peak, significant delays and queue build-up for eastbound traffic is observed at:

- Lake Road / Thomas Street / Newcastle Link Road intersection as shown in Figure 7.5; and
- along Minmi Road at Minmi Road / Macquarie Street / Creek Road, Minmi Road / Bunnings and Sandgate Road / Minmi Road intersections as shown in Figure 7.6.

Figure 7.5: Queues at Lake / Thomas / Cowper – 2036 Do Minimum, PM Peak

Figure 7.6: Minmi Road Queues (Macquarie - Sandgate Road) – 2036 Do Minimum, PM Peak
**Table 7.1: 2036 Do Minimum Intersection Performance – AM and PM Peak Periods**

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7.1.4 Travel Times

Figure 7.7 and Figure 7.8 compare the 2036 Do Minimum AM peak clockwise and counter clockwise cumulative travel times with the 2017 Model and the 2026 Option Model. The 2036 Do Minimum Model in the AM peak (clockwise direction of travel) shows a progressive increase in travel time from Churnwood Road to the Bunnings intersection compared to the 2026 Option Model. In the counter-clockwise direction of travel, travel times steadily worsen from the Minmi Road intersection to the Lake Road intersection.
Figure 7.9 and Figure 7.10 compare the 2036 Do Minimum PM peak clockwise and counter clockwise cumulative travel times with the existing 2017 and the 2026 Option Model (‘Do Something’) PM cumulative travel times. The comparison shows that during the PM peak (clockwise direction of travel) there is a sharp increase in travel times from the Bunnings intersection to Lake Road. In the PM peak (counter clockwise direction of travel), there is a steady increase in travel time between Churwood Drive and Cameron Park Drive.

Figure 7.9: 2036 Do Minimum Travel Time – Clockwise, PM Peak

Figure 7.10: 2036 Do Minimum Travel Time – Counter Clockwise, PM Peak
7.1.5 2036 Do Minimum Traffic Performance Summary

The 2036 Do Minimum scenario yielded a significant increase in travel times, reduced intersection performance with much longer queues when compared to the 2026 Option Model. The extent of planned development between 2026 and 2036 is a key contributor to the excessive queuing and delays, coupled with the limited access/egress routes available. Queues at the Minmi Road / Cowper Street / Cameron Street intersection were seen to extend to Macquarie Street in the model and average intersection delays at the Longworth Avenue / Newcastle Road / Thomas Street intersection increased from 110 seconds to 225 seconds.

7.2 2036 OPTION MODEL TRAFFIC PERFORMANCE

7.2.1 2036 Option Model Network Changes

The 2036 Option Model was developed, tested and optimised in order to address the key intersection pinch point deficiencies within the network.

7.2.2 Proposed Improvements for Year 2036

This section summarises the proposed improvements made to the 2036 network in order to cater for the increased 2036 traffic demand. Appendix D shows the intersection improvements identified as being required by 2036. The improvements were:

Cowper Street / Newcastle Road Intersection
- extend the additional short northbound traffic lane as far as Dangar Street; and
- extend the additional short departure lane in Cowper Street (E) to a full traffic lane.

Cowper Street / Cameron Street Intersection
- free-flow left turn lane from north to east traffic at the Minmi Road / Sandgate Road intersection.

Sandgate Road / Wilkinson Avenue / Tillie Street Intersection
- re-configure the short lane heading east to west on Sandgate Road to a full lane between Sandgate Road/Wilkinson Avenue/Tillie Street and Minmi Road/Sandgate Road.

Minmi Road / Bunnings Intersection
- introduce traffic signals with pedestrian crossings on all three approaches. The existing roundabout configuration will not service the 2036 traffic volumes as long queues were observed on all approaches especially on the Bunnings exit approach. Roundabouts generally work well when approach flows are balanced. However, future traffic flows are heavily imbalanced with much higher through movements. Traffic signals are required to reduce excessive traffic delays and associated queues;
- three through lanes and one dedicated right turn lane (35m long) on the southbound approach; and
- three through lanes on the northbound approach.

Minmi Road / Macquarie Street / Creek Road Intersection
- additional lane eastbound and westbound on Minmi Road; and
- ban peak hour kerb side parking at the Macquarie Street approach to provide two full lanes.

Minmi Road / Warkworth Street Intersection
- additional lane on Minmi Road eastbound;
- re-configure the westbound approach, so that the median lane is shared between through and right turn movements;
- an additional through lane on the Minmi Road westbound departure;
- an additional 50m left turn lane on Warkworth Street;
- other forms of intersection including the introduction of a roundabout will potentially reduce traffic delays on Warkworth Street. However, a roundabout in this location will potentially increase traffic delays.
flows though Warkworth Street which is not designed to service high through traffic volumes. There are
direct house frontages and increased through traffic in this street will impact residential amenity and
local traffic safety.

Minmi Road / Kurraka Drive Intersection
- an additional lane on Minmi Road eastbound; and
- an additional 60m left turn short lane on Kurraka Drive.

Minmi Road / Britannia Boulevard Intersection
- an additional lane on Minmi Road eastbound.

Minmi Road / Highland Way Intersection
It is important to note that the following upgrade will only be required if the full level of development in the
model area is realised. It may be preferable that this project not be further considered now, and the
(roundabout) intersection is monitored into the future to determine if this configuration needs to be changed
at that time. This change, if required, would be likely to require the following:
- re-configure the roundabout to a priority type (give-way) intersection. This is required to reduce delays
  for the eastbound and westbound Minmi Road movements by prioritising them over the minor legs of
  the intersection;
- an additional left turn lane on the Highland Way northbound approach; and
- an additional traffic lane on Minmi Road eastbound.

Minmi Road / Blue Gum Hills Road Intersection
- an additional traffic lane on Minmi Road eastbound;
- an additional free flow short left turn lane on Blue Gum Hills Road (south); and
- an additional westbound traffic lane on Minmi Road west of the intersection.

Minmi Road / Woodford Street Intersection
- ban peak hour kerb side parking on Woodford Street southbound approach to provide two traffic lanes.

Mid-block Road Capacity Improvements
- widen Minmi Road to two-lanes eastbound between McCarthy Street and Awabakal Drive;
- widen Minmi Road to three-lanes eastbound between Fletcher Street and Sandgate Road;
- widen Minmi Road to three-lanes westbound between Sandgate Road and Maryland Drive;
- widen Minmi Road to two-lanes westbound between Summerhill Road and Bottlebrush Boulevard,
  between Bottlebrush Boulevard and Churnwood Drive, and between Blue Gum Hills Road and
  McInnes Street;
- widen Cowper Street to two-lanes each way between Union Street and John Street;
- ban peak hour kerb side parking on the Woodford Street Southbound to provide two lanes;
- ban peak hour kerb side parking along Woodford Street between Railway Street and Bell Street
  northbound; and
- ban peak hour kerb side parking on Sandgate Road between Minmi Road and Tillie Street.

7.2.3 Intersection Analysis
The 2036 Option Model network performance was compared with the 2036 Do Minimum and the Base 2017
models network performance. Table 7.2 shows how network performance for each scenario.
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7.2.4 Travel Times

The 2036 Option Model travel time was compared to the 2036 Do Minimum and the Base 2017 travel times, as shown in Figure 7.11 to Figure 7.14 for the clockwise and counter clockwise directions. In general, the upgrades introduced into the 2036 Option Model (‘Do Something’) significantly reduced travel times and returned them to nearly year 2017 conditions.

Figure 7.11: 2036 Travel Time – Clockwise, AM Peak

Figure 7.12: 2036 Travel Time – Counter Clockwise, AM Peak
Figure 7.13: 2036 Travel Time – Clockwise, PM Peak

Figure 7.14: 2036 Travel Time – Counter Clockwise, PM Peak
7.2.5 **2036 Option Model Traffic Performance Summary**

The 2036 Option Model resulted in significant reductions in travel times and intersection performance when compared to the 2036 Do Minimum scenario. The proposed works are shown to substantially improve the performance of the Longworth Avenue / Newcastle Road / Thomas Street intersection with a reduction of average delay from 225 seconds to 47 seconds.

It is noted that there is a significant increase in average delay experienced at the Newcastle Link Road / Minmi Road intersection from 130 seconds to 416 seconds in the AM peak hour. This is due to the release of additional traffic volumes with the proposed infrastructure upgrades into the Newcastle Link Road. This highlights a future issue with the need for Roads and Maritime to consider further upgrade needs for this corridor.

Overall though, the suite of upgrades proposed in 2021, 2026 and 2036 are likely to ensure that the study area network will operate at similar (but slightly worse) LoS compared to 2017 conditions in most parts of the network.
8. **LINK ROAD OPTION ASSESSMENT**

8.1 **LINK ROAD OPTION (OPTION 1)**

As shown in Figure 10.1 below, option 1 is envisaged to provide a connection between Minmi Road and Cowper Street by constructing a new link road between Minmi Road and Bulkara Street. The purpose of testing the link road option is to assess if any of the improvements suggested on Minmi Road for the 2036 Option Model scenario can be scaled back with this alternative route in place.

![Map showing Minmi Road and Bulkara Street](image)

Figure 8.1: Link Road between Minmi Road and Bulkara Street

8.2 **LINK ROAD OPTION: YEAR 2036 TRAFFIC PERFORMANCE**

8.2.1 Link Road Option Network Changes

The Option 1 (year 2036) model was developed using the same VISSIM network as the Option Model 2036 scenario and the traffic demand volumes of 2036, in order to identify any intersections within the network which can be scaled back due to the impact of the direct link between Minmi Road and Cowper Street.

8.2.2 Intersection Analysis

The 2036 Option Model network performance was compared to the Option 1 (year 2036) models’ network performance. Table 10.3 shows how the network performance for each scenario compares with one another.
### Table 8.1: Option 1 (Year 2036) Intersection Performance – AM and PM Peak Periods

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Intersection Control</th>
<th>LOS – AM (2036 Option Model) (delay in seconds)</th>
<th>Option 1 – AM (2036) (delay in seconds)</th>
<th>LOS – PM (2036 Option Model) (delay in seconds)</th>
<th>Option 1 – PM (2036) (delay in seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodford Street / Newcastle Link Road / Cameron Park Drive</td>
<td></td>
<td>D (50) D (48) D (47)</td>
<td>C (46)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodford Street / Minmi Road</td>
<td></td>
<td>C (30) B (29) C (32)</td>
<td>C (32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brookfield Avenue / Minmi Road</td>
<td>A (11) A (10) A (11)</td>
<td></td>
<td>A (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minmi Road / Highland Way</td>
<td>A (13) A (13) A (13)</td>
<td></td>
<td>A (13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minmi Road / Britannia Boulevard</td>
<td>A (10) A (9) B (B)</td>
<td></td>
<td>B (17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kurraka Drive / Minmi Road</td>
<td>A (11) A (12) A (6)</td>
<td></td>
<td>A (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awakabala Drive / Minmi Road / Bellbird Close</td>
<td>C (38) C (37) B (21)</td>
<td></td>
<td>B (20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maryland Drive / Minmi Road / Churnwood Drive</td>
<td>C (41) C (38) C (38)</td>
<td></td>
<td>C (37)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minmi Road / Bottlebrush Boulevard</td>
<td>A (8) A (8) D (49)</td>
<td></td>
<td>D (43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warkworth Street / Minmi Road</td>
<td>D (57) F (121) C (41)</td>
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<td>C (31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minmi Road / Summerhill Road</td>
<td>A (4) A (6) B (16)</td>
<td></td>
<td>A (15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McNaughton Avenue / Minmi Road</td>
<td>C (41) C (35) D (44)</td>
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<td>B (20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maryland Drive / Minmi Road</td>
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<td></td>
<td>B (23)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creek Road / Minmi Road / Macquarie Street</td>
<td>B (29) X (30) C (38)</td>
<td></td>
<td>D (44)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minmi Road / Bunnings</td>
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<td></td>
<td>A (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandgate Road / Minmi Road</td>
<td>B (17) B (18) B (21)</td>
<td></td>
<td>B (24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cameron Street / Longworth Avenue / Cowper Street / Minmi Road</td>
<td>C (34) C (30) C (38)</td>
<td></td>
<td>C (31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandgate Road / Tillie Street / Wilkinson Avenue</td>
<td>B (29) C (32) C (32)</td>
<td></td>
<td>C (36)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tillie Street / Douglas Street / Cameron Street</td>
<td>C (35) C (30) C (23)</td>
<td></td>
<td>B (20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomas Street / Walford Street</td>
<td>B (23) C (38) B (37)</td>
<td></td>
<td>D (43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longworth Avenue / Newcastle Road / Thomas Street</td>
<td>A (14) C (30) A (47)</td>
<td></td>
<td>E (59)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newcastle Road / Cowper Street</td>
<td>A (15) B (19) A (19)</td>
<td></td>
<td>D (46)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kokera Street / Cowper Street</td>
<td>C (35) C (36) C (39)</td>
<td></td>
<td>E (69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metcalfe Street / Thomas Street</td>
<td>B (23) B (24) B (36)</td>
<td></td>
<td>C (39)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Road / Cowper Street</td>
<td>A (15) F (182) A (58)</td>
<td></td>
<td>F (117)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Road / Thomas Street / Newcastle Link Road</td>
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<td></td>
<td>F (84)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newcastle Link Road / Minmi Road</td>
<td>D (50) F (461) D (38)</td>
<td></td>
<td>F (94)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nelson Street / Cowper Street</td>
<td>B (16) B (16) B (21)</td>
<td></td>
<td>C (34)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 8.2 shows the traffic volume that the link road between Minmi Road and Cowper Street would accommodate in the northbound and southbound directions for both the AM and PM peak periods.

8.2.3 Travel Time Analysis

Figure 8.3 through Figure 8.6 compare the AM and PM peak clockwise and counter clockwise cumulative travel times between the 2036 Link Road Option and the 2036 Option Model.

Figure 8.3: 2036 Link Road Option Travel Time – Clockwise, AM Peak
Figure 8.4: 2036 Link Road Option Travel Time – Counter Clockwise, AM Peak

Figure 8.5: 2036 Link Road Option Travel Time – Clockwise, PM Peak
There are very little differences in travel times on the core loop route being compared with the exception of the counter-clockwise direction in the AM peak which shows a worsening from Lake Street onwards.

8.2.4 Link Road Option Outcomes/Summary

The VISSIM modelling shows that the Link Road Option slightly reduces travel times through the study area and slightly improves intersection performance. However, the Link Road is found to significantly worsen the performance of the Warkworth Street / Minmi Road intersection in the AM peak and the Newcastle Road / Cowper Street intersection during the PM peak. The introduction of the proposed bypass will increase the AM peak right turn volumes from Minmi Road eastbound to Summerhill Road Southbound. The modelling shows that the queues of right turn traffic will extend back to the Warkworth Street intersection thereby restricting traffic flows from that road. In the PM peak, a significant number of trips travelling from Newcastle City Centre to Minmi would use the bypass route. These vehicles would use the Newcastle Road / Cowper Street intersection to access the bypass.
10. CYCLING AND FOOTPATH INFRASTRUCTURE

10.1 CYCLING FACILITIES

There are a variety of cycling infrastructure types within the Minmi Road development corridor and the broader study area. These include:

- **On-Road Cycling Lanes** – allowing cyclists a defined space to travel alongside other vehicles. This improves the safety of the interaction of cyclists and other vehicles on the road, as cyclists are removed from the general traffic lanes. It also provides cyclists a defined path of travel through intersections, with heightened awareness of cyclist activity for motorists, highlighted by bright green paint. Key areas where on-road cycling lanes were used are:
  - sections of Minmi Road;
  - Thomas Street; and
  - Newcastle Link Road.

- **Cyclist-Only Paths** – off-road cycling opportunities linking other cycling infrastructure. These paths provide a safe and unobstructed passage of travel for cyclists, often to avoid high-scale conflicts with vehicles. Locations where cyclist only paths were used include:
  - between Newcastle Road and Thomas Street;
  - access to Newcastle Link Road from Lake Road; and
  - connecting Kempt Street across Newcastle Road.

- **Shared Paths** – creating a shared environment for low speed cycling and pedestrian activity. These paths are used in many intersections throughout the study area, in particular along Minmi Road. They are connected by a crossing, such as a pedestrian refuge or signalised crossing point. Shared paths are also used in conjunction with on-road cycling lanes at some intersections. Key intersections where shared paths are employed to improve the safety of cyclists crossing include:
  - Minmi Road / Bunnings Access;
  - Minmi Road / Macquarie Street;
  - Minmi Road / Maryland Drive / Creek Road;
  - Minmi Road / Summerhill Road;
  - Minmi Road / Bottlebrush Boulevard;
  - Minmi Road / Churnwood Drive;
  - Minmi Road / Awabakal Drive; and
  - Minmi Road / Kurraka Drive.

- **On-Road Cycling** – cycling is undertaken in the general traffic lanes. Generally, there is some form of bicycle-related infrastructure along these routes, however some sections of on-road cycling also exist on Kemp Street and Lake Road where no such infrastructure exists.

Generally, there is a high level of cycling infrastructure within the study area, encouraging cyclists along Thomas Street / Newcastle Road, Newcastle Link Road, Cowper Street, sections of Minmi Road and to and from the Wallsend Town Centre. However, this infrastructure is disconnected from the rest of the active transport network, with a lack of obvious cycling routes on Minmi Road between Maryland Drive and Summerhill Road and between Woodford Street and Brookfield Avenue. There is also a lack of connectivity between Cowper Street and Newcastle Road / Thomas Street.

The existing facilities and proposed improvements are shown in Figure 10.1.
Figure 10.1: Existing and Proposed Infrastructure

The proposed infrastructure along the sections of the Minmi Road corridor are:

- **Missing Link 1:** The existing section of roadway on Minmi Road between Brookfield Avenue and Blue Gum Hills Road requires cyclists to share the road with other vehicles, as shown in Figure 10.3. Cyclists share the carriageway with general traffic. The posted speed limit of this section of Minmi Road is 70 km/h, subjecting cyclists to conflicts with vehicles travelling at high speeds;

- **Missing Link 2:** On the southern side of Minmi Road between Brookfield Avenue and Britannia Boulevard there is a lack of connection between short sections of defined on-road cycling lanes. Construction is ongoing at this location;

- **Missing Link 3:** Another missing link is the northern side of Minmi Road between Maryland Drive (west) and Summerhill Road. The eastbound carriageway of the 340m section of Minmi Road is approximately 7m wide. Kerbside parking is provided for approximately 170m section of the road. The remaining 170m is wide enough to introduce formal bicycle facilities.

The missing links are identified in Figure 10.2.

Figure 10.2: Missing Cycle Lanes on the Minmi Road Corridor
As part of the 2013 Western Corridor Section 94 Contribution Plan, a cycleway was proposed connecting Britannia Boulevard and Woodford Street along Minmi Road. However, the road width throughout this section is relatively narrow and additional pavement may be required.

The CoN has also outlined upgrades to their current cycling network in the *Newcastle Cycling Strategy and Action Plan*. Improvements include:

- increasing the connectivity of cycling infrastructure along Minmi Road by providing an on-road cycling route along its entirety;
- providing off-road cycling facilities between Maryland Drive, at Churnwood Drive, and Minmi Cemetery access;
- creating an on-road cycling route from Ganney Road to Minni Road, along Bousfield Street, Devon Street, Kenrick Street and Macquarie Street; and
- providing on-road cycling connectivity between Cowper Street and Newcastle Road via Murnin Street.

### 10.2 PEDESTRIAN FACILITIES

#### 10.2.1 Current Infrastructure

The majority of footpaths along Minmi Road are shared paths. There is a lack of connectivity between sections of footpaths as shown in the example in Figure 10.4.
Like the cycling facilities, the pedestrian network is more developed from Brookfield Avenue to Cowper Street. The following pedestrian facilities are provided along the Minmi Road corridor:

- shared path where pedestrian share the foot with cyclists;
- pedestrian crossing facilities at signalised intersections; and
- pedestrian refuge islands.

There is limited existing mid-block connectivity across Minmi Road. Pedestrian refuges are provided near Bottlebrush Boulevard, Warkworth Street and Summerhill Road. Connectivity between residential areas and community facilities, such as parks and community centres, is generally well catered for.

Generally, there is a footpath on at least one side of the road in suburban areas along the Minmi Road corridor. However, there are some sections of Minmi Road which do not have any formalised pedestrian infrastructure. Typically, footpaths on Minmi Road are located near intersections to provide increased safety at road crossings. Longer footpath sections along Minmi Road are found:

- between Cowper Street and Macquarie Street (shared path – southern side only);
- between Creek Road and Maryland Drive (shared path – northern side only);
- between Maryland Drive (at Churnwood Drive) to Kurraka Drive (shared path – northern side only);
- Britannia Boulevard to Highland Way (mix of pedestrian footpath and shared path - southern side only);
- in the vicinity of Brookfield Avenue (shared path - northern side only); and
- between the Minmi Cemetery access and Woodford Street (mix of pedestrian footpath and shared path southern side only).

### 10.2.2 Missing Pedestrian Links

The following links along Minmi Road have been identified where no pedestrian facilities have been provided on either side of the road:

- **Missing Link 1**: McInnes Street to Brookfield Avenue;
- **Missing Link 2**: Between Britannia Blvd and Kurraka Drive;
- **Missing Link 3**: Churnwood Drive to Summerhill Road; and
- **Missing Link 4**: Summerhill Road to Maryland Drive.

These sections are shown in Figure 10.5.

![Figure 10.5: Missing Pedestrian Links on Minmi Road](image)
**Missing Link 1: McInnes Street to Brookfield Avenue**

A short section on Minmi Road, between McInnes Street in the west and Brookfield Avenue in the east, through a typically rural settings with limited driveway access directly onto Minmi Road.

**Missing Link 2: Between Britannia Blvd and Kurraka Drive**

This section of Minmi Road between Britannia Blvd and Kurraka Drive currently has no pedestrian facilities provided. There is a shared pedestrian path on the northern side of Minmi Road, just to the east of this missing link. There is also a shared pedestrian facility just to the west of the missing link.

**Missing Link 3: Churnwood Drive to Summerhill Road**

Between Churnwood Drive and Summerhill Road, the only opportunities to cross Minmi Road are the approaches to the Minmi Road / Bottlebrush Boulevard and Minmi Road / Summerhill Road roundabouts. In addition, there is approximately 45m of shared path on the west of Minmi Road at the Warkworth Street intersection. Any footpaths along this section are connected into residential areas along roads adjoined to Minmi Road, although the footpaths were abruptly discontinued on Minmi Road, as shown in Figure 10.6.

![Figure 10.6: Footpath ends at driveway south of Minmi Road / Summerhill Road Roundabout](image)

**Missing Link 4: Summerhill Road to Maryland Drive.**

The missing link from Churnwood Drive to Summerhill Road (Missing Link 3) extends into the Summerhill Road and Maryland Drive section (Missing Link 4).

The section of Minmi Road between Churnwood Drive and Maryland Drive has residential properties on both sides. Continuous pedestrian footpath and controlled crossing facilities are essential to enable pedestrian accessibility between the residential areas. The remainder of Minmi Road, to the east, offers a pedestrian link on at least one side of the road.

10.2.3 Pedestrian Connections

There are numerous pedestrian connections between streets and adjoining residential areas in the newly developed suburbs along either side of Minmi Road. These connections provide shorter trips for pedestrians, encouraging active transport over the use of private vehicles. Examples of pedestrian connections include:

- laneways between properties connecting streets;
- footpaths through bushland connecting residential areas;
- staircases providing connection between two areas of different grade;
▪ pathways to parks and community facilities;
▪ foot bridges across creeks; and
▪ crossing opportunities across Minmi Road.

Increased connectivity between Minmi Road, bus stops, shopping centres, parklands and community facilities will continue to encourage active transport and reduce reliance on private vehicle trips. Key pedestrian connections within the study area and locations where connectivity could be improved are shown in Figure 10.7.

**Figure 10.7:** Existing and Proposed New Pedestrian Connections
10.2.4 Minmi Road Footpaths (Churnwood Drive to Britannia Boulevard)

Additional pedestrian facilities should also be considered for connecting the existing retail developments near Britannia Boulevard and Churnwood Drive. The Fletcher Village retail precinct is located on the southern side of Minmi Road. With the current arrangement, pedestrians travelling between the residential areas near Britannia Boulevard and Bellbird Close, south of Minmi Road, have to cross Minmi Road twice to access the retail precinct. A continuous pedestrian path between Churnwood Drive and Britannia Boulevard, along the southern side of Minmi Road, would ensure that these pedestrians do not have to cross Minmi Road. Evidence of pedestrian use of bushland areas is visible from Bellbird Close to Minmi Road, and between Weller Street and Beech Close, as outlined in Figure 10.8.

Pedestrian connections to be considered are shown in Figure 10.8 and include:

- a shared path the southern side of Minmi Road between Churnwood Drive and Britannia Boulevard; and
- a pedestrian connection between Weller Street and Beech Close, through the existing bushland.

Figure 10.8: Minmi Road Pedestrian Infrastructure
INFRASTRUCTURE COSTS

11.1 METHODOLOGY

Costing analysis has been undertaken of all intersection and road upgrades in conjunction with CoN to determine the value of the suite of works. Pricing for each component was sourced from the Independent Pricing and Regulatory Tribunal (NSW) – Local Infrastructure Benchmark Costs (IPART) report (April 2015). Each item’s rate has been manually adjusted to reflect the to reflect the respective CPI Growth Index rate for each horizon year (2021, 2026 & 2036). An additional factor of 20% has been applied to the final rates to cater for the location and congestion, as recommended by the IPART report. Further, a factor of 30% was also added to the final price to cater for any contingencies.

11.2 2021 OPTION MODEL SCENARIO COSTING

The road and intersection upgrades detailed in Section 5.2.2 have been costed in accordance with the abovementioned methodology. The resultant cost estimate for each road and intersection upgrade is provided in Table 11.1.

Table 11.1: 2021 Option Model Scenario Costing Summary

<table>
<thead>
<tr>
<th>Intersection / Upgrade Type</th>
<th>TOTAL (with 30% contingency)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intersection Upgrades</strong></td>
<td></td>
</tr>
<tr>
<td>Cowper Street / Lake Road</td>
<td>$2,477,011</td>
</tr>
<tr>
<td>Cowper Street / Newcastle Road</td>
<td>$780,000</td>
</tr>
<tr>
<td>Sandgate Road / Wilkinson Avenue / Tillie Street</td>
<td>$6,924,436</td>
</tr>
<tr>
<td>Cowper Street / Cameron Street / Sandgate Road / Minmi Road</td>
<td>$2,488,871</td>
</tr>
<tr>
<td>Minmi Road / Awabakal Drive</td>
<td>$2,361,527</td>
</tr>
<tr>
<td>Minmi Road / Highland Way</td>
<td>$755,436</td>
</tr>
<tr>
<td>Minmi Road / Woodford Street</td>
<td>$1,459,796</td>
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<tr>
<td><strong>Road Widening Upgrades</strong></td>
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</tr>
<tr>
<td>Awabakal Drive to Maryland Drive - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$3,844,346</td>
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<tr>
<td>Maryland Drive to Bottlebrush Boulevard (EB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$3,130,396</td>
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<tr>
<td>Bottlebrush Boulevard to Warkworth Street (EB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$1,922,173</td>
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<tr>
<td>Warkworth Street to Summerhill Road (EB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$4,173,861</td>
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<tr>
<td>Cameron Street to Newcastle Road (SB) - Add lanes (1 to 2 lanes) - Longworth Avenue</td>
<td>$6,162,407</td>
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<tr>
<td>Land Acquisition Costs</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL COST</strong></td>
<td>$36,480,260</td>
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</table>

11.3 2026 OPTION MODEL SCENARIO COSTING

The road and intersection upgrades detailed in Section 6.2.2 have been costed in accordance with the abovementioned methodology. The resultant cost estimate for each road and intersection upgrade is provided in Table 11.2
<table>
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<tr>
<th>Intersection / Upgrade Type</th>
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</thead>
<tbody>
<tr>
<td><strong>Intersection Upgrades</strong></td>
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</tr>
<tr>
<td>Cowper Street / Kokera Street</td>
<td>$2,637,596</td>
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<tr>
<td>Cowper Street / Nelson Street</td>
<td>$281,452</td>
</tr>
<tr>
<td>Cowper Street / Newcastle Road</td>
<td>$360,259</td>
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<td>Sandgate Road / Wilkinson Avenue / Tillie Street</td>
<td>$960,690</td>
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<tr>
<td>Copwer Street / Cameron Street</td>
<td>$2,151,078</td>
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<tr>
<td>Minmi Road / Maryland Drive</td>
<td>$2,221,596</td>
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<tr>
<td>Minmi Road / McNaughton Avenue</td>
<td>$337,743</td>
</tr>
<tr>
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<td>$1,460,863</td>
</tr>
<tr>
<td><strong>Road Widening Upgrades</strong></td>
<td></td>
</tr>
<tr>
<td>Anna Place to Maryland Drive (EB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$1,688,713</td>
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<tr>
<td>Mclnnes Street to McCarthy Street (EB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
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<tr>
<td>McCarthy Street to Mclnnes Street (WB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$619,195</td>
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<tr>
<td>Bunnings to Macquarie Street (WB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$7,925,693</td>
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<tr>
<td>Maryland Drive to Anna Place (WB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$3,182,286</td>
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<tr>
<td>Kokera Street to Nelson Street (EB) - Add lanes (1 to 2 lanes) - Cowper Street</td>
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<tr>
<td>John Street to Minmi Road (EB) - Add lanes (1 to 2 lanes) - Cowper Street</td>
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<tr>
<td>Union Street to Newcastle Road (WB) - Add lanes (1 to 2 lanes) - Cowper Street</td>
<td>$365,888</td>
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<tr>
<td>Newcastle Road to John Street (NB) - Add lanes (1 to 2 lanes) - Longworth Avenue</td>
<td>$816,211</td>
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<td>Ban kerb side parking (EB) between Newcastle Road and Union Street - Copwer Street</td>
<td>$6,500</td>
</tr>
<tr>
<td>Ban kerb side parking (EB) between Lake Road and Kokera Street and Newcastle Road - Copwer Street</td>
<td>$6,500</td>
</tr>
<tr>
<td>Ban kerb side parking (WB) between Newcastle Road and Nelson Street and Kokera Street and Lake Road - Copwer Street</td>
<td>$6,500</td>
</tr>
<tr>
<td>Ban kerb side parking (SB) between Minmi Road and Railway Street - Woodford Street</td>
<td>$13,000</td>
</tr>
<tr>
<td>Ban kerb side parking (NB) between Bell Street and Minmi Road - Woodford Street</td>
<td>$6,500</td>
</tr>
<tr>
<td><strong>Land Acquisition Costs</strong></td>
<td>$873,438</td>
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<tr>
<td><strong>TOTAL COST</strong></td>
<td><strong>$28,670,549</strong></td>
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</tbody>
</table>

### 11.4 2036 Option Model Scenario Costing

The road and intersection upgrades detailed in Section 7.2.2 have been costed in accordance with the abovementioned methodology. The resultant cost estimate for each road and intersection upgrade is provided in Table 11.3.
### Table 11.3: 2036 Option Model Scenario Costing Summary

<table>
<thead>
<tr>
<th>Intersection / Upgrade Type</th>
<th>TOTAL (with 30% contingency)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intersection Upgrades</strong></td>
<td></td>
</tr>
<tr>
<td>Cowper Street / Newcastle Road</td>
<td>$571,915</td>
</tr>
<tr>
<td>Cowper Street / Cameron Street</td>
<td>$3,740,170</td>
</tr>
<tr>
<td>Minmi Road / Bunnings</td>
<td>$8,827,052</td>
</tr>
<tr>
<td>Minmi Road / Macquarie Street / Creek Road</td>
<td>$4,957,288</td>
</tr>
<tr>
<td>Minmi Road / Workworth Street</td>
<td>$4,762,852</td>
</tr>
<tr>
<td>Minmi Road / Kurraka Drive</td>
<td>$4,044,024</td>
</tr>
<tr>
<td>Minmi Road / Britannia Boulevard</td>
<td>$2,870,788</td>
</tr>
<tr>
<td>Minmi Road / Highland Way</td>
<td>$4,112,325</td>
</tr>
<tr>
<td>Minmi Road / Blue Gum Hills Road</td>
<td>$4,762,852</td>
</tr>
<tr>
<td>Minmi Road / Woodford Street</td>
<td>$6,500</td>
</tr>
<tr>
<td><strong>Road Widening Upgrades</strong></td>
<td></td>
</tr>
<tr>
<td>McCarthy Street to Awabakal Drive (EB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$33,014,059</td>
</tr>
<tr>
<td>Fletcher Street to Sandgate Road (EB) - Add lanes (2 to 3 lanes) - Minmi Road</td>
<td>$12,918,545</td>
</tr>
<tr>
<td>Sandgate Road to Maryland Drive (WB) - Add lanes (2 to 3 lanes) - Minmi Road</td>
<td>$15,071,636</td>
</tr>
<tr>
<td>Summerhill Road to Bottlebrush Boulevard (WB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$6,602,812</td>
</tr>
<tr>
<td>Bottlebrush Boulevard to Churnwood Drive (WB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$5,023,879</td>
</tr>
<tr>
<td>Blue Gum Hills Road to McInnes Street (WB) - Add lanes (1 to 2 lanes) - Minmi Road</td>
<td>$6,889,891</td>
</tr>
<tr>
<td>Union Street to John Street (EB) - Add lanes (1 to 2 lanes) - Cowper Street</td>
<td>$1,682,102</td>
</tr>
<tr>
<td>John Street to Union Street (WB) - Add lanes (1 to 2 lanes) - Cowper Street</td>
<td>$1,682,102</td>
</tr>
<tr>
<td>Railway Street to Newcastle Link Road (SB) - Add lanes (1 to 2 lanes) - Woodford Street</td>
<td>$20,813,211</td>
</tr>
<tr>
<td>Ban peak hour kerb side parking on Minmi Road between Macquarie Street and Maryland Drive heading westbound</td>
<td>$13,000</td>
</tr>
<tr>
<td>Ban peak hour kerb side parking on the southbound Woodford Street approach to provide for two traffic lanes</td>
<td>$6,500</td>
</tr>
<tr>
<td>Ban peak hour kerb side parking between Railway Street and Bell Street (along Woodford Street) heading northbound</td>
<td>$6,500</td>
</tr>
<tr>
<td>Ban peak hour kerb side parking on Sandgate Road between Minmi Road and Tillie Street</td>
<td>$13,000</td>
</tr>
<tr>
<td>Land Acquisition Costs</td>
<td>$10,140,000</td>
</tr>
<tr>
<td><strong>TOTAL COST</strong></td>
<td>$152,533,002</td>
</tr>
</tbody>
</table>
11.5 PEDESTRIAN AND CYCLING INFRASTRUCTURE

11.5.1 Cycling Infrastructure

The cycling infrastructure detailed in Section 10.1 has been costed and provided in Table 11.4.

Table 11.4: Cycling Infrastructure Costs

<table>
<thead>
<tr>
<th>Upgrade</th>
<th>Upgrade (with 10% contingency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Gum Hills Road to Brookfield Avenue (Northern side of Minmi Road)</td>
<td>$380,737.85</td>
</tr>
<tr>
<td>Brookfield Avenue to Blue Gum Hills Road (Southern side of Minmi Road)</td>
<td>$380,737.85</td>
</tr>
<tr>
<td>Britannia Boulevard to Brookfield Avenue</td>
<td>$158,640.77</td>
</tr>
<tr>
<td>Maryland Drive to Summerhill Road</td>
<td>$174,504.85</td>
</tr>
<tr>
<td>TOTAL COST</td>
<td>$1,094,621</td>
</tr>
</tbody>
</table>

11.5.2 Pedestrian Infrastructure

The cycling infrastructure detailed in Section 10.2 has been costed and provided in Table 11.5.

Table 11.5: Pedestrian Infrastructure Costs

<table>
<thead>
<tr>
<th>Upgrade</th>
<th>Year</th>
<th>TOTAL (with 10% contingency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tallowood Crest to Jetty Parade</td>
<td>2021</td>
<td>$ 489,555</td>
</tr>
<tr>
<td>Cottonwood Chase to Weller Street</td>
<td>2021</td>
<td>$ 575,947</td>
</tr>
<tr>
<td>Beech Close to Weller Street</td>
<td>2021</td>
<td>$ 590,345</td>
</tr>
<tr>
<td>Along Minmi Road (between Churnwood Drive &amp; Bellbird Close)</td>
<td>2021</td>
<td>$ 604,744</td>
</tr>
<tr>
<td>St Andrews Way to Styles Close</td>
<td>2026</td>
<td>$ 393,551</td>
</tr>
<tr>
<td>Waterside Drive to Hebrides Road</td>
<td>2026</td>
<td>$ 188,905</td>
</tr>
<tr>
<td>Waterside Drive to Tartan Place</td>
<td>2026</td>
<td>$ 355,770</td>
</tr>
<tr>
<td>Waterside Drive to Plattsburg Parade</td>
<td>2026</td>
<td>$ 289,654</td>
</tr>
<tr>
<td>Wedgetail Street to Crestview Street</td>
<td>2026</td>
<td>$ 273,912</td>
</tr>
<tr>
<td>Wedgetail Street to Crestview Street</td>
<td>2026</td>
<td>$ 550,972</td>
</tr>
<tr>
<td>Pebblestone Street to Kingfisher Drive</td>
<td>2026</td>
<td>$ 428,184</td>
</tr>
<tr>
<td>Pebblestone Street to Kingfisher Drive</td>
<td>2026</td>
<td>$ 333,731</td>
</tr>
<tr>
<td>Mowane Street to Awabakal Drive</td>
<td>2036</td>
<td>$ 696,211</td>
</tr>
<tr>
<td>Minmi Road to Glendore Parade</td>
<td>2036</td>
<td>$ 827,926</td>
</tr>
<tr>
<td>Minmi Road to Yapug Close</td>
<td>2036</td>
<td>$ 470,413</td>
</tr>
<tr>
<td>TOTAL COST</td>
<td></td>
<td>$7,069,819</td>
</tr>
</tbody>
</table>
12. **CONCLUSIONS**

The key findings of this traffic and transport study are as follows:

- A site visit showed that there was inadequate parking, cycling and pedestrian infrastructure throughout the study area;
- Congestion was observed on the northern approach to the Minmi Road / Cowper Street intersection;
- The calibrated 2017 base model showed minor congestion at local intersections with the majority of the road network operating within acceptable performance parameters;
- A total of 4,580 trips are anticipated to be added to the road network through approved and planned developments within the study area;
- The anticipated traffic volumes in the 2021 future year scenarios shows the significant worsening of intersection performance (and travel times) across the study area;
- A suite of proposed upgrades in 2021 reduces vehicle travel times to slightly in excess of the 2017 base case performance;
- The 2026 future year scenario (Do Minimum) shows extensive queuing on the northern leg of the Minmi Road / Cowper Street / Cameron Street intersection;
- The 2026 suite of upgrades includes capacity improvements along Minmi Road and Cowper Street, specifically, on the section of Minmi Road between the Bunnings access and Cowper Street;
- The 2026 future year scenario (Do Minimum) shows extensive queuing on the northern leg of the Minmi Road / Cowper Street / Cameron Street intersection during the PM peak hour;
- The 2036 future year scenario (Do Minimum) shows southbound queues on Minmi Road between McNaughton Avenue and Maryland Drive during the AM peak hour;
- The 2036 future year scenario (Do Minimum) also shows extensive eastbound queues at the Newcastle Link Road / Lake road intersection during the PM peak;
- The potential link road between Minmi Road and Bulkara Street had a network-wide benefit and in anticipated to a reduction of travel times; however, the intersections in proximity to the entrances to the new link road was observed to experience increased congestion;
- The proposed suite of traffic infrastructure works to maintain an acceptable level of service across the study area is estimated to cost:
  - $36,480,260 in 2021;
  - $28,670,551 in 2026; and
  - $152,533,002 in 2036; and
- Additional footpaths are expected to cost $7,069,819 by 2036 and additional cycling infrastructure is expected to cost $1,096,621.

The study area’s road network is approaching capacity now at it southern end with limited committed upgrades to address these issues. As there is very little route choice in the network, and because the network is at the exponential end of the relationship between traffic flow and delay, additional development traffic will generate the need for a large number of traffic upgrades, if current levels of service are desired to be maintained.

The suite of upgrades proposed in 2021, 2026 and 2036 is shown to provide intersection levels of service similar to, but slightly worse than those experienced in 2017. A significant number of upgrades are required at an overall costs in excess of $226M to cater for an expected increase of over 50,000 vpd with expected development and an increase of 22,000 vpd of through traffic.

In addition to the above, if the proposed upgrades in the study area are implemented by 2036, then there are likely to be further capacity issues along the Newcastle Link Road corridor with its capacity being reached. This would consequently impact the ability for residents to access and egress the study area.
APPENDIX A

MODEL CALIBRATION AND VALIDATION TECHNICAL NOTE
Western Corridor VISSIM Model Calibration and Validation

1. INTRODUCTION

1.1 BACKGROUND

Bitzios Consulting was engaged by The City of Newcastle (Council) to undertake a traffic and transport study of the Western Corridor area centred around Minmi, Fletcher, Maryland and Wallsend. It is understood that the Newcastle Western Corridor Urban Release Area is the most significant remaining residential land release within the Newcastle Local Government Area, and a significant residential growth of 64% has been anticipated from year 2011 to year 2036. It is essential to identify the transport infrastructure required to satisfy the future demand. This project has been proposed to take place in the following stages:

- Stage 1: Data collection / collation, existing situation analysis and base model;
- Stage 2: Future base year modelling;
- Stage 3: Option analysis for new link roads;
- Stage 4: Pedestrian and cycle network, strategic cost estimate and updating section 94; and
- Stage 5: Final Traffic and Transport Report and presentation of the report.

An existing condition VISSIM micro-simulation traffic model has been developed for the Western Corridor along Minmi Road, Woodford Street and Newcastle Link Road including surrounding roads. The model demonstrates the existing traffic conditions during a typical weekday morning and evening peak periods, and can be used to create future year models to assess traffic performance in the study area.

This Technical Note summarises the model development process and key assumptions as well as the calibration and validation of the base model.

1.2 LOCATION AND STUDY AREA

The extent of the study area was bounded by

- Newcastle Link Road; and
- Minmi Road.

The study area as mentioned above is shown overleaf in Figure 1.1.
1.3 INTERSECTIONS

Several key intersections which were assessed as part of the model are listed below and is shown in Figure 1.2 overleaf:

- 101 - Woodford Street at Newcastle Link Road;
- 102 - Woodford Street at Minmi Road;
- 103 - Brookfield Avenue at Minmi Road;
- 104 - Highland Way at Minmi Road;
- 105 - Britannia Boulevard at Minmi Road;
- 106 - Kurraka Drive at Minmi Road;
- 107 - Awabakal Drive at Minmi Road;
- 108 - Churnwood Drive at Minmi Road;
- 109 - Bottlebrush Boulevard at Minmi Road;
- 110 - Warkworth Drive at Minmi Road;
- 111 - Summerhill Road at Minmi Road;
- 112 - McNaughton Avenue at Minmi Road;
- 113 - Maryland Drive at Minmi Road;
- 114 – Macquarie Street at Minmi Road;
- 115 - Minmi Road at Bunnings Access;
- 116 - Sandgate Road at Minmi Road;
- 117 - Cowper Street at Minmi Road;
- 118 - Tillie Street at Sandgate Road;
- 119 - Tillie Street at Wilkinson Avenue;
- 120 - Cameron Street at Tillie Street;
- 121 - Walford Street at Thomas Street;
- 122 - Newcastle Road at Longworth Avenue;
- 123 - Newcastle Road at Cowper Street;
- 124 - Cowper Street at Kokera Street (Shopping Centre Access);
Western Corridor VISSIM Model Calibration and Validation

- 125 - Thomas Street at Metcalfe Street;
- 126 - Cowper Street at Lake Road;
- 127 - Lake Road at Newcastle Link Road;
- 128 - Newcastle Link Road at Minmi Road (South); and
- 129 - Cowper Street at Nelson Street.

Figure 1.2: Study Area and Modelled Intersections
2. **DATA SOURCES**

The process of developing the base VISSIM model for the study area involved creating the existing layout models from aerial images and validating the models against a range data including:

- intersection turn counts;
- travel time surveys;
- origin-destination surveys; and
- intersection diagnostic monitor data.

A significant portion of this data was provided by the Council however, surveys were conducted at several locations where data was not available.

2.1 **INTERSECTION COUNTS**

Intersection count data was provided by council for the following locations:

- 101 - Woodford Street at Newcastle Link Road;
- 102 - Woodford Street at Minmi Road;
- 103 - Brookfield Avenue at Minmi Road;
- 104 - Highland Way at Minmi Road;
- 105 - Britannia Boulevard at Minmi Road;
- 106 - Kurraka Drive at Minmi Road;
- 107 - Awabakal Drive at Minmi Road;
- 108 - Churnwood Drive at Minmi Road;
- 109 - Bottlebrush Boulevard at Minmi Road;
- 110 - Warkworth Street at Minmi Road;
- 111 - Summerhill Road at Minmi Road;
- 112 - McNaughton Avenue at Minmi Road;
- 113 - Maryland Drive at Minmi Road;
- 114 - Macquarie Street at Minmi Road;
- 115 - Minmi Road at Bunnings Access;
- 116 - Sandgate Road at Minmi Road; and
- 117 - Cowper Street at Minmi Road.

Turn count surveys were undertaken at the following intersections to obtain model input data:

- 118 - Tillie Street at Sandgate Road;
- 119 - Tillie Street at Wilkinson Avenue;
- 120 - Cameron Street at Tillie Street;
- 121 - Walford Street at Thomas Street;
- 122 - Newcastle Road at Longworth Avenue;
- 123 - Newcastle Road at Cowper Street
- 124 - Cowper Street at Kokera Street (Shopping Centre Access);
- 125 - Thomas Street at Metcalfe Street;
- 126 - Cowper Street at Lake Road;
- 127 - Lake Road at Newcastle Link Road;
- 128 - Newcastle Link Road at Minmi Road (South); and
- 129 - Cowper Street at Nelson Street.
2.2 **TRAVEL TIME SURVEYS**

Bitzios Consulting commissioned travel time surveys to be conducted along Minmi Road and Newcastle Link Road. The surveys were conducted by TDC for the AM and PM peak periods. The route was separated into a number of sub sections in order to verify localised delays at various locations. The clockwise and counter-clockwise routes are shown in Figure 2.1.

![Travel Time Survey Routes and Sub-sections](image)

Figure 2.1: Travel Time Survey Routes and Sub-sections

2.3 **ORIGIN-DESTINATION SURVEYS**

Origin-destination surveys were undertaken by Matrix and considered the following 10 locations:

- Newcastle Link Road (West of Woodford Road);
- Minmi Road South (Sth of Newcastle Link Road);
- Lake Road (Sth of Newcastle Link Road);
- Walford Road (Sth of Thomas Street);
- Metcalfe Street (Sth of Thomas Street);
- Newcastle Road (East of Thomas Street);
- Cameron Street (East of Minmi Road);
- Minmi Road at Bunnings Access;
- Maryland Drive (Nth of Minmi Road);
- Maryland Drive West (Nth of Minmi Road); and
- Woodford Street (Nth of Minmi Road).

Figure 2.2 shows the origin-destination survey locations.
2.4 **INTERSECTION DIAGNOSTIC MONITOR DATA**

Intersection diagnostic monitor (IDM) data was provided for the following signalised intersections:

- 101 - Woodford Street at Newcastle Link Road;
- 102 - Woodford Street at Minmi Road;
- 107 - Awabakal Drive at Minmi Road;
- 108 - Churnwood Drive at Minmi Road;
- 113 - Maryland Drive at Minmi Road;
- 114 – Macquarie Street at Minmi Road;
- 117 - Cowper Street at Minmi Road;
- 121 - Walford Street at Thomas Street;
- 125 - Thomas Street at Metcalfe Street;
- 127 - Lake Road at Newcastle Link Road; and
- 130 - Newcastle Road at Douglas Street.
3. **VISSIM BASE MODEL NETWORK DEVELOPMENT**

3.1 **MODEL NETWORK**

The VISSIM model network was developed using VISSIM version 9 software. The network was coded using the layout observed in the latest available aerials, and was validated with the range of collected datasets. The “Links” in the model represent homogeneous sections of the road layout, including parameters such as posted speed, reduced speed areas, conflict points, signals etc., and were used to replicate the existing traffic operation in the model as shown in Figure 3.1.

![Base Model Figure](image.png)

**Figure 3.1: Base Model Figure**
3.2 **ZONING SYSTEM**

Vehicles input into the model were carried out using VISSIM’s dynamic assignment method, using the trips from the OD matrices. These matrices were created from the intersection count volumes, carried out at various intersections along the study corridor as discussed in Section 2.1. The vehicles are inserted into the network via zones created in the VISSIM model. Overall 81 zones were created in the VISSIM model as shown in Figure 3.2 below.

![Figure 3.2: VISSIM Travel Zones](image)

**3.2.1 Posted Speed**

The posted speed in the VISSIM network was derived from site observations, and are as shown below in Figure 3.3 below.

![Figure 3.3: Posted Speed Zones](image)

It must be noted that during the site visit, a work zone of 40km/h was identified between Brookfield Avenue and Highland Way, and was therefore incorporated in the model.
3.3 **PUBLIC TRANSPORT**

Data for public transport services within the study area were obtained from the Transport NSW government website, and this data was utilised within the model. Bus routes were coded into the network as “Static Routes” as the path of these buses are predetermined along the corridor. The frequency of these buses was determined based on their actual arrival time at individual locations.

Bus stops in the model are required to demonstrate the impact on general traffic of buses stopping and starting. Both indented and on-street bus stops are present along the corridor, and have been coded accordingly in the VISSIM model. Figure 3.4 presents a 3D model screenshot of a bus operating in an indented bus stop along Newcastle Road within the study area.

![Figure 3.4: Bus Operating in an Indented Bus Stop on Newcastle Road](image)

Table 3.1 below details the Bus services within the study, and Figure 3.5 displays the routes graphically.

**Table 3.1: Bus Services within Study Area**

<table>
<thead>
<tr>
<th>Route Number</th>
<th>Route Direction</th>
<th>Route Reference in Figure 3.5</th>
<th>Stops</th>
</tr>
</thead>
<tbody>
<tr>
<td>222</td>
<td>Wallsend to Newcastle Via Lambton</td>
<td>cf</td>
<td>231, 222</td>
</tr>
<tr>
<td>231</td>
<td>Newcastle to Wallsend Via Jesmond</td>
<td>cf</td>
<td>231, 222</td>
</tr>
<tr>
<td>230</td>
<td>Newcastle to Wallsend Via North Lambton</td>
<td>cd</td>
<td>226, 267, 222, 235, 230</td>
</tr>
<tr>
<td>235</td>
<td>Newcastle to Wallsend Via Hamilton</td>
<td>cd</td>
<td>226, 267, 261, 235, 230</td>
</tr>
<tr>
<td>267</td>
<td>Wallsend to West Wallsend</td>
<td>he</td>
<td>260, 270, 261, 226, 267</td>
</tr>
<tr>
<td>160</td>
<td>Cessnock to Newcastle via Kurri Kurri, M15 Hunter Expressway, University of Newcastle and Mayfield</td>
<td>ae</td>
<td>260, 270, 261, 267</td>
</tr>
<tr>
<td>260</td>
<td>University of Newcastle to Minmi Via Wallsend Maryland &amp; Fletcher</td>
<td>be</td>
<td>261, 226, 231</td>
</tr>
<tr>
<td>261</td>
<td>University of Newcastle to Minmi Via Wallsend Maryland</td>
<td>be</td>
<td>226, 230, 260, 267</td>
</tr>
<tr>
<td>270</td>
<td>University of Newcastle to Toronto West</td>
<td>he</td>
<td>260, 270, 267</td>
</tr>
<tr>
<td>226</td>
<td>Newcastle to Glendale</td>
<td>be</td>
<td>260, 270, 267</td>
</tr>
<tr>
<td>224</td>
<td>Wallsend to Newcastle Via Kotara</td>
<td>ch</td>
<td>224, 267, 270</td>
</tr>
</tbody>
</table>
3.4 TRAFFIC DEMANDS / MATRICES

Traffic count data was used to develop preliminary traffic demand matrices for the 2017 base models. The demands were developed for weekday AM and PM peak hours from traffic survey data. The base models include the following demand periods.

- **2017 AM Base Model**
  - Warm-up period: 07:30 am to 08:00 am;
  - Peak period: 08:00 am to 09:00 am; and
  - Cool-down period: 09:00 am to 09:30 am.

- **2017 PM Base Model**
  - Warm-up period: 04:00 pm to 04:30 pm;
  - Peak period: 04:30 pm to 05:30 pm; and
  - Cool-down period: 05:30 pm to 05:00 pm.

The 30-minute warm-up and cool-down matrices were created before and after the peak hours for each model, such that a more realistic level of traffic con the network prior to and proceeding from the peak periods can be observed. The use of 30-minute warm-up and cool-down periods is considered appropriate given the network consists of two (2) major road corridors with limited alternative routes.

As per the requirement of the NSW Government Transport Road and Maritime Services (RMS), separate matrices for light and heavy vehicles were created for input into the VISSIM model. Minor adjustments to the initial matrices were required throughout the calibration process so that intersection volumes reflected those surveyed. Stick diagrams of the traffic counts for each intersection in the model are shown in Attachment A.

3.4.1 Demand Profiling

To ensure that the correct number of vehicles are released into the network as per defined time slices, a demand profile was constructed. Temporal traffic profiles were developed for 15-minute periods based on the surveyed traffic data in the entirety of the network. The global traffic profiles across all sites for each peak period model is shown in Attachment B.
The AM and PM peak demand profiles are presented in Table 3.2 and Table 3.3.

### Table 3.2: Weekday AM Peak Traffic Demand Profile

<table>
<thead>
<tr>
<th>Measure</th>
<th>7.30am–7.45am</th>
<th>7.45am – 8.00am</th>
<th>8.00am – 8.15am</th>
<th>8.15am – 8.30am</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand Profile</td>
<td>25%</td>
<td>25%</td>
<td>26%</td>
<td>24%</td>
</tr>
</tbody>
</table>

### Table 3.3: Weekday PM Peak Traffic Demand Profile

<table>
<thead>
<tr>
<th>Measure</th>
<th>4.30pm–4.45pm</th>
<th>4.45pm–5.00pm</th>
<th>5.00pm–5.15pm</th>
<th>5.15pm–5.30pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand Profile</td>
<td>25%</td>
<td>24%</td>
<td>25%</td>
<td>26%</td>
</tr>
</tbody>
</table>

#### 3.4.2 Traffic Composition

Traffic composition used in the model was based on the analysis of traffic mix across the entirety of the network. The traffic composition used in the model is summarised in Table 3.4.

### Table 3.4: AM and PM Traffic Composition

<table>
<thead>
<tr>
<th>Measure</th>
<th>AM Peak</th>
<th>PM Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light</td>
<td>Heavy</td>
</tr>
<tr>
<td>Traffic Composition</td>
<td>96.7%</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

#### 3.4.3 Bus Dwell Time

A normal distribution has been assumed in VISSIM using the program setting for bus dwell time. A value of 20 seconds has been applied for each bus stop in each route.

#### 3.4.4 VisVAP Signalling

The signal groups within the model are partially actuated and controlled by VisVAP program, incorporating the signal behaviours reflected in the IDMs. The signal behaviour varies in an-hour blocks, depending on the average, observed phase timing from the IDMs.

SCATS’s .LX files were interrogated to calculate intersection offsets:

- Progression Plan (PP) and Link Plan (LP) 4 were adopted for the AM peak model; and
- Progression Plan (PP) and Link Plan (LP) 2 were adopted for the PM peak model.
4. BASE MODEL CALIBRATION AND VALIDATION

4.1 TURN COUNTS VALIDATION

The GEH statistic was used to measure how well the modelled flows matched the counts, taking into consideration the order of magnitude of the modelled flows and observed counts. The strength of the GEH calculation, as defined within the UK Design Manual for Roads and Bridges, is to compare both absolute and relative differences in flow volumes between data sets. This is an industry accepted approach to measure the quality of the model in Australia and many other countries.

To judge if the output matrices have been corrected in accordance to the RMS Modelling Guidelines is that GEH values of at least 85% of all links or turn modelled flows are less than or equal to 5.0. In addition, no GEH value is to be over 10.0 and minimum R² value of 0.9 for turning volumes is also required.

The VISSIM model was calibrated and validated to the GEH statistic and the Travel Time validation was targeted at ±15% for the modelled vs. observed travel time (as per RMS Modelling Guidelines).

4.2 GEH STATISTIC

The modelled traffic volumes were compared to the observed volumes using the GEH statistic, defined below:

\[
GEH = \sqrt{\frac{2(M - C)^2}{M + C}}
\]

Where, “M” is the modelled traffic volume and “C” is the observed traffic volume.

The GEH statistic decreases as the modelled volume approaches the observed volume. As an absolute value it ignores whether the modelled value is above or below the observed. This allows easy inspection and prioritisation of different variances relative to the size of the flow.

The results of this calibration process using the GEH statistic is summarised in Table 4.1 and detailed for each peak hour in Attachment C.

Table 4.1: Summary of Turn Count Calibration GEH Statistics

<table>
<thead>
<tr>
<th>GEH Criteria</th>
<th>AM (8:00 to 9:00)</th>
<th>PM (16:30 to 17:30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5.0</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>&lt;10.0</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>&lt;15.00</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

As can be seen in the Table above, both peak hour models show that 100% of the turn counts have a GEH statistic below 5.0. Therefore, it is concluded that the models have turn count volumes that are within the GEH requirement and the models are considered appropriate.

Plots are included in Figure 4.1 and Figure 4.2 overleaf which include GEH = 5 tolerance limits, R² value which are > 0.9 and the linear equation of slope.
Figure 4.1: Validation Volume Plot – AM Peak Period (0800-0900)

Figure 4.2: Validation Volume Plot – PM Peak Period (1630-1730)
4.3 MODEL STABILITY

4.3.1 Stability Testing

Model stability between runs/seed values is particularly important in microsimulation models and is demonstrated using a variety of network performance measures. The following network performance measures have been adopted to demonstrate model stability:

- Cumulative travel time across all vehicles (vehicle-hour travelled); and
- Total number of vehicles in the model.

Model outputs for each of the two measures are presented at 15-minute interval in Figure 4.3 through to Error! Reference source not found. Figure 4.6 across the following five seeds modelled:

- Run 1: Seed 5;
- Run 2: Seed 10;
- Run 3: Seed 15;
- Run 4: Seed 20; and
- Run 5: Seed 25.

![Figure 4.3: Weekday AM Peak Cumulative Travel Time](image-url)
Figure 4.4: Weekday PM Peak Cumulative Travel Time

Figure 4.5: Weekday AM Peak Total Number of Vehicles in the Model
Figure 4.6: Weekday PM Peak Total Number of Vehicles in the Model

As evidenced by the above figures, the model behaviour across these two measures is quite consistent between seed runs. The models are therefore considered to be stable.

4.3.2 Median Seed

The median seed for each peak period has been identified by assessing the vehicle hours travelled (VHT) for each of the simulated runs. The weekday AM and PM peak median seeds are:

- Weekday AM Peak: Seed 5; and
- Weekday PM Peak: Seed 5.

All calibration and validation outputs reported are drawn from the median seed run.

4.4 Travel Time Validation

Surveyed travel time data, described in Section 2.2, was used in the comparison of the modelled and surveyed travel times for the routes. This comparison is shown overleaf in Figure 4.7 to Figure 4.10, and contains an average of the surveyed and modelled travel times during both the AM and PM peak periods and its direction (i.e. clockwise and counter-clockwise). The results of this calibration process using the for the outlined sections and direction for each peak hour are provided in Attachment D.
Figure 4.7: AM Travel Time Validation (0800-0900) - Clockwise

Figure 4.8: AM Travel Time Validation (0800-0900) – Counter - Clockwise
Western Corridor VISSIM Model Calibration and Validation

Figure 4.9:  PM Travel Time Validation (1630-1730) – Clockwise

Figure 4.10:  PM Travel Time Validation (1630-1730) – Counter - Clockwise
4.5 SIGNAL TIMING VALIDATION

4.5.1 Data Comparisons

SCATS data, obtained from Roads and Maritime Services, have been compared with modelled signal times. As per the RMS Modelling Guidelines, the following signal attributes were used in the comparison:

- **Cycle Time:** average modelled cycle time in one-hour period to be within 10 percent of observed average;
- **Green Time:** total of green time over each one-hour period to be within 10 percent of observed equivalent for each phase; and
- **Call Frequency:** call frequency if demand-dependent phases (including pedestrian phase calls) to be compared with observed data to ensure phase activation occurs to a similar level over each hour period.

A detailed comparison of modelled and observed Cycle Time, Phase Time and Offset for each intersection across the AM and PM Peak is presented in Attachment E.

4.5.2 Cycle / Phase Times Outside 10% of SCATS

Generally, the average cycle and phase times are within 10% of SCATS average phase times. There are some exceptions, which are clearly identified Table 4.2 and Table 4.3. The exceptions are mainly either minor or resulting due to differences in cycle time.

**AM Peak**

Table 4.2: Cycle / Phase Times Outside of 10% of SCATS – AM Peak

<table>
<thead>
<tr>
<th>Intersection (TCS)</th>
<th>Cycle / Phase</th>
<th>AM (08:00 – 09:00)</th>
<th>IDM</th>
<th>VISSIM</th>
<th>Within 10%?</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Average</td>
<td>+10%</td>
<td>-10%</td>
<td></td>
</tr>
<tr>
<td>Thomas Street / Metcalfe Street</td>
<td>D</td>
<td>31</td>
<td>34</td>
<td>28</td>
<td>39</td>
</tr>
<tr>
<td>Thomas Street / Walford Street</td>
<td>A</td>
<td>73</td>
<td>89</td>
<td>66</td>
<td>55</td>
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<tr>
<td></td>
<td>C</td>
<td>30</td>
<td>33</td>
<td>27</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>CT</td>
<td>134</td>
<td>147</td>
<td>121</td>
<td>120</td>
</tr>
<tr>
<td>Minmi Road / Cameron Street / Longworth Avenue / Cowper Street</td>
<td>A</td>
<td>47</td>
<td>52</td>
<td>42</td>
<td>27</td>
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<tr>
<td></td>
<td>D</td>
<td>16</td>
<td>18</td>
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<td>24</td>
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<tr>
<td></td>
<td>E</td>
<td>41</td>
<td>45</td>
<td>37</td>
<td>16</td>
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<td>F</td>
<td>28</td>
<td>31</td>
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<td>37</td>
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<tr>
<td></td>
<td>G</td>
<td>19</td>
<td>21</td>
<td>17</td>
<td>16</td>
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<td>71</td>
<td>78</td>
<td>64</td>
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<td></td>
<td>G</td>
<td>15</td>
<td>17</td>
<td>14</td>
<td>23</td>
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<tr>
<td>Minmi Road / Maryland Drive / Churnwood Drive</td>
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<td>88</td>
<td>97</td>
<td>79</td>
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<td>C</td>
<td>19</td>
<td>21</td>
<td>17</td>
<td>22</td>
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<tr>
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<td>40</td>
<td>32</td>
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</tr>
<tr>
<td></td>
<td>E</td>
<td>13</td>
<td>14</td>
<td>12</td>
<td>25</td>
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<td>Newcastle Link Road / Lake Road / Thomas Street</td>
<td>A</td>
<td>34</td>
<td>37</td>
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### PM Peak

#### Table 4.3: Cycle / Phase Times Outside of 10% of SCATS – PM Peak

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<tr>
<th>Intersection (TCS)</th>
<th>Cycle / Phase</th>
<th>PM (16:30 – 17:30)</th>
<th>IDM</th>
<th>VISSIM</th>
<th>Within 10%?</th>
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<tbody>
<tr>
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<td></td>
<td>Average</td>
<td>+10%</td>
<td>-10%</td>
<td></td>
</tr>
<tr>
<td>Minmi Road / Cameron Street / Longworth Avenue / Cowper Street</td>
<td>CT</td>
<td>160</td>
<td>176</td>
<td>144</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>50</td>
<td>55</td>
<td>45</td>
<td>19</td>
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<td>E</td>
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<td>29</td>
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<td>C</td>
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<td>18</td>
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<td>D</td>
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<td>169</td>
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<td>A</td>
<td>37</td>
<td>41</td>
<td>33</td>
<td>28</td>
</tr>
</tbody>
</table>

#### 4.5.3 Call Frequency

SCATS data was interrogated to find out which phases are called in most of the cycles. In order to simplify the VisVAP signal logic in VISSIM, it has been programmed in such a way that these phases called in every cycle in VISSIM.

Phases which are not called in most of the cycles, are programmed as demand dependent.
5. **EXISTING TRAFFIC PERFORMANCE**

The AM and PM peak models were run in VISSIM and there were several identified sections on the corridor that experienced queues, as detailed below.

5.1 **AM PEAK**

Figure 5.1 to Figure 5.8 below illustrate the eight (8) identified sections (as listed below) in the AM peak that experienced queueing of vehicles.

- Minmi Road towards Bunnings Access - eastbound;
- Newcastle Link Road towards Minmi Road roundabout – eastbound;
- Newcastle Link Road near Lake Road - eastbound;
- Thomas Street towards Metcalfe Street – eastbound;
- Newcastle Road / Thomas Street / Longworth Avenue roundabout – northbound;
- Minmi Road towards Cowper Street / Cameron Street – southbound;
- Minmi Road towards Macquarie Street – eastbound; and
- Newcastle Link Road / Woodford Street / Cameron Park Drive Intersection – northbound & southbound.

5.1.1 **Minmi Road towards Bunnings Access – Eastbound**

![Diagram of Minmi Road towards Bunnings Access - Eastbound Queue Length](image)

**Figure 5.1:** Minmi Road towards Bunnings Site Access - Eastbound Queue Length
5.1.2 Newcastle Link Road towards Minmi Road Roundabout – Eastbound

![Diagram of Newcastle Link Road towards Minmi Road Roundabout – Eastbound Queue Length]

Figure 5.2: Newcastle Link Road towards Minmi Road Roundabout – Eastbound Queue Length

5.1.3 Newcastle Link Road near Lake Road – Eastbound

![Diagram of Newcastle Link Road near Lake Road – Eastbound Queue Length]

Figure 5.3: Newcastle Link Road near Lake Road – Eastbound Queue Length
5.1.4 Thomas Street towards Metcalfe Street – Eastbound

Figure 5.4: Thomas Street towards Metcalfe Street – Eastbound Queue Length

5.1.5 Newcastle Road / Thomas Street / Longworth Avenue Roundabout – Northbound

Figure 5.5: Newcastle Road / Thomas Street / Longworth Avenue Roundabout – Northbound Queue Length
5.1.6 Minmi Road towards Cowper Street / Cameron Street – Southbound

![Diagram of Minmi Road towards Cowper Street / Cameron Street – Southbound]

Figure 5.6: Minmi Road towards Cowper Street / Cameron Street – Southbound Queue Length

5.1.7 Minmi Road towards Creek Road – Eastbound

![Diagram of Minmi Road towards Creek Road – Eastbound]

Figure 5.7: Minmi Road towards Creek Road – Eastbound Queue Length
5.1.8 Newcastle Link Road / Woodford Street / Cameron Park Drive Intersection – Northbound & Southbound

Figure 5.8: Newcastle Link Road / Woodford Street / Cameron Park Drive Intersection – Northbound & Southbound Queue Length

5.2 PM PEAK

Figure 5.9 to Figure 5.8 Figure 5.13 below illustrate the five (5) identified sections (as listed below) in the PM peak that experienced queues.

- Newcastle Link Road towards Minmi Road roundabout – eastbound & westbound;
- Lake Road near Newcastle Link Road – northbound, southbound & westbound;
- Thomas Street / Metcalfe Street intersection – southbound and westbound;
- Longworth Avenue towards Cowper Street / Cameron Street – northbound; and
- Newcastle Link Road / Woodford Street / Cameron Park Drive – northbound & southbound.

5.2.1 Newcastle Link Road towards Minmi Road Roundabout – Eastbound & Westbound

Figure 5.9: Newcastle Link Road towards Minmi Road Roundabout – Eastbound & Westbound Queue Length
5.2.2 Lake Road near Newcastle Link Road – Northbound, Southbound & Westbound

5.2.3 Thomas Street / Metcalfe Street intersection – Southbound and Westbound
5.2.4 Longworth Avenue towards Cowper Street / Cameron Street – Northbound

Figure 5.12: Longworth Avenue towards Cowper Street / Cameron Street – Northbound Queue Length

5.2.5 Newcastle Link Road / Woodford Street / Cameron Park Drive – Northbound & Southbound

Figure 5.13: Newcastle Link Road / Woodford Street / Cameron Park Drive – Northbound & Southbound Queue Length

6. CONCLUDING STATEMENT

In summary, the VISSIM models are deemed suitably calibrated and validated.

The models are considered fit for purpose of testing the benefits and impacts of the proposed upgrades in future year scenarios.
Western Corridor Traffic and Transport Study
Traffic Survey Data Analysis
PM Peak (1630-1730)

Section 1 of 2: Newcastle Link Road, Woodford Street and Minmi Road

Legend
- Approaching Total
- Exiting Total

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<td>Brookfield Boulevard</td>
<td>Brookfield Boulevard</td>
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</tr>
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<td>Creek Road</td>
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Towards Section 2
ATTACHMENT B

PEAK DEMAND PROFILES
### AM Period

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<tr>
<th>Period Start</th>
<th>Period End</th>
<th>Cars Total</th>
<th>Trucks Total</th>
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<td>Hourly</td>
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<td>15,937</td>
<td>25% 521</td>
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<td>16,004</td>
<td>25% 552</td>
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<td>12,742</td>
<td>20% 663</td>
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<td>11,794</td>
<td>20% 596</td>
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### PM Period

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<th>Period End</th>
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<td>18:00</td>
<td>5,718</td>
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**Cars**
- AM Warmup: 23% 605, 25% 521, 25% 596, 25% 552, 24% 542
- AM Peak Hour: 27% 613, 26% 639, 25% 650
- AM Cool Down: 30% 663

**Trucks**
- AM Warmup: 27% 492
- AM Peak Hour: 27% 542
- AM Cool Down: 25% 492
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ATTACHMENT C

CALIBRATION SUMMARY
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<th>Movement</th>
<th>From</th>
<th>To</th>
<th>Turn</th>
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<th>Modeled</th>
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<th>% Diff</th>
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<th>Queue (m)</th>
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**Observed Data:**
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
- Sunnyville Road: Average delay 44 seconds, observed values 44 seconds, delay 0%
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<th>To</th>
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<th>Missed</th>
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<th>% Dist.</th>
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<th>False Neg</th>
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Note: The table includes information about traffic intersections, movements, observed and missed data, and recall rates for latency and earthquake detection.
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<th>Diff</th>
<th>% Diff</th>
<th>Diff</th>
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<th>Accept</th>
<th>Delay (s)</th>
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All times in seconds.
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<td>1.8</td>
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<tr>
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<td>-12</td>
<td>-13.2</td>
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**Additional information:***
- The data includes a variety of movement codes such as Observed, Modelled, Abs. Diff, % Diff, % Diff (Mod. - Obs.), GEH, Accept, Delay, Loss, and Queue.
- The specific intersections include Minmi Road, Brookfield Avenue, Woodford Street, and others.
- The data is presented in a tabular format, detailing the observed and modelled values for different movements with various percentages and differences.
Time

ID

Intersection

111

Minmi Road
Summerhill Road

112

McNaughton Avenue
Minmi Road

113

Maryland Drive
Minmi Road

114

Creek Road
Minmi Road
Macquarie Street

115

Minmi Road
Bunnings

116

Sandgate Road
Minmi road

117

Cameron Street
Longworth Avenue
Cowper Street
Minmi Road

118

Sandgate Road
Tillie Street

119

Tillie Street
Wilkinson Avenue

Aimsun Movement
From
Code
Code
111-5 Minmi Road (E)
111-6
111-7 Summerhill Road (S)
111-9
111-10 Minmi Road (W)
111-11
All
112-1 McNaughton Avenue (N)
112-2
112-3
112-4 Minmi Road (E)
112-5
112-6
112-7 McNaughton Avenue (S)
112-8
112-9
112-10 Minmi Road (W)
112-11
112-12
All
113-1 Maryland Drive (N)
113-3
113-4 Minmi Road (E)
113-5
113-11 Minmi Road (W)
113-12
All
114-1 Creek Road (N)
114-2
114-3
114-4 Minmi Road (E)
114-5
114-6
114-7 Macquarie Street (S)
114-8
114-9
114-10 Minmi Road (W)
114-11
114-12
All
115-5 Minmi Road (E)
115-6
115-7 Bunnings (S)
115-9
115-10 Minmi Road (W)
115-11
All
116-3 Sandgate Road (N)
116-5 Minmi Road (E)
116-6
116-9 Sandgate Road (S)
116-11 Minmi Road (W)
116-12
All
117-1 Cameron Street (N)
117-2
117-3
117-4 Longworth Avenue (E)
117-5
117-6
117-7 Cowper Street (S)
117-8
117-9
117-10 Minmi Road (W)
117-11
117-12
All
118-5 Sandgate Road (E)
118-6
118-7 Tillie Street (S)
118-9
118-10 Sandgate Road (W)
118-11
All
119-2 Tillie Street (N)
119-3
119-4 Wilkinson Avenue (E)
119-6
119-7 Tillie Street (S)
119-8
All

To

Turn

Minmi Road (W)
Summerhill Road (S)
Minmi Road (E)
Minmi Road (W)
Summerhill Road (S)
Minmi Road (E)

T
L
R
L
R
T

Minmi Road (W)
McNaughton Avenue (S)
Minmi Road (E)
McNaughton Avenue (N)
Minmi Road (W)
McNaughton Avenue (S)
Minmi Road (E)
McNaughton Avenue (N)
Minmi Road (W)
McNaughton Avenue (S)
Minmi Road (E)
McNaughton Avenue (N)

R
T
L
R
T
L
R
T
L
R
T
L

Minmi Road (W)
Minmi Road (E)
Maryland Drive (N)
Minmi Road (W)
Minmi Road (E)
Maryland Drive (N)

R
L
R
T
T
L

Minmi Road (W)
Macquarie Street (S)
Minmi Road (E)
Creek Road (N)
Minmi Road (W)
Macquarie Street (S)
Minmi Road (E)
Creek Road (N)
Minmi Road (W)
Macquarie Street (S)
Minmi Road (E)
Creek Road (N)

R
T
L
R
T
L
R
T
L
R
T
L

Minmi Road (W)
Bunnings (S)
Minmi Road (E)
Minmi Road (W)
Bunnings (S)
Minmi Road (E)

T
L
R
L
R
T

Minmi Road (E)
Minmi Road (W)
Sandgate Road (S)
Minmi Road (W)
Minmi Road (E)
Sandgate Road (N)

L
T
L
L
T
L

Minmi Road (W)
Cowper Street (S)
Longworth Avenue (E)
Cameron Street (N)
Minmi Road (W)
Cowper Street (S)
Longworth Avenue (E)
Cameron Street (N)
Minmi Road (W)
Cowper Street (S)
Longworth Avenue (E)
Cameron Street (N)

R
T
L
R
T
L
R
T
L
R
T
L

Sandgate Road (W)
Tillie Street (S)
Sandgate Road (E)
Sandgate Road (W)
Tillie Street (S)
Sandgate Road (E)

T
L
R
L
R
T

Tillie Street (S)
Wilkinson Avenue (E)
Tillie Street (N)
Tillie Street (S)
Wilkinson Avenue (E)
Tillie Street (N)

T
L
R
L
R
T

Abs. Diff

% Diff

GEH

Accept

Delay (s)

LoS

41
1
4
0
-4
14

4.4%
3.7%
12.5%
0.0%
-26.7%
2.7%

1.3
0.2
0.7
0.0
1.1
0.6

Y
Y
Y
Y
Y
Y

2
-1
3
-48
20
23
3
0
-4
-1
38
-4

66.7%
-100.0%
3.1%
-40.7%
1.9%
191.7%
300.0%
#DIV/0!
-100.0%
-100.0%
6.5%
-16.7%

1.0
1.4
0.3
5.0
0.6
4.7
1.9
0.0
2.8
1.4
1.5
0.9

Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y

2
23
-6
-31
-6
4

8.0%
7.6%
-1.2%
-2.7%
-0.9%
18.2%

0.4
1.3
0.3
0.9
0.2
0.8

Y
Y
Y
Y
Y
Y

2
3
-9
2
-9
3
-7
-1
-9
-14
83
8

4.5%
13.0%
-14.5%
11.8%
-0.8%
6.3%
-15.2%
-20.0%
-2.3%
-6.6%
13.7%
27.6%

0.3
0.6
1.2
0.5
0.3
0.4
1.1
0.5
0.5
1.0
3.3
1.4

Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y

-20
3
-12
-3
-4
24

-1.8%
2.8%
-11.8%
-4.3%
-10.3%
3.4%

0.6
0.3
1.2
0.4
0.7
0.9

Y
Y
Y
Y
Y
Y

-6
24
-1
-10
-95
60

-50.0%
2.1%
-4.3%
-16.9%
-22.0%
18.1%

2.0
0.7
0.2
1.4
4.9
3.2

Y
Y
Y
Y
Y
Y

45
-40
29
28
-42
20
0
-39
28
35
-31
-7

7.1%
-7.7%
36.7%
48.3%
-9.1%
250.0%
0.0%
-10.8%
35.0%
58.3%
-8.6%
-38.9%

1.8
1.8
3.0
3.3
2.0
4.7
0.0
2.1
2.9
4.0
1.7
1.8

Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y

-7
-44
30
-8
-3
45

-77.8%
-3.9%
11.5%
-61.5%
-1.7%
25.7%

3.0
1.3
1.8
2.7
0.2
3.2

Y
Y
Y
Y
Y
Y

-78
12
3
42
14
18

-6.7%
7.5%
37.5%
11.8%
8.2%
6.7%

2.3
0.9
1.0
2.2
1.1
1.1

Y
Y
Y
Y
Y
Y

3.4
1.5
11.7
4.6
3.2
3.2
3.5
23.9
0.0
3.9
6.7
1.4
1.2
26.1
0.0
0.0
0.0
0.3
0.6
1.4
35.4
4.4
38.2
14.0
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32.0
39.5
17.8
22.0
27.2
13.5
3.1
26.3
22.8
4.3
6.7
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24.2
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94.9
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43.6
90.5
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57.4
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38.7
11.4
1.2
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34.3
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5.6
2.5
0.3
57.0
50.7
23.4
0.9
13.2

A
A
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B
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A
A
A
C
A
C
A
A
A
B
D
C
C
E
B
B
D
D
C
C
B
B
B
A
A
B
B
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A
A
B
A
A
A
B
A
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D
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B
F
C
D
F
D
B
E
B
A
C
A
A
A
A
C
A
A
A
A
E
D
B
A
A

Observed Modelled (Mod - Obs) (Mod - Obs)
934
27
32
28
15
527
1,563
3
1
96
118
1,044
12
1
0
4
1
584
24
1,888
25
303
504
1,133
653
22
2,640
44
23
62
17
1,113
48
46
5
394
212
606
29
2,599
1,141
108
102
70
39
711
2,171
12
1,159
23
59
431
332
2016
632
519
79
58
462
8
1
361
80
60
361
18
2,639
9
1,128
262
13
181
175
1,768
1,168
160
8
356
170
269
2,131

975
28
36
28
11
541
1,619
5
0
99
70
1,064
35
4
0
0
0
622
20
1,919
27
326
498
1,102
647
26
2,626
46
26
53
19
1,104
51
39
4
385
198
689
37
2,651
1,121
111
90
67
35
735
2,159
6
1,183
22
49
336
392
2,081
677
479
108
86
420
28
1
322
108
95
330
11
2,665
2
1,084
292
5
178
220
1,781
1,090
172
11
398
184
287
2,142

Queue
(m)
0.3
0.2
0.7
0.5
0.8
0.8
0.4
0.3
0.2
0.4
1.4
0.7
0.7
0.1
0.1
0.0
0.0
0.0
0.0
0.3
1.4
0.5
20.0
16.6
6.2
0.4
7.5
5.8
5.7
5.6
30.8
30.9
30.5
20.7
20.7
20.7
19.8
18.8
14.8
18.7
20.0
20.3
3.9
3.9
3.6
3.6
12.0
0.3
0.0
0.0
0.0
0.1
0.1
0.1
35.4
22.6
1.8
22.7
30.9
30.9
41.6
41.2
3.1
10.8
22.2
21.8
23.1
0.1
0.1
0.0
0.0
13.4
13.4
4.5
0.0
0.0
43.2
43.0
7.0
0.0
15.5


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<th>Movement Code</th>
<th>From</th>
<th>To</th>
<th>Turn</th>
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<th>Modelled</th>
<th>Diff (Mod - Obs)</th>
<th>% Diff (Mod - Obs)</th>
<th>GEH</th>
<th>Accept</th>
<th>Delay (s)</th>
<th>LoS</th>
<th>Queue (m)</th>
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<td>129-1</td>
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<td>Modelled</td>
<td>Diff (Mod - Obs)</td>
<td>% Diff (Mod - Obs)</td>
<td>GEH</td>
<td>Accept</td>
<td>Delay (s)</td>
<td>LoS</td>
<td>Queue (m)</td>
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<td>129-3</td>
<td>Aimsun Code</td>
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<td>To</td>
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<td>Modelled</td>
<td>Diff (Mod - Obs)</td>
<td>% Diff (Mod - Obs)</td>
<td>GEH</td>
<td>Accept</td>
<td>Delay (s)</td>
<td>LoS</td>
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<td>To</td>
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<td>Modelled</td>
<td>Diff (Mod - Obs)</td>
<td>% Diff (Mod - Obs)</td>
<td>GEH</td>
<td>Accept</td>
<td>Delay (s)</td>
<td>LoS</td>
<td>Queue (m)</td>
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<td>129-5</td>
<td>Aimsun Code</td>
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<td>To</td>
<td>Turn</td>
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<td>Modelled</td>
<td>Diff (Mod - Obs)</td>
<td>% Diff (Mod - Obs)</td>
<td>GEH</td>
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<td>Delay (s)</td>
<td>LoS</td>
<td>Queue (m)</td>
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ATTACHMENT D

VALIDATION SUMMARY
### Western Corridor Traffic and Transport Study

#### Travel Time Data Analysis

**AM Peak (0800 - 0900)**

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## Western Corridor Traffic and Transport Study

### Travel Time Data Analysis

**PM Peak (1630 - 1730)**

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### Travel Time Data Analysis

**PM Peak (16:30 - 17:30)**

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ATTACHMENT E

TRAFFIC SIGNAL TIME VALIDATION
## Western Corridor
### Signal Time Comparison
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Note: CT* - Cycle time
## Western Corridor
### Signal Time Comparison
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Note: CT* - Cycle time
APPENDIX B

2021 UPGRADE CONCEPTS
CONCEPT DESIGN

LEGEND:

Proposed Updates to Network

Scale @ A3

1:500

CONCEPT ONLY

Drawn: 13.08.2019

Sheet Number: 1

Issued: 1

Project Number: P2989

REVISIONS

Drawn

Revisions/Descriptions

Date

Issue

Project

Title

A.A

P2989-Western Corridor Traffic and Transport Study

Cowper Street / Newcastle Road Intersection - Year 2021

Gold Coast

Suite 26, 58 Riverwalk Avenue, Robina QLD 4226.

P: (07) 5562-5377

W: www.bitziosconsulting.com.au

Brisbane

Level 2, 428 Upper Edward Street, Spring Hill 4000.

P: (07) 3831-4442

E: admin@bitziosconsulting.com.au

Sydney

Studio 203, 3 Gladstone Street, Newtown NSW 2042.

P: (02) 9557 6202
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<td>13.08.2019</td>
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</table>

**Legend:**
- **Proposed Updates to Network**

**Scale:** 1:500

**Design:**
- Gold Coast:
  - Suite 26, 58 Riverwalk Avenue, Robina QLD 4226.
  - P: (07) 5562-5377
  - W: www.bitziosconsulting.com.au
- Brisbane:
  - Suite 201, 3 Gladstone Street, Newtown NSW 2042.
  - P: (02) 9557 6202
- Sydney:
  - Suite 26, 58 Riverwalk Avenue, Robina QLD 4226.
  - P: (07) 5562-5377
  - W: www.bitziosconsulting.com.au
- Gold Coast:
  - Suite 26, 58 Riverwalk Avenue, Robina QLD 4226.
  - P: (07) 5562-5377
  - W: www.bitziosconsulting.com.au
  - E: admin@bitziosconsulting.com.au
# Project Information

**Title:** Minmi Road / Woodford Street Intersection  
**Year:** 2021  
**Project Number:** P2989  
**Issue:** 1  
**Date:** 13.08.2019  

## Concept Design

**Scale:** 1:500  
**Date:** 13.08.2019

### REVIEWS

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### LEGEND:

- Proposed Updates to Network

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**Scale @ A3**

---

**Gold Coast**  
Suite 26, 58 Riverwalk Avenue, Robina QLD 4226.  
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**Brisbane**  
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**Sydney**  
Suite 203, 3 Gladstone Street, Newtown NSW 2042.  
P: (02) 9557 6202  

---

**CONCEPT ONLY**
APPENDIX C

2026 UPGRADE CONCEPTS
CONCEPT DESIGN

LEGEND:

Proposed Updates to Network

Scale @ A3  0  5  10  15  20  25  1:500

Project: P2989-Western Corridor Traffic and Transport Study

File: Cowper Street / Nelson Street Intersection - Year 2026

Sheet Number: 1  Issue: 001  Date: 15.05.2018

Picture Credit: Bitzios Consulting

Check: A.A

CONCEPT ONLY
## Design

**Date:** 05.05.2018

**Sheet Number:** 1

**Project Number:** P2989

### Project Title

**Project Title:** P2989-Western Corridor Traffic and Transport Study

**Title:** Minmi Road / Bunnings Intersection - Year 2026

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**Scale:** 1:500

**Sheet:** CONCEPT ONLY

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**Legend:**

- Proposed Updates to Network

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**NOTES:**

- This page contains a conceptual design for the Minmi Road / Bunnings intersection, focusing on traffic and transport planning. The design includes proposed updates to the network for the year 2026. Additional details and contact information are provided for the project, including offices in Gold Coast, Brisbane, and Sydney, along with their respective contact details.
CONCEPT ONLY

Scale @ A3

1:500

LEGEND:

Proposed Updates to Network

Scale @ A3

CONCEPT DESIGN

Project:

P2989-Western Corridor Traffic and Transport Study

Title:

Minmi Road / Maryland Drive Intersection - Year 2026

Gold Coast
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Brisbane
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Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042.
P: (02) 9557 6202

A.A
07.05.2018
001

CONCEPT ONLY

Date: 15.05.2018

Sheet Number: 1

Issue: 001
APPENDIX D

2036 UPGRADE CONCEPTS
CONCEPT DESIGN

LEGEND:

Proposed Updates to Network

Scale @ A3

Scale: 1:500

Project: P2989-Western Corridor Traffic and Transport Study

Cowper Street / Cameron Street Intersection - Year 2036

Gold Coast
Suite 26, 58 Riverwalk Avenue, Robina QLD 4226.
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Brisbane
Level 2, 428 Upper Edward Street, Spring Hill 4000.
P: (07) 3831-4442
E: admin@bitziosconsulting.com.au

Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042.
P: (02) 9557 6202

Date: 07.05.2018
Issue: 001

CONCEPT ONLY
Gold Coast
Suite 26, 58 Riverwalk Avenue, Robina QLD 4226.
P: (07) 5562-5377
W: www.bitziosconsulting.com.au

Brisbane
Level 2, 428 Upper Edward Street, Spring Hill 4000.
P: (07) 3831-4442
E: admin@bitziosconsulting.com.au

Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042
P: (02) 9557 6202

Project Title
Minmi Road / Britannia Boulevard Intersection - Year 2036

CONCEPT DESIGN

LEGEND:
Proposed Updates to Network

Scale @ A3

1:500
Proposed Updates to Network

LEGEND:

CONCEPT ONLY
ORDINARY COUNCIL MEETING
22 OCTOBER 2019

CCL 10/12/19
EXHIBITION OF DRAFT WESTERN CORRIDOR CONTRIBUTIONS PLAN

Item 98 Attachment C: Relevant Ministerial - Direction Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012 as amended
Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012

under the
Environmental Planning and Assessment Act 1979

I, the Minister for Planning and Infrastructure, in pursuance of section 94E of the Environmental Planning and Assessment Act 1979, give the following Direction.

Minister for Planning and Infrastructure

Dated:

1 Name of Direction

This Direction is the Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012.

2 When Direction takes effect

This Direction takes effect on 28 August 2012.

3 Consent authorities to whom Direction is given

(1) This Direction is given to:

(a) local councils, and
(b) Sydney district planning panels and regional planning panels.

In this Direction, a reference to a consent authority is a reference to a local council or planning panel to whom the Direction is given.

(2) To avoid doubt, this Direction also applies to:

(a) any local planning panel when exercising, on behalf of a council, the functions of the council as a consent authority, and
(b) any other officer or employee of such a council to whom the council delegates its functions as a consent authority.

4 No cap on contributions for development on Schedule 1 land

This Direction does not apply to a development consent to the extent that it authorises the carrying out of development on any land identified in Schedule 1, but applies to the carrying out of development on all other land within the State.

5 Definitions

(1) In this Direction:
(a) **2017 Amendment Direction** means the *Environmental Planning and Assessment (Local Infrastructure Contributions) Amendment Direction 2017*, and

(b) **condition** means a condition under section 94 (1) or (3) of the *Environmental Planning and Assessment Act 1979*, and

(c) **dwelling** means a room or suite of rooms occupied or used or so constructed or adapted as to be capable of being occupied or used as a separate domicile, and

(d) **IPART** means the Independent Pricing and Regulatory Tribunal established by the *Independent Pricing and Regulatory Tribunal Act 1992*, and

(e) **residential lot** means a lot created by the subdivision of land for the purpose of a dwelling, not being a lot that, in the opinion of the consent authority, is to be further subdivided for the purpose of creating lots for the purpose of dwellings.

**Note.** See section 4B of the *Environmental Planning and Assessment Act 1979* for the meaning of “subdivision of land”.

(2) A reference in this Direction to a development consent that authorises a dwelling is a reference to a development consent that authorises the erection of the dwelling or the use of a building or part of a building as a dwelling.

**Note.** See section 4 (2) of the *Environmental Planning and Assessment Act 1979* for interpretation of the phrase “erection of a dwelling”.

(3) A reference in this Direction to an IPART reviewed contributions plan is a reference to a contributions plan that satisfies all of the following:

(a) IPART has reviewed the contributions plan (or a draft of the plan) in accordance with assessment criteria set out in any applicable practice note, including whether the facilities to which the contributions plan relates are on any essential works list set out in the practice note,

(b) IPART has published a report of its review on its website and forwarded it to the Minister for Planning,

(c) following the forwarding of the report to the Minister, the Minister (or a nominee of the Minister) has advised the relevant council as to any amendments required to the contributions plan,

(d) the Minister’s (or nominee’s) advice to the council has been published on the website of the Department of Planning and Environment,

(e) the relevant council has approved the plan, and has made any amendments to the plan, in accordance with the written advice of the Minister or the Minister’s nominee.

An applicable practice note, referred to in paragraph (a), is the *Revised Local Development Contributions Practice Note: For the assessment of Local Contributions Plans by IPART*, issued by the Department of Planning and Environment, February 2014, as amended or replaced from time to time.

(4) Notes in this Direction do not form part of this Direction.
6 Maximum amount of monetary contributions under s 94

(1) This clause applies to a development consent to the extent that it authorises one or more dwellings or the subdivision of land into residential lots.

(2) A consent authority must not grant development consent (other than for development on land identified in Schedule 2) subject to a condition requiring the payment of a monetary contribution that:

(a) in the case of a development consent that authorises one or more dwellings, exceeds $20 000 for each dwelling authorised by the consent, or

(b) in the case of a development consent that authorises subdivision into residential lots, exceeds $20 000 for each residential lot authorised to be created by the development consent.

(3) A consent authority must not grant development consent for development on any land identified in Schedule 2 subject to a condition requiring the payment of a monetary contribution that:

(a) in the case of a development consent that authorises one or more dwellings, exceeds $30 000 for each dwelling authorised by the consent, or

(b) in the case of a development consent that authorises subdivision into residential lots, exceeds $30 000 for each residential lot authorised to be created by the development consent.

(4) A consent authority may, in a particular case, require, as a condition on the grant of development consent, the payment of a monetary contribution that exceeds the maximum amount of the contribution calculated in accordance with subclause (2) or (3), but only with both the written agreement of the applicant for the consent and the written approval of the Minister, given before the condition is imposed.

(5) This clause does not apply to the imposition (after the 2017 Amendment Direction takes effect) of a condition in accordance with an IPART reviewed contributions plan.

6A Raising cap on contributions in specified precincts after 2017 amendment direction

(1) This clause applies (instead of clause 6) to a development consent to the extent that the consent relates to land to which any of the specified contributions plans apply when the 2017 amendment direction takes effect and authorises one or more dwellings on the land or subdivision of the land into residential lots.

(2) A consent authority must not grant development consent that is subject to a condition requiring the payment of a monetary contribution that exceeds the amount specified in the table below for the relevant period (being the period in which the development consent is granted).

<table>
<thead>
<tr>
<th>Relevant period</th>
<th>Maximum amount of contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Date on which 2017 amendment direction</td>
<td>$30,000 for each dwelling or each residential lot</td>
</tr>
<tr>
<td>Item</td>
<td>Date Range</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>2</td>
<td>1 January 2018 to 30 June 2018</td>
</tr>
<tr>
<td>3</td>
<td>1 July 2018 to 30 June 2019</td>
</tr>
<tr>
<td>4</td>
<td>1 July 2019 to 30 June 2020</td>
</tr>
<tr>
<td>5</td>
<td>On and from 1 July 2020</td>
</tr>
</tbody>
</table>

(3) In this clause, “specified contributions plan” means any of the following:

**The Hills Shire**
- Contributions Plan No.13 – North Kellyville Precinct
- The Hills Section 94 Contributions Plan (CP) No.15 – Box Hill Precinct
- Contributions Plan No.12 – Balmoral Road Release Area
- The Hills Section 94 Contributions Plan (CP) No.16 – Box Hill North Precinct

**Blacktown**
- Section 94 Contributions Plan No.20 – Riverstone & Alex Avenue Precincts
- Section 94 Contributions Plan No.24 – Schofields Precinct
- Section 94 Contributions Plan No.22 – Area 20 Precinct
- Section 94 Contributions Plan No.21 – Marsden Park

**Wollongong**
- draft West Dapto Section 94 Development Contributions Plan 2017

(4) For the purposes of this clause, the draft West Dapto Section 94 Contributions Plan 2017 as attached to the minutes of the meeting of Wollongong City Council of 3 April 2017 is taken to be the plan that applies to the relevant land when the 2017 amendment direction takes effect.

(5) To avoid doubt, this clause continues to apply in relation to land to which a specified contributions plan as in force at 28 July 2017 applies (or applied) even if:

(a) that plan is amended or repealed, or
(b) any new or amended contributions plan that applies to the land also applies to other land.

Accordingly, a monetary contribution may be imposed as a condition of consent for development on any such land, if allowed by the applicable contributions plan, up to the maximum amounts set out in items 1 to 4 of the table to subclause (2), irrespective of whether the amended plan or the new plan is an IPART reviewed contributions plan.
(6) If, on or after 1 July 2020, the contributions plan that applies when development consent is granted is not the relevant specified contributions plan as in force at 28 July 2017 or an IPART reviewed contributions plan, the consent authority must not grant development consent subject to a condition requiring the payment of a monetary contribution that exceeds $30,000 for each dwelling or each residential lot.

Note. The plans listed above as in force at the date the 2017 amendment direction took effect can be viewed on the website of the Department of Planning and Environment. The 2017 amendment direction took effect on its date of publication in the Government Gazette, namely 28 July 2017.

The specified contributions plans were reviewed by IPART before the 2017 amendment direction took effect.

6B Raising cap in Rockdale Urban Renewal Area after 2017 amendment direction

(1) This clause applies (instead of clause 6) to a development consent to the extent that the consent relates to land to which the draft Rockdale Contributions Plan 2016 – Urban Renewal Area (as submitted to IPART for review) applies and authorises one or more dwellings on the land or subdivision of the land into residential lots.

Note. The Rockdale Contributions Plan 2016 – Urban Renewal Area (as submitted to IPART for review in 2016) can be viewed on the website of the Department of Planning and Environment.

(2) A consent authority must not grant development consent that is subject to a condition requiring the payment of a monetary contribution that exceeds the amount specified in the table below for the relevant period (being the period in which the development consent is granted).

<table>
<thead>
<tr>
<th>Relevant period</th>
<th>Maximum amount of contribution</th>
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<tr>
<td>1 Date on which the 2017 amendment direction takes effect to 31 December 2017</td>
<td>$20,000 for each dwelling or each residential lot</td>
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<tr>
<td>2 1 January 2018 to 30 June 2018</td>
<td>$25,000 for each dwelling or each residential lot</td>
</tr>
<tr>
<td>3 1 July 2018 to 30 June 2019</td>
<td>$30,000 for each dwelling or each residential lot</td>
</tr>
<tr>
<td>4 1 July 2019 to 30 June 2020</td>
<td>$35,000 for each dwelling or each residential lot</td>
</tr>
<tr>
<td>5 On and from 1 July 2020</td>
<td>An amount determined in accordance with the applicable contributions plan, if the contributions plan is an IPART reviewed contributions plan</td>
</tr>
</tbody>
</table>

(3) To avoid doubt, this clause continues to apply in relation to land to which draft Rockdale Contributions Plan 2016 – Urban Renewal Area (as submitted to IPART for review) applies even if:

(a) that draft contributions plan, when approved under the Environmental Planning and Assessment Act 1979, is amended, or
the contributions plan, as approved, is amended or repealed, or
any new or amended contributions plan that applies to the land also applies to
other land.

Accordingly, a monetary contribution may be imposed as a condition of consent for
development on any such land, if allowed by the applicable contributions plan, up to
the maximum amounts set out in items 1 to 4 of the table to subclause (2), irrespective
of whether the contributions plan is an IPART reviewed contributions plan.

(4) If, on or after 1 July 2020, the contributions plan that applies when development
consent is granted is not an IPART reviewed contributions plan, the consent authority
must not grant development consent subject to a condition requiring the payment of a
monetary contribution that exceeds $30,000 for each dwelling or each residential lot.

6C Raising cap in Camden and Liverpool contributions areas after 2017
amendment direction

(1) This clause applies (instead of clause 6) to a development consent to the extent that
the consent relates to land to which a Camden/Liverpool contributions plan applies
when the 2017 amendment direction takes effect and authorises one or more
dwellings on the land or subdivision of the land into residential lots.

(2) A consent authority must not grant development consent that is subject to a condition
requiring the payment of a monetary contribution that exceeds the amount specified in
the table below for the relevant period (being the period in which the development
consent is granted).

<table>
<thead>
<tr>
<th>Relevant period</th>
<th>Maximum amount of contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Date on which the 2017 amendment direction takes effect to 31 December 2017</td>
<td>$30,000 for each dwelling or each residential lot</td>
</tr>
<tr>
<td>2 1 January 2018 to 30 June 2018</td>
<td>$35,000 for each dwelling or each residential lot if the applicable Camden/Liverpool contributions plan is an IPART reviewed contributions plan (when consent is granted) and $30,000 for each dwelling or each residential lot in any other case</td>
</tr>
<tr>
<td>3 1 July 2018 to 30 June 2019</td>
<td>$40,000 for each dwelling or each residential lot if the applicable Camden/Liverpool contributions plan is an IPART reviewed contributions plan (when consent is granted) and $30,000 for each dwelling or each residential lot in any other case</td>
</tr>
<tr>
<td>4 1 July 2019 to 30 June 2020</td>
<td>$45,000 for each dwelling or each residential lot if the applicable Camden/Liverpool contributions plan is an IPART reviewed contributions plan (when consent is granted) and $30,000 for each dwelling or each residential lot in any other case</td>
</tr>
<tr>
<td>5 On and from 1 July 2020</td>
<td>An amount determined in accordance with the applicable Camden/Liverpool contributions plan if</td>
</tr>
</tbody>
</table>
the applicable Camden/Liverpool contributions plan is an IPART reviewed contributions plan or another IPART reviewed contributions plan (when consent is granted), and $30,000 for each dwelling or each residential lot in any other case.

(3) In this clause, *Camden/Liverpool contributions plan* means any of the following:

**Liverpool**
- Liverpool Contributions Plan 2008 (Edmondson Park)
- Liverpool Contributions Plan 2014 Austral and Leppington North Precincts
- Liverpool Contributions Plan 2014 – East Leppington Precinct

**Camden**
- Oran Park and Turner Road Precincts Section 94 Contributions Plan
- Camden Growth Areas Contributions Plan
- Catherine Fields (Part) Precinct Section 94 Contributions Plan

6D **Raising cap in Riverstone East, Blacktown LGA, after 2018 amendment direction**

(1) This clause applies (instead of clause 6) to a development consent to the extent that the consent relates to rezoned land in Riverstone East (within Blacktown local government area) and authorises one or more dwellings on the land or subdivision of the land into residential lots.

(2) A consent authority must not grant development consent that is subject to a condition requiring the payment of a monetary contribution that exceeds:

(a) if the contributions plan that applies to the development is an IPART reviewed contributions plan when development consent is granted - the amount specified in the table below for the relevant period, and

(b) in any other case - $30,000 for each dwelling or each residential lot.

(The relevant period is the period in which development consent is granted.)

<table>
<thead>
<tr>
<th>Relevant period</th>
<th>Maximum amount of contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1 January 2018 to 30 June 2018</td>
<td>$35,000 for each dwelling or each residential lot</td>
</tr>
<tr>
<td>2 1 July 2018 to 30 June 2019</td>
<td>$40,000 for each dwelling or each residential lot</td>
</tr>
<tr>
<td>3 1 July 2019 to 30 June 2020</td>
<td>$45,000 for each dwelling or each residential lot</td>
</tr>
<tr>
<td>4 On and from 1 July 2020</td>
<td>An amount determined in accordance with the applicable contributions plan</td>
</tr>
</tbody>
</table>

(3) In this clause, *rezoned land in Riverstone East* means the land identified by pink hatching and the letter “F” within Riverstone East Precinct on the North West Growth Centre Land Application Map (as land to which Blacktown Growth Centres Precinct
Plan 2013 applies), adopted by *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* as at 22 August 2016.

**Note.** The relevant land application map sheets identifying the land within Riverstone East Precinct in the North West Growth Centre to which the above SEPP applies are LAP_004, LAP_008 and LAP_009.

### 7 Pending development applications

1. This Direction extends to development applications made to a council, but not finally determined, before this Direction takes effect.

2. This Direction does not apply to:
   
   (a) any application for modification of a development consent that was granted before this Direction takes effect, and
   
   (b) any condition of a development consent that was granted before this Direction takes effect.

### 8 Revocation of existing direction

1. The *Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2011* (which took effect on 4 March 2011) is revoked.

2. The revocation of the *Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2011* does not affect:
   
   (a) the operation of a condition of a development consent imposed in accordance with that Direction, or
   
   (b) the operation of a condition of a development consent imposed in accordance with the earlier direction under section 94E of the *Environmental Planning and Assessment Act 1979* that took effect on 16 September 2010 and that was revoked by the *Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2011*.

### 9 Pending applications when Amending Directions take effect

1. This clause applies to amendments made to this Direction by the following Directions (“Amendment Directions”):
   
   (a) *Environmental Planning and Assessment (Local Infrastructure Contributions) Amendment Direction 2013*,
   
   (b) *Environmental Planning and Assessment (Local Infrastructure Contributions) Amendment Direction 2016*,
   
   (c) *Environmental Planning and Assessment (Local Infrastructure Contributions) Amendment Direction 2017*,
   
   (d) *Environmental Planning and Assessment (Local Infrastructure Contributions) Amendment Direction 2018*,
   
   (e) *Environmental Planning and Assessment (Local Infrastructure Contributions) Further Amendment Direction 2018.*
(2) The amendments made to this Direction by each Amendment Direction extend to development applications made to a council, but not finally determined, before that Amendment Direction takes effect.

(3) The amendments made to this Direction by each Amendment Direction do not apply to:

(a) any application for modification of a development consent if that consent was granted before the Amendment Direction takes effect, and

(b) any condition of a development consent that was granted before the Amendment Direction takes effect.

Note 1. The Environmental Planning and Assessment (Local Infrastructure Contributions) Amendment Direction 2013 took effect on 16 July 2013.
The Environmental Planning and Assessment (Local Infrastructure Contributions) Amendment Direction 2016 took effect on its date of publication in the Government Gazette, being 23 September 2016.
The Environmental Planning and Assessment (Local Infrastructure Contributions) Amendment Direction 2017 took effect on its date of publication in the Government Gazette, being 28 July 2017.
The Environmental Planning and Assessment (Local Infrastructure Contributions) Amendment Direction 2018 took effect on its date of publication in the Government Gazette, being 23 February 2018.
The Environmental Planning and Assessment (Local Infrastructure Contributions) Further Amendment Direction 2018 took effect on its date of publication in the Government Gazette, being 18 January 2019.

Note 2. Section 94EC (1A) of the Environmental Planning and Assessment Act 1979 provides as follows:

The imposition of a condition by an accredited certifier as authorised by a contributions plan is subject to compliance with any directions given under section 94E (1) (a), (b) or (d) with which a council would be required to comply if issuing the complying development certificate concerned.

------------------------------------------------------------------
Schedule 1  Land in respect of which there is no cap on the amount of the contribution by virtue of this Direction

(1)  Land within the Bathurst Regional Local Government Area identified as Area E in the *Section 94 Contributions Plan Robin Hill - Roads and Drainage Construction*.

(2)  Land within the Blacktown City Local Government Area identified as any of the following:
   (a)  a 1980’s Release Area in the *Section 94 Contributions Plan No.1 – 1980’s Release Areas*,
   (b)  a catchment area in the *Section 94 Contributions Plan No.2 – Local Roadworks*,
   (c)  Catchment 1: Blacktown, Catchment 2: Rooty Hill/Mount Druitt or Catchment 3: Riverstone/Schofields in the *Section 94 Contributions Plan No.3 – Open Space in Established Residential Areas*,
   (d)  the Mount Druitt Development Area in the *Section 94 Contributions Plan No.4 – Mount Druitt Development Area*,
   (e)  the Parklea Release Area in the *Section 94 Contributions Plan No. 5 – Parklea Release Area*,
   (f)  the Metella Road Toongabbie Floodplain Catchment in the *Section 94 Contributions Plan No.15 – Metella Road Floodplain*.

(3)  Land within the Camden Local Government Area identified as:
   (a)  the Elderslie Release Area or the Spring Farm Release Area in the *Camden Contributions Plan 2011*, or
   (b)  the Narellan Release Area or the Harrington Park Release Area on the map marked ‘Camden LGA – Exemptions Area’ held at the head office of the Department of Planning and Infrastructure.

(4)  Land within the Campbelltown City Local Government Area identified as the Glenfield Road Urban Release Area in the *Section 94 Development Contributions Plan – Glenfield Road Urban Release Area*.

(5)  Land within the Coffs Harbour City Local Government Area identified as:
   (a)  the Wests Coffs Release Area in the *West Coffs Release Area Contributions Plan 2006*, or
   (b)  the Moonee Release Area identified in the *Moonee Developer Contributions Plan 2008*.

(6)  Land within the Hawkesbury City Local Government Area identified as the Pitt Town Residential Precinct in the *Hawkesbury Section 94 Contributions Plan 2008*.

(7)  Land within the Holroyd City Local Government Area identified as the Neil Street Precinct in the *Neil Street Precinct Section 94 Development Contributions Plan 2007*.

(8)  Land within the Ku-ring-gai Local Government Area identified as:
   (a)  zoned R3 Medium Density Residential, R4 High Density Residential, B2 Local Centre, B4 Mixed Use, B5 Business Development, B7 Business Park, SP2 Infrastructure or RE1 Public Recreation under the *Ku-ring-gai Local Environmental Plan (Town Centres) 2010* and to which the *Ku-ring-gai Contribution Plan 2010* applies, or
(b) zoned No 2(d3) Residential “D3” under the Ku-ring-gai Local Environmental Plan No 194 and to which the Ku-ring-gai Contribution Plan 2010 applies.

(9) Land within the Lake Macquarie City Local Government Area identified as:
   (a) the Northlakes Urban Release Area in the Lake Macquarie Section 94 Contributions Plan No.2 – Northlakes, or
   (b) Coorangbong (local roads sub-catchment 1), excluding North Cooranbong and Highland Avenue Urban Release Area, Highland Avenue URA (local roads sub-catchment 3) and Morisset (local roads sub-catchment 9B) in the Lake Macquarie City Council Development Contributions Plan 2012 – Morisset Contributions Catchment.

(10) Land within the Liverpool City Local Government Area identified as Carnes Hill, Hoxton Park, Middleton Grange or Prestons in the Liverpool Contributions Plan 2009.

(11) Land within the Marrickville Local Government Area to which the Marrickville Section 94 Contributions Plan 2004 applies.

(12) Land within the Palerang Local Government Area identified as Summerhill Road, Matthews Lane, the Woolshed Lane, Wanna Wanna Road, Clare Lane, Joe Rocks Road or Fernloff Road on the map marked ‘Palerang LGA – Exemptions Area’ held at the head office of the Department of Planning and Infrastructure.

(13) Land within the Penrith City Local Government Area identified as:
   (a) Claremont Meadows Stage 2 in the Claremont Meadows Development Contributions Plan Amendment No.1, or
   (b) Glenmore Park Stage 1 in the Glenmore Park Stage 1 Development Contributions Plan 2008.

(14) Land within the Pittwater Local Government Area identified as the Warriewood Valley Urban Release Area in the Warriewood Valley Section 94 Contributions Plan No. 15 Amendment No.16.

(15) Land within the Port Macquarie-Hastings Local Government Area identified as Kings Creek in the Kings Creek Contributions Plan Version 2.5.

(16) Land within the Queanbeyan City Local Government Area identified as the Wanna Wanna Road Precinct on the map marked ‘Queanbeyan LGA – Exemptions Area’ held at the head office of the Department of Planning and Infrastructure.

(17) Land within the Shoalhaven City Local Government Area identified as the Riversdale Road Area, the Parma Road Area or the Kangaroo River Bridge Area in the Shoalhaven Contributions Plan 2010.

(18) Land within The Hills Shire Local Government Area identified as any of the following:
   (a) Kellyville/Rouse Hill in the Section 94 Contributions Plan No.8 – Kellyville/Rouse Hill,
   (b) Bella Vista Village in the Section 94 Contributions Plan No.2 – Bella Vista Village,
   (c) the West Pennant Hills Valley in the Section 94 Contributions Plan No.2 – West Pennant Hills Valley,
(d) Crestwood in the Section 94 Contributions Plan No.3 – Crestwood,
(e) Glenhaven in the Section 94 Contributions Plan No.4 – Glenhaven,
(f) Castle Hill in the Section 94 Contributions Plan No.5 – Castle Hill,
(g) a Southern Precinct in the Section 94 Contributions Plan No.7 – Southern Precincts.

(19) Land within the Tweed Local Government Area identified as Seaside City in the Section 94 Contributions Plan No.28 – Seaside City.

(20) Land within the Wyong Local Government Area identified as:

(a) The Entrance District in the Section 94 Contributions Plan No.3 ‘The Entrance District’, or

(b) the Warnervale District Release Areas in the Section 94 Contributions Plan No.7A ‘Drainage, Water Quality, Open Space, Community Facilities and Roads – Warnervale District’.
Schedule 2  Land subject to the $30,000 maximum contribution

(1) Land within the Ballina Shire Council Local Government Area identified as Precinct A - Cumbalum Urban Release Area on the map marked ‘Cumbalum Urban Release Area Precinct A’ held at the head office of the Department of Planning and Infrastructure.

(2) Land within the Camden Local Government Area identified as Harrington Grove or Mater Dei on the map marked ‘Camden LGA – Greenfield Release Areas’ held at the head office of the Department of Planning and Infrastructure.

(3) Land within the Coffs Harbour City Local Government Area identified as the Hearnes Lake Release Area or Sandy Beach Release Area in the *Hearnes Lake/Sandy Beach Release Area Developer Contributions Plan 2008*.

(4) Land within the Eurobodalla Local Government Area identified as Glenella Service Road 1c, Batehaven Greenfield Area, Broulee Greenfield Area, Dalmeny Greenfield Area, Kianga Greenfield Area, Malua Bay Greenfield Area, Bay Ridge 1c, Moruya 1c, Tomakin Greenfield Area, Longbeach Greenfield Area, Moruya South Greenfield Area, Moruya West Greenfield Area, Mystery Bay Greenfield Area, Narooma Greenfield Area, Nelligen 1c, Rosedale Greenfield Area, Central Tilba 1c or Bingi 1c on the map marked ‘Eurobodalla LGA – Greenfield Release Areas’ held at the head office of the Department of Planning and Infrastructure.

(5) Land within the Greater Taree City Local Government Area identified as the Old Bar Precinct 2B or Precinct 3 in the *Old Bar Contributions Plan 2010*.

(6) Land within Lake Macquarie Local Government Area identified as:

(a) North Wallarah in the *Lake Macquarie Section 94 Contributions Plan No.5 – North Wallarah Peninsula (2004)*, or

(b) any of the following areas identified in the *Lake Macquarie City Council Development Contributions Plan – Glendale Contributions Catchment* (as at 1 December 2017): Glendale Central Urban Release Area, Glendale East Urban Release Area, Glendale West Urban Release Area and Warners Bay Urban Release Area, or

(c) Arcadia Vale Urban Release Area in the *Lake Macquarie City Council Development Contributions Plan – Toronto Contributions Catchment* (as at 1 December 2017), or

(d) the Urban Release Areas identified as Catherine Hill Bay Area 1, Catherine Hill Bay Area 2 and Nords Wharf Area 1 on the urban release area map (URA_011) adopted by *Lake Macquarie Local Environmental Plan 2014*, as in force at 1 December 2018.

(7) Land within the Maitland City Local Government Area identified as:

(a) the Lochinvar Urban Release Area in draft *Lochinvar Section 94 Contributions Plan 2012* (being the area shown as Lochinvar Contributions Catchment in Figure 1), as exhibited between 12 December 2012 and 13 February 2013,

(b) the Thornton North Release Area in the *Thornton North Section 94 Contributions Plan 2008*, or
(c) the Farley Urban Release Area in *Farley Section 94 Contributions Plan 2015*, adopted 12 April 2016.

(8) Land within the Nambucca Shire Local Government Area identified as the Contribution Catchment on Map C1 in the *Smiths Lane Local Road and Traffic Infrastructure Developer Contribution Plan 2010*.

(9) Land within the Penrith City Local Government Area identified as:
   (a) the WELL Precinct in the *Werrington Enterprise Living and Learning (WELL) Precinct Development Contribution Plan*, or
   (b) Glenmore Park Stage 2 in the *Glenmore Park Stage 2 Development Contributions Plan*.

(10) Land within the Port Macquarie-Hastings Local Government Area identified as Thrumster, Innes Peninsula, Camden Haven or Lake Cathie / Bonny Hills on the map marked ‘Port Macquarie-Hastings LGA – Greenfield Release Areas’ held at the head office of the Department of Planning and Infrastructure.


(12) Land within the Queanbeyan-Palerang Regional Local Government Area identified as:
   (a) Locations 3 and 4 on the Fernleigh/Royalla Rural Roads Contribution Map in the *Queanbeyan City Council – Section 94 Contributions Plan 2012*, or
   (b) Googong New Town (comprising Googong New Town Urban Area and Googong New Town Hamlets) in the *Queanbeyan City Council - Section 94 Contributions Plan (Googong) 2015*, as notified on 29 April 2016, or
   (c) South Jerrabomberra Urban Release Area in *Queanbeyan-Palerang Regional Council South Jerrabomberra Local Infrastructure Contributions Plan 2018* as adopted on 26 April 2018.

(13) Land within Shoalhaven City Local Government Area identified in *Shoalhaven Contributions Plan 2010* as any of the following:
   (a) Iron Bark Road Tapitallee upgrade area,
   (b) Flannery Lane upgrade area,
   (c) Browns Mountain Road upgrade area,
   (d) Broger’s Creek Road gravel upgrade area,
   (e) Wattamolla Road upgrade area,
   (f) Graham’s Road/unnamed road gravel upgrade area,
   (g) Spotted Gum Drive upgrade area,
   (h) Hart Road bitumen upgrade area,
   (i) Sinclair Road Part 3 bitumen upgrade area,
   (j) Bendalong Mountain Road upgrade area,
   (k) Pointer Road upgrade area,
   (l) Bugong Road upgrade area.
(14) Land within the Tweed Local Government Area identified as Black Rocks, Koala Beach, West Murwillumbah, Tanglewood, Kings Forest – Casuarina Beach, SALT, West Kingscliff, Area ‘E’ (Terranora), Terranora Village, Bilambil Heights, Cobaki Lakes, Nightcap Village or Hastings Point on the map marked ‘Tweed LGA – Greenfield Release Areas’ held at the head office of the Department of Planning and Infrastructure.

(15) Land within Wollondilly Local Government Area referred to as Wilton Growth Area in State Environmental Planning Policy (Sydney Region Growth Centres) 2006, with boundaries shown on the Wilton Growth Area Precinct Boundary Map adopted by that Policy as at 29 July 2016 (identified as PCB_001).

(16) Land within the Wyong Local Government Area identified as Warnervale Town Centre in Warnervale Town Centre Development Contributions Plan 2012, other than land that is within a Warnervale District Release Area referred to in item 20 (b) of Schedule 1.

(17) Land within the following growth centres precincts shown on the North West Growth Centre Precinct Boundary Map or the South West Growth Centre Precinct Boundary Map (other than land identified in Schedule 1), adopted by the State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (as in force when the 2017 amendment direction takes effect):

- West Schofields
- Vineyard
- Riverstone East (other than rezoned land within Riverstone East, as defined in clause 6D)
- Lowes Creek
- Marylands
- Riverstone West
- Marsden Park North
- Shanes Park
- Rossmore
- Bringelly
- Catherine Fields
- Catherine Fields North

---------------------------------------------
CCL 10/12/19
DRAFT AMENDMENT TO NEWCASTLE LEP 2012 - 233 WHARF ROAD AND 250 AND PART 150A SCOTT STREET, NEWCASTLE

Item 99 Attachment A: Draft Newcastle DCP 2012 Section 6.01 Newcastle City Centre

Item 99 Attachment B: Site Map and proposed zoning
CCL 10/12/19
DRAFT AMENDMENT TO NEWCASTLE LEP 2012 - 233 WHARF ROAD
AND 250 AND PART 150A SCOTT STREET, NEWCASTLE

Item 99 Attachment A:
Draft Newcastle DCP 2012 Section 6.01 Newcastle
City Centre
Amendment history

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Savings provisions

Any development application lodged but not determined prior to this section coming into effect will be determined taking into consideration the provisions of this section.

Land to which this section applies

This section applies to the Newcastle City Centre as shown in Figure 6.01-1 below.

*Figure 6.01-1: Newcastle City Centre Land Application Map*

Development (type/s) to which this section applies

This section applies to all development consisting:

- New buildings or structures
- Additions or alterations to existing buildings or structures
Applicable environmental planning instruments and legislation

The provisions of the following listed environmental planning instrument/s also apply to development applications to which this section applies:

▪  Newcastle Local Environmental Plan 2012
▪  State Environmental Planning Policy No. 65 - Design Quality of Residential Apartment Development
▪  State Environmental Planning Policy No 71 - Coastal Protection
▪  State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

In the event of any inconsistency between this section and the above listed environmental planning instrument, the environmental planning instrument will prevail to the extent of the inconsistency.

Note 1: Additional environmental planning instruments may also apply in addition to those listed above.

Note 2: Section 74E (3) of the Environmental Planning and Assessment Act 1979 enables an environmental planning instrument to exclude or modify the application of this DCP in whole or part.

Related sections

The following sections of this DCP will also apply to development to which this section applies:

▪  Any applicable land use specific provision under Part 3.00
▪  4.04 Safety and Security
▪  7.02 Landscaping, Open Space and Visual Amenity
▪  7.03 Traffic, Parking and Access
▪  7.05 Energy Efficiency
▪  7.06 Stormwater
▪  7.07 Water Efficiency
▪  7.08 Waste Management

Note 1: Any inconsistency between the locality specific provision and the landuse specific provision, the locality specific provision will prevail to the extent of the inconsistency.

Note 2: Provisions within Section 6.01.04 - Key Precincts will have precedence over other sections of the DCP.

The following sections of this DCP may also apply to development to which this section applies:

▪  3.01 Subdivision - where subdivision of land is proposed
▪  4.01 Flood Management - all land which identified as flood prone under the Newcastle Flood Policy or within a PMF or area likely to flood.
▪  4.03 Mine Subsidence - within mine subsidence area
▪  5.01 Soil Management - works resulting in any disturbance of soil and/or cut and fill
▪  5.02 Land Contamination - land on register or where risk from previous use
▪  5.03 Tree Management - trees within 5m of a development footprint or those trees likely to be affected by a development
▪  5.04 Aboriginal Heritage - known/likely Aboriginal heritage item/site and/or potential soil disturbance
▪  5.05 Heritage Items - known heritage item or in proximity to a heritage item.
• 5.06 Archaeological Management - known/likely archaeological site or potential soil disturbance
• 6.02 Heritage Conservation Areas - known conservation area
• 7.04 Movement Networks - where new roads, pedestrian or cycle paths are required.
• 7.09 Advertising and Signage
• 7.10 Street Awnings and Balconies - awnings or balconies located over public land

Associated technical manual/s
• City Centre Public Domain Technical Manual

Definitions
A word or expression used in this development control plan has the same meaning as it has in Newcastle Local Environmental Plan 2012, unless it is otherwise defined in this development control plan.

Other words and expressions referred to within this section are defined within Section 9.00 - Glossary, of this plan.

Additional information
This Newcastle Development Control Plan (DCP) section provides detailed standards and guidance for development in Newcastle’s city centre.

This section forms part of the community vision and is consistent with the provisions of the Newcastle Local Environmental Plan (LEP) 2012. It is to be read in conjunction with the LEP and other relevant sections of the DCP for the assessment of all development applications in the city centre.

This guide has been developed to consolidate and replace sections 6.01 and 6.02 of the Newcastle Development Control Plan 2012. This guide has performance criteria that explain the planning outcomes to be achieved. Accompanying the performance criteria are acceptable solutions that illustrate the preferred way of complying with the corresponding performance criterion. There may be other ways of complying with performance criteria and it is up to the applicant to demonstrate how an alternative solution achieves this.

Development Application requirements
3D modelling: any application to carry out development that exceeds two storeys in height, or development that is in a “Key Precinct” is to be accompanied by a 3D file of the proposed development within the context of the Newcastle CBD 3D model. The format should be compatible to that used by the City of Newcastle council.

The 3D Model should be used to develop the following information:
• context 'before' and 'after' streetscape drawings/images and/or photomontages;
• shadow diagrams; and
• assessment of impact on view corridors.
Urban Design Consultative Group

Council has established an Urban Design Consultative Group to provide independent urban design and architectural advice on major development proposals within the Newcastle City Centre. The Urban Design Consultative Group is recognised by the Minister for Planning as a SEPP 65 Design Review Panel. In addition to providing advice on SEPP 65 matters, the Group may consider any development matters in accordance with the approved Charter for the Urban Design Consultative Group.

Note: Clause 7.5 (4) of the Newcastle Local Environmental Plan 2012 requires an architectural design competition for certain types of development.

Clause 7.5 (6) of the Newcastle Local Environmental Plan 2012 states that the consent authority may grant consent for a variation of up to 10% of the maximum floor space ratio or height control if the proposal has been reviewed by a Design Advisory Panel.
6.01.01  Introduction

The vision

Newcastle City Centre will continue to grow and evolve to strengthen its position as the Hunter Region’s capital. The city centre will reflect the Newcastle Community Strategic Plan 2030 vision to be a ‘Smart, Liveable and Sustainable City’, and the initiatives of the Newcastle Urban Renewal Strategy. Newcastle city centre will be an attractive city that is built around people and reflects our sense of identity.

Purpose of this section

This Development Control Plan section has been prepared as an implementation action of the Newcastle Urban Renewal Strategy. It integrates place-based planning for Newcastle East, Honeysuckle and Newcastle West. The Development Control Plan section contains a comprehensive set of planning and design guidelines. The design guidelines are derived from the characteristic features of distinct areas within the city centre.

Aims of this section

1. To implement the Newcastle Urban Renewal Strategy
2. To integrate planning for Newcastle East, Honeysuckle and Newcastle West
3. To provide a comprehensive set of planning and design guidelines based on the characteristic of distinct areas within the city centre.

6.01.02  Character Areas

A. Character Areas overview

Within the city centre there are a number of areas with distinct characteristics. These ‘character areas’ each have their own unique setting that provide opportunities for the ongoing renewal and revitalisation of the city centre. They are divided into areas based on their attributes, including topography, landscape, heritage, streetscape, land uses and built form. The character areas are described in the following character statements in this part and are identified in Figure 6.01-2.

In addition to the character areas, seven ‘key precincts’ have been identified. The key precincts are focused around major public spaces in the city centre and have special provisions outlined in Part 6.01.04 of this DCP section that need to be considered.

This part contains the character statements and supporting principles for development within all character areas of Newcastle’s city centre. The statements are place-specific and build on the existing urban structure, character of the neighbourhoods and important elements that will
contribute to the future quality of the area. The statements are supported by a number of principles that help reinforce and enhance the character of each locality.

*Figure 6.01-2: Character Areas Overview*

**Overall principles**

1. The unique character of each Character Area is enhanced.
2. New development has regard to the fabric and character of each area in scale, proportion, street alignment, materials and finishes and reinforce distinctive attributes and qualities of built form.
3. Heritage items and their setting are protected.
4. Public spaces, including streets, lanes and parks maintain high levels of solar access.
5. Active frontages address the public domain.
6. Existing significant views and vistas to buildings and places of historic and aesthetic importance are protected.
B. West End

This area is the western gateway to Newcastle’s city centre and is an area of unrealised potential. It currently has showroom and bulky goods facilities, retail, car dealerships and self storage. The predominance of larger consolidated land holdings and fewer environmental and heritage constraints make this precinct ideally suited to become the future CBD of Newcastle. This precinct has fewer public domain assets. Improvement of public open space is needed to ensure the precinct is well-served as it evolves into a commercial precinct. Public domain opportunities include improvements to Birdwood Park, the Cottage Creek corridor and connections to the river foreshore. Public domain improvements should be in accordance with any adopted public domain plan of Council.

Principles

1. New public spaces are created to meet the demands of the future CBD and existing public open spaces are improved, such as Birdwood Park and Cottage Creek. Opportunities for new publicly accessible spaces are identified.

2. Birdwood Park is recognised as an important element in the public domain network and as the western ‘gateway’ to the city centre.

3. New development fronting Birdwood Park addresses the park edge and promotes a sense of enclosure by being built to the street alignment. Any new development ensures adequate midwinter lunch time sun access to Birdwood Park.

4. Development along the former rail corridor, Cottage Creek, lanes or through-site links provide a building address to encourage activity, pedestrian and cycleway movement, and improve safety.

5. Building entries are inviting with activate frontages that allow visual permeability from the street to within the building.

6. Distinctive early industrial, warehouse and retail buildings that contribute to the character of the area are retained and re-purposed.

7. Heritage items and their setting are protected.
C. Honeysuckle

Honeysuckle is currently the premier locale for A-grade large floor plate commercial office development. A range of complementary uses include higher density residential development, restaurants and hotels which take advantage of Honeysuckle’s prime position on the Hunter River foreshore. Honeysuckle has opportunities for significant public domain. The extension of the foreshore park westwards will form a continuous publicly accessible foreshore that extends from Maryville to Merewether around the city centre peninsula.

Principles

1. Development between the former rail corridor and Honeysuckle Drive provides a building address to both frontages.

2. Development along the waterfront, Cottage Creek, lanes or through-site links provide a building address to encourage activity, pedestrian and cycleway movement, and improve safety.

3. Heritage items and their setting are protected Principles
D. Civic

Civic is the administrative, cultural and educational centre of Newcastle. It includes facilities that reflect Newcastle’s importance as a major regional city such as Newcastle Museum, Newcastle Art Gallery and City Hall. It is the location of major public assets such as Wheeler Place and the Civic Theatre.

The relocation of the courts to Civic and the introduction of more educational facilities associated with the University of Newcastle will have a major effect on the future character and activity within this area. Smaller commercial spaces will redevelop as support services for the courts and the university, and an increased student population will create flow-on demand for housing, retail and other services.

**Principles**

1. The pedestrian connection linking a number of the city's cultural buildings and spaces is reinforced, between Newcastle Art Gallery, through Civic Park and Wheeler Place, past the Newcastle Museum to the foreshore of the Hunter River.

2. Visual and physical connections through the area and between Civic and the Hunter River foreshores are opened.

3. Development between the former rail corridor and Hunter Street provides a building address to both frontages.

4. Public open space in the heart of Civic is improved and expanded through the addition of the Civic Link to complement and enhance Wheeler Place.

5. Development along publicly accessible spaces, lanes or through-site links provide a building address to encourage activity, pedestrian and cycleway movement, and improve safety.

6. Mid-winter lunch time sun access is protected to the footpath on the south side of Hunter Street and to Wheeler Place, Civic Link, Civic Park and Christie Place.

7. Distinctive early industrial, warehouse, and retail buildings that contribute to the character of the area are retained and re-purposed.

8. Development is encouraged that will support the role of Civic as the primary administrative, cultural and educational centre of Newcastle.

9. The expansion of Civic should extend northwards to link the Civic public realm to Newcastle Museum.
E. Parry Street

The area to the north of National Park and south of King Street is currently a mixture of commercial development with some residential and retail development such as the shopping centre, Marketown. In the future, this precinct will be characterised by more high density residential development taking advantage of the good amenity offered by proximity to the city centre and National Park and available services such as retail, entertainment and employment opportunities.

Image 6.01-6: Hall Street, an area in transition

Principles

1. Public domain spaces are improved to support the evolving character of the area into a high-density residential and mixed use precinct.

2. Distinctive early industrial and warehouse buildings that contribute to the character of the area are retained and re-purposed.

3. Development along Cottage Creek provides a building address to encourage activity, pedestrian and cycleway movement, and improve safety.

Image 6.01-7: Parry Street, new residential development
F. East End

East End centres on the former Hunter Street Mall (between Perkins and Newcomen Street) and the terminus of Hunter Street at Pacific Park. The precinct is characterised by hilly topography and a mix of uses focusing on the retail spine of Hunter Street Mall. The subdivision is more finely grained than other areas of the city centre. A mix of heritage listed and historic buildings give this part of Newcastle a unique character and offer interesting and eclectic streetscapes.

**Principles**

1. Hunter Street continues to be the main retail spine of the area, supported by a range of complimentary uses, including residential, commercial, entertainment and dining.

2. Hunter Street is recognised and enhanced as a major pedestrian space and an informal meeting place.

3. The historic fine grain character is maintained and enhanced.

4. Significant views to and from Christ Church Cathedral are protected, including views from Market Street and Morgan Street. Views to Hunter River are protected and framed along Market Street, Watt Street and Newcomen Street.

5. Vistas that terminate at significant heritage buildings are protected, such as Fort Scratchley.

6. Distinctive early industrial, warehouse and retail buildings that contribute to the character of the area are retained and re-purposed, including prominent corner buildings.

7. Existing laneways and pedestrian connections are enhanced.

8. Heritage items and their setting are protected. New buildings respect the setting of heritage buildings.

9. In-fill buildings, additions and alterations to respond to the height, massing and predominant horizontal and vertical proportions of existing buildings.

10. Recreational opportunities are created by establishing public space and pedestrian connections from Scott Street to the Hunter River foreshore.
G. Newcastle Beach

With the redevelopment of Newcastle Hospital, Newcastle Beach has emerged as the location of a cluster of high rise tourist and visitor accommodation and high quality residential apartments overlooking the beach.

Newer developments have been accompanied by high quality public domain improvements and good pedestrian through-site connections to the beach front. The area adjoins Newcastle East Heritage Conservation Area, so development on this edge must ensure sensitive transitions responding to the lower scale development in Newcastle East Heritage Conservation Area.

**Principles**

1. The public domain and amenity is enhanced to support the high-density residential and hotel uses.
2. Pedestrian access is improved to Newcastle Beach.
3. New development addresses the street to provide a good interface with the public domain.
4. Development adjoining Newcastle East Heritage Conservation Area creates a transition in scale by aligning the scale, proportion, from and finishes of the associated buildings.
5. The high environmental quality of the area is maintained.
H. Newcastle East Heritage Conservation Area

Newcastle East Heritage Conservation Area is characterised by an intact heritage streetscape which is recognised by its inclusion as a Heritage Conservation Area in Schedule 5 of Newcastle LEP 2012, and by the number of state significant heritage items. It is a highly significant cultural landscape that provides a record of the early development of Newcastle.

The area is primarily residential with terrace housing dating from the late nineteenth century. Small corner shops and other ancillary retail or commercial uses are present. Terrace houses are built to the street boundary, with many featuring first floor verandas that overhang the footpath.

The fringes of the area feature heritage listed warehouses that have been converted for residential and commercial uses, and notable buildings including Fort Scratchley Historic Site, Boatman's Row, the Cohen Bondstore and Coutt’s Sailors Home. The north edge of Newcastle East Heritage Conservation Area is bounded by the Coal River Precinct, a place of outstanding heritage significance listed on the NSW State Heritage Register.

Development in this area is subject to the provisions of the Newcastle DCP 2012 heritage provisions and the following principles.

**Principles**

1. The heritage significance of Newcastle East Heritage Conservation Area is retained and conserved.
2. Development responds to and complements heritage items and contributory buildings within heritage conservation areas, including streetscapes and lanes.
3. New development respects the scale, character and significance of existing buildings.
4. Existing views and vistas are maintained into and out of the area to the water and the foreshore parkland.
5. The continuity of Newcastle East's heritage conservation is retained and the diverse social mix of the area is maintained.
I. Foreshore

The extensive foreshore is the primary open space asset of Newcastle’s city centre. It showcases the city’s unique natural setting, between the Hunter River and the Pacific Ocean. The foreshore provides public access linking the river and ocean waterfronts and is also the location of many significant heritage places such as Newcastle Railway Station buildings, Fort Scratchley, Customs House, the Ocean Baths and Nobbys Point lighthouse. Key public facilities can also be found in this precinct such as Nobby Beach, Newcastle Beach, Queens Wharf, Nobby Beach Surf Pavilion, and the foreshore cycleway and promenade. Development must complement the leisure, recreation and heritage uses of the Foreshore area.

Principles

1. The area is enhanced and continues to be the city's major recreational open space for Newcastle’s workers, residents and visitors.
2. New public open space provides recreational opportunities for the community and key access links to the foreshore.
3. New development respects the scale, character and significance of existing buildings, especially heritage items.
4. New development promotes and facilitates the continuity of public access to the whole foreshore.
5. New development complements the use of public spaces as an events space.
6. Heritage items and their setting are protected, including the Aboriginal cultural heritage and non-Aboriginal archaeology.
7. The adaptive re-use of the Newcastle Railway Station maximises the long term potential of the site as a major visitor and community focal point.
6.01.03 General controls

A. Building form

A1. Street wall heights

Street wall heights refer to the height of the building that addresses the public street from the ground level up to the first building setback. They are an important element to ensure a consistent building scale in streets that have a mix of uses, heritage items and infill development.

Street wall heights can provide a sense of enclosure to the street and contribute to the city's character through street alignment with appropriate street-width to building height ratios. They can also have a direct impact on sunlight access to the public domain.

Performance criteria

A1.1. Street wall heights of new buildings define and enclose the street, are appropriately scaled and respond to adjacent development.

Acceptable solutions

1. New buildings have a street wall height of 16m unless indicated otherwise in Figure 6.01-12.
2. Any development above the street wall height is set back a minimum of 6m, as shown in Figure 6.01-11.
3. Corner sites may be emphasised by design elements that incorporate some additional height above the nominated street height.

Alternative solutions

- The street wall height of new buildings may vary if the desired future character is to maintain the existing street wall height of neighbouring buildings, such as heritage streetscapes.
- Deeper setbacks above the street wall height may be needed for heritage buildings or conservation areas to maintain the scale of the streetscape and the setting of heritage items.
- Where it can be demonstrated that there will be no adverse impact in terms of overlooking, overshadowing, or streetscape appearance, a variation to the street wall height setback may be possible.
Figure 6.01-12: Street wall heights plan
A2. Building setbacks

A building setback is the distance between the building and the street boundary, a neighbouring site, waterfront, or any other place needing separation. Building setbacks can enhance development and its relationship with the adjoining sites and the public domain, particularly in terms of access to sunlight, outlook, view sharing, ventilation, wind mitigation and privacy.

In a city centre it is desirable to locate the frontage of lower levels (the podium) on the street boundary to give strong definition to the street and create setbacks in the upper building elements.

**Performance criteria**

A2.1. Building setbacks define and address the street and public domain spaces, and respond to adjacent buildings.

**Acceptable solutions**

1. Front setbacks are nil (zero) unless shown otherwise in Figure 6.01-13 and Table 6.01-1.
2. Where it is not possible to meet the setbacks in Figure 6.01-13 and Table 6.01-1 new development aligns with the adjoining front setbacks.
3. When a setback is used, footpaths, steps, ramps and the like may be provided within it.
4. Minor projections beyond the setback are possible for Juliette balconies, sun shading devices, and awnings. Projections into the setbacks are complementary to the style and character of adjoining buildings.

**Table 6.01-1: Minimum setback for side and rear boundaries**

<table>
<thead>
<tr>
<th>Part of building</th>
<th>Side boundary</th>
<th>Rear boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below street wall height</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Between street wall height and 45m</td>
<td>6m</td>
<td>6m</td>
</tr>
<tr>
<td>Above 45m</td>
<td>12m</td>
<td>12m</td>
</tr>
</tbody>
</table>

*Image 6.01-17: Front building line is located on the boundary to define the street.*

*Figure 6.01-13 Section illustrating minimum side and rear setbacks*
**Performance criteria**

A2.2 Side and rear setbacks enhance amenity and allow for ventilation, daylight access, view sharing and privacy for adjoining buildings.

**Acceptable solutions**

1. Development may be built to the side and rear boundary (a nil setback) below the street wall height.
2. Commercial development above street wall height is consistent with the side and rear setbacks outlined in Table 6.01-1 and Figure 6.01-13.

**Alternative solutions**

- Where there is no adjoining development to respond to, half the separation distances to boundary recommended in the Apartment Design Guide may be acceptable.
- Where there are no openings within the wall, the side setbacks are consistent with Table 6.01-1 and Figure 6.01-13
Figure 6.01-14: Building setbacks plan
A3. Building separation

Building separation is the distance between two or more buildings on the same site. Building separation ensures ventilation, daylight access, view sharing and increased privacy between neighbouring buildings. In residential buildings and mixed-use buildings, separation between windows and balconies from other buildings is particularly important for privacy, acoustic amenity, view sharing and sun access.

Building separation can also enhance the built form by visually separating building elements that can result in more usable public domain spaces in terms of mitigating wind impact and ensuring daylight access. Building separation provided at lower levels, between buildings on the same site, can visually break long building frontages and provide opportunities for mid-block through-site links that connect to other streets or open space.

Performance criteria

A3.1. Sites that accommodate more than one building achieve adequate daylight, ventilation, outlook, view sharing and privacy for each building.

Acceptable solutions

1. Buildings achieve the minimum building separation for commercial buildings within the same site, as shown in Table 6.01-2 and Figure 6.01-14.
2. Building separation distances may be longer for residential and mixed-use developments to satisfy SEPP 65 guidance.
3. Sites with a road frontage 100m or greater include separation between buildings to maximise view corridors between the buildings and provide appropriate through-site links.

Table 6.01-2: Minimum building separation

<table>
<thead>
<tr>
<th>Minimum building separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 16m</td>
</tr>
<tr>
<td>Nil or 6m for link</td>
</tr>
</tbody>
</table>

Image 6.01-18: Solid walls with non-habitable room windows are used for end elevations to manage privacy impacts

Image 6.01-19: Building separation in this residential development allows for ventilation, daylight access, view sharing and privacy

Figure 6.01-15: Section showing minimum separation distances between buildings within the same site and a minimum 6m separation where a through-site link is required.
A4. Building depth and bulk

The size of building floor plates has a direct impact on building bulk and urban form. Setting a maximum size of floor plates is also important to allow for ventilation, daylight access, view sharing and privacy in neighbouring development and the public domain.

Performance criteria

A4.1. Building depth and floor plate sizes relate to the desired urban form and skyline of the city centre.

Acceptable solutions

1. Buildings achieve the maximum building depth and floor plate sizes as outlined in Table 6.01-3.
2. Buildings with large floor plates are expressed as separate building elements, as shown in Figure 6.01-15.
3. Buildings above street wall height have a maximum building length of 50m.
4. Floor plates are flexible and allow adaption for multiple configurations or uses.

Table 6.01-3: Maximum building depth and floor plate size

<table>
<thead>
<tr>
<th>Building typology</th>
<th>Floor plates affected</th>
<th>Maximum GFA per floor</th>
<th>Maximum building depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus style commercial building</td>
<td>All floor plates Honeysuckle</td>
<td>2500m²</td>
<td>25m</td>
</tr>
<tr>
<td>Commercial tower</td>
<td>Above street wall height</td>
<td>1200m²</td>
<td>25m</td>
</tr>
<tr>
<td>Residential tower</td>
<td>Above street wall height</td>
<td>900m²</td>
<td>18m</td>
</tr>
</tbody>
</table>
**Performance criteria**

A4.2. Buildings achieve good internal amenity with minimal artificial heating, cooling and lighting.

**Acceptable solutions**

1. Workspaces in office buildings achieve adequate natural light. Design solutions include windows, atria, courtyards or light wells and by locating workspaces within 10-12m from a window or daylight source.

2. Consider opportunities to incorporate natural ventilation for commercial and mixed use development. Design solutions include the use of cross ventilation or stack effect ventilation via atria, light wells or courtyards to reduce reliance on artificial sources.

**A5. Building exteriors**

The design of building exteriors create visual interest to the streetscape and unify developments of different styles and lot widths. Detailed architectural treatments, materials, finishes and colour have the potential to reference the history of the precinct and shape the future character of the area.

**Performance criteria**

A5.1. Building exteriors feature high quality design with robust materials and finishes.

**Acceptable solutions**

1. Materials and finishes complement the character of the precinct.

2. External walls are constructed of high quality and durable materials and finishes with low maintenance attributes such as face brickwork, rendered brickwork, stone, concrete and glass.

3. An exterior material and finishes sample board and schedule shall be submitted with development application to show the quality of the materials proposed.

**Performance criteria**

A5.2. Building exteriors make a positive contribution to the streetscape and public domain.

**Acceptable solutions**

1. Buildings are articulated to differentiate between the base, middle and top.
2. Visually prominent parts of buildings such as balconies, overhangs, awnings, and roof tops are of high design quality.

3. Roof lines are to be designed to create a visually interesting skyline with roof plant and lift overrun integrated into the overall architectural design of the building.

4. Facades do not incorporate large expanses of a single material, including reflective glass.

**Performance criteria**

A5.3. Building exteriors are designed to ensure a positive contribution to streets and public spaces.

**Acceptable solutions**

1. Building exteriors clearly define the adjoining streets, street corners and public spaces, designed with safety in mind and easy to navigate for pedestrians.

2. Where development exposes a blank wall a visually interesting treatment is applied to the exposed wall.

3. Balconies and terraces are provided where buildings overlook parks and squares to contribute to casual surveillance.

4. External building facade lighting is integrated with the design of the building and contributes to the character of the building and surrounding area.

**Performance criteria**

A5.4. Building exteriors respond to adjoining buildings.

**Acceptable solutions**

1. Adjoining buildings are considered in terms of:
   
   (a) appropriate alignment of building line, awnings, parapets, cornice lines and street wall heights
   
   (b) setbacks above street wall heights
   
   (c) selection of materials and finishes
   
   (d) façade proportions including horizontal or vertical emphasis

   (e) detailing of the interface with adjoining buildings.
A6. Heritage buildings

This section applies to the assessment of building or alteration work (including demolition) of heritage items listed in Schedule 5 of the Newcastle LEP 2012 that requires development consent.

Additional guidelines for development within Heritage Conservation Areas are provided in the Newcastle DCP 2012, Heritage Technical Manual, City of Newcastle Heritage Strategy and the Newcastle East Heritage Conservation Area City Character Area contained in Part 02 of this Development Control Plan.

Within the city centre there are numerous heritage items of state and local significance that reflect the city’s history and culture and make it unique. Retaining heritage buildings is an essential element in revitalising Newcastle.

The city centre contains a concentration of heritage items and streetscapes typified by late 19th and early 20th century buildings of between two and six storeys of a consistent scale, form and character. Many of these buildings have architectural emphasis at the skyline in the form of tower elements and parapet detail. The rich architectural detail of many heritage items is a distinctive characteristic of the Newcastle city centre.

Performance criteria

A6.1. Development conserves and enhances the cultural significance of heritage items.

Acceptable solutions

1. A heritage management report, prepared by a suitably qualified heritage specialist, ensures the proposal achieves this performance criteria.

2. New development is consistent with the strategic actions of the City of Newcastle Heritage Strategy and the principles of the Newcastle Heritage Policy 2013.

3. New development enhances the character and heritage significance of heritage items, heritage conservation areas, archaeological sites or places of Aboriginal heritage significance.

4. Views and sight lines to heritage items and places of historic and aesthetic significance are maintained and enhanced, including views of the Christ Church Cathedral, T&G Building, Newcastle Courthouse and former Post Office.
**Performance criteria**

A6.2. Infill development conserves and enhances the cultural significance of heritage items and their settings.

**Acceptable solutions**

1. Design infill development to respond to the scale, materials and massing of adjoining heritage items. Design solutions include:
   - (a) aligning elements such as eaves lines, cornices and parapets
   - (b) responding to scale proportion, pattern, form or rhythm of existing elements such as the structural grid
   - (c) complementary colours, materials and finishes.

2. Infill development responds to heritage items, historic streetscapes, contributory buildings and the public domain using best practice methods, design philosophies and approaches.

3. Archaeologically excavate and expose the item, and if possible, retain item in situ for permanent public display, allowing for sufficient set back to allow the item to be interpreted by the public. Where items cannot be retained in-situ ensure that the archival recording of the item is of sufficient standard that it can be used for interpretative purposes.

4. Prepare content which communicates and promotes the understanding of the historical context of the archaeological item and allow for content to be provided on an appropriate physical or digital platform.
**Performance criteria**

A6.3. Alteration and additions respond appropriately to heritage fabric and the items cultural significance.

**Acceptable solutions**

1. New building work and uses encourage adaptation that has minimal impacts and is low maintenance.

2. Internal and external alterations and additions are designed as a contemporary layer that is readily identifiable from the existing building, responding to but not mimicking its forms of architectural details. Design solutions include separating new work from old by:
   - (a) incorporating generous setbacks between existing and new fabric
   - (b) glazed voids between new additions and the existing building
   - (c) using shadow lines and gaps between old and new work
   - (d) using lighting, materials and finishes that enhance and reveal aspects of the heritage item.

3. Employ innovative design strategies to deal with existing physical aspects of heritage buildings that may not be ideal for the proposed new use. Design solutions may include:
   - (a) introducing generously sized voids to improve access to natural light and ventilation when building depth is greater than recommended.
   - (b) facilitate sunlight access in heritage items by using the full depth of rooms and introducing skylights and clerestory windows where ceiling heights are high.
   - (c) expose services, wall and ceiling framing, particularly in public areas and foyers, to reveal the significant internal fabric of heritage items.
   - (d) exposing, re-using and interpreting the fabric of existing interiors.

Image 6.01-29: The Grand Hotel in Newcastle, built in 1890, has been altered a number of times while retaining its historic integrity.

**Performance criteria**

A6.4. New building elements support future evolution of the heritage item

**Acceptable solutions**

1. Alterations are reversible and easily removed.

2. Primary and significant fabric is retained including structure.

3. New work is physically set-off the existing fabric.

4. Alterations and additions allow the ongoing adaptation of the heritage item in the future.
**Performance criteria**

A6.5. Employ interpretation treatments when altering, adapting or adding to a heritage item.

**Acceptable solutions**

1. Expose the fabric of heritage items by removing later additions that obscure and detract from heritage fabric.
2. Incorporate contemporary insertions in the building in a manner that allows the building layers to be readily identifiable and appreciated.
3. Provide interpretive treatments. Design solutions include:
   - (a) displays of artefacts and objects associated with the heritage item in foyers and public areas.
   - (b) public art that references the cultural significance of the heritage item.

**Performance criteria**

A6.6. Encourage new uses for heritage buildings.

**Acceptable solutions**

1. Employ innovative design strategies to enable heritage items and contributory buildings to accommodate new uses. Design solutions may include new building elements/additions that expand the existing envelope of the heritage building while still respecting and minimising impact on cultural significance.
2. Use innovative approaches to provide car parking where the provision of a basement or other onsite car parking is not possible. Design solutions include:
   - (a) allowing heritage building to provide less car parking than is normally required for that land use, or no car parking where not physically possible
   - (b) using car share schemes
   - (c) sharing space within existing nearby car parking structures

**Alternative solutions**

Key development controls or standards may need to be varied for adaptive re-use residential projects to facilitate appropriate heritage responses and development viability.

Standards and controls that may need to be varied relate to:
- building and room depths
- building separation
- visual privacy
- deep soil requirements
- car parking requirements
- common circulation in apartment buildings
A7. Awnings

Awnings increase the usability and amenity of public footpaths by protecting pedestrians from sun and rain. They encourage pedestrian activity along streets and in conjunction with active edges, such as retail frontages, support and enhance the vitality of the local area. Awnings, like building entries, provide a public presence and interface within the public domain and contribute to the identity of a development.

**Performance criteria**

A7.1. Awnings provide shelter for public streets where most pedestrian activity occurs.

**Acceptable solutions**

1. Continuous street frontage awnings or weather protection to entrances are provided for all new developments in areas requiring an active frontage on Figure 6.01-25 (B3 Active street frontages).

2. Awnings are continuous to ensure pedestrian amenity.

**Performance criteria**

A7.2. Address the streetscape by providing a consistent street frontage in the City Centre.

**Acceptable solutions**

1. Awnings are generally flat or near flat and similar to the prevailing awning of each particular streetscape and in keeping with the design of the building.

2. Awnings that break the continuity of the edge fascia with strongly geometrical forms such as triangular or barrel vaulted shapes are avoided.

3. First floor verandahs are permitted in the East End and Newcastle East Character Areas where they are designed to be sympathetic with the overall form, proportion and division of bays of the buildings to which they are attached.

4. Awnings attached to residential terraces are designed in a manner that responds to the division of buildings into vertical bays.
A8. Design of parking structures

On-site parking includes underground (basement), surface (at-grade) and above ground parking, including parking stations. Underground and semi-underground parking minimises the visual impact of car parks and is an efficient use of the site, which creates the opportunity to increase communal and private open space.

High water table and mine subsidence and the impact of these on development feasibility means that above ground car parking structures are often the only way to accommodate on-site parking in Newcastle. A well designed car parking structure is an opportunity to introduce innovative design to the city, whether it is a new build, freestanding, retrofit or part of an integrated mixed use development.

Parts of Newcastle city centre are flood prone. In these areas, if basement car parking is provided, it should be designed to minimise the potential for inundation during a flood event.

Note: Traffic, parking and access controls for the city centre are covered by Newcastle DCP 2012 Section 7.03. This section contains additional provisions for managing the visual impact of car parking in the city centre.

Performance criteria

A8.1. At-grade or above-ground parking structures are well designed.

Acceptable solutions

1. Proposed at-grade or above-ground parking structures whether freestanding or part of larger developments in the city centre are to be reviewed and endorsed by Council’s Urban Design Consultative Group prior to be lodged for development consent as:

   (a) having fulfilled the requirements of Newcastle DCP 2012 Section 7.03.04 Clause B Parking areas and structures

   (b) being well designed and well integrated with the streetscape and ground plane of the particular site and minimise the visual impact of parking structures

   (c) Consultative Group confirms that development meets the performance criteria.
Performance criteria

A8.2. Minimise the visual impact of at grade or above-ground parking structures.

Acceptable solutions

1. All parking is provided within the building footprint either within basements or well integrated into the building’s design using materials and architectural façade treatments that are common to the rest of the development.
2. Where on-site parking cannot be provided within the building footprint it is located to the side or rear and not visible from the primary street frontage.
3. Access to above ground car parking is located in side or rear streets or lanes.
4. At-grade or above-ground car parking is screened from view from public spaces. Design solutions include:
   (a) green walls and roofs
   (b) solar panels incorporated into screens and awnings over car parking
   (c) architecturally designed façade treatments that incorporate artworks
   (d) using car park roof tops for community facilities such as tennis courts
   (e) sleeved by active and/or other uses as per Figure 6.01-16 and Figure 6.01-17.

Performance criteria

A8.3. Basement car parks are designed to provide protection against flooding.

Acceptable solutions

1. The design of entry ramps, ventilation points and pedestrian exits prevents water entering the basement until the last possible moment in a flood event, as shown in Figure 6.01-18. Design solutions include warning signage of the hazard and the route to safe refuge affixed in prominent locations.

Figure 6.01-17: Diagram showing sleeved car parking
Figure 6.01-18: Diagram showing screened car parking

Figure 6.01-19 Basement ramp design to minimise inundation
A9. Landscaping

Performance Criteria

A9.1 New development incorporates landscaping and communal open space that respects the desired character of the streetscape, adjoining land and public spaces.

Acceptable solutions

1. Landscaping and communal open space is provided having regard to the desired streetscape character, building setbacks and relationship to public open space.

2. Landscaping on upper levels and roof tops through the use of roof and wall gardens is encouraged in compliance with Section 7.02.07 Green walls and roof space.

3. Private open space areas which adjoin public open space complement the landscape character of the public open space.

4. Residential buildings in the city centre do not require the provision of a deep soil zone.
B. Public domain

B1. Access network

Streets and lanes provide pedestrian and vehicle connections through the city at all hours. The structure of the access network determines how permeable movement is through the city. Pedestrian activity can be encouraged by developing a fine-grain, connected and legible street and lane network that integrates pedestrians, cycling and public transport.

The promotion of active transport (walking and cycling) increases activity in the city centre by increasing the opportunities for people to move around. More activity equates to a higher retail spend. Active transport promotes well-being and reduces the environmental impacts of congestion. It is critical that streets and bike networks are safe, attractive and well connected to promote active transport.

Performance criteria

B1.1 Streets prioritise pedestrian, cycling and public transport users to support sustainable travel behaviour.

Acceptable solutions

1. Improved and new pedestrian connections are as shown in Figure 6.01-19 and are designed in accordance with the City Centre Public Domain Technical Manual.
2. Sites with a street frontage 100m or greater incorporate additional pedestrian connections to improve access and permeability.
3. New pedestrian connections are within comfortable walking distance to public transport.
4. Streets and lanes are connected to encourage pedestrian use.
5. Way finding signage is incorporated and clearly defined.
Figure 6.01-20: Network Access Map
**Performance criteria**

**B1.2** Lanes, through-site links and pedestrian paths are retained, safe and enhanced to promote access and public use.

**Acceptable solutions**

1. Retain existing laneways
2. New streets, lanes, through-site links and pedestrian paths are provided as shown in Figure 6.01-19 and designed in accordance with the City Centre Public Domain Technical Manual.
3. Lanes and through-site links maintain clear sight lines from each end.
4. Dead-ends or cul-de-sacs are avoided. Where they exist they are extended to the next street, where possible. Where unavoidable, way finding signage should be provided.
5. Pedestrian bridges are avoided over public spaces, including lanes.
6. Development adjacent to a lane or pedestrian path includes:
   (a) active uses at the ground level
   (b) appropriate lighting
   (c) access for service vehicles if necessary.
7. Streets, lanes and footpaths include lighting and illumination in accordance with the requirements of the City Centre Technical Manual.
8. Blank walls and solid fencing that inhibit natural surveillance and encourages graffiti should be avoided.

**Performance criteria**

**B1.4** Street and block network is permeable and accessible to promote pedestrian use.
Acceptable solutions

1. A permeable pedestrian network from the city centre to the foreshore is provided as shown in Figure 6.01-20.

2. Through-site connections on privately owned land:
   - Have a public character, are easily identified by users, safe, well lit, highly accessible and have a pleasant ambience;
   - Have a minimum width of 5m with no obstructions;
   - Have buildings which address the frontage and/or contain active uses to provide opportunities for natural surveillance.
   - Have clear and direct through-ways;
   - Are open to the sky and publicly accessible at all times;
   - Are clearly distinguished from vehicle access ways;
   - Align with breaks between buildings so that view corridors are extended and there is less sense of enclosure;
   - Do not contain structures such as electricity substations, carpark exhaust vents, swimming pools or the like);
   - Incorporate signage at street entries indicating public accessibility and the street to which the through-block connections ends; and
   - Are designed in accordance with the Crime Prevention Through Environmental Design principles.

3. Residential developments with a frontage to a through site link incorporate windows, doors and verandahs facing the through-site link at ground level.

4. Arcades in retail and commercial developments:
   (a) Are a minimum width of 3m; and
   (b) Include ground level active uses; and
   (c) Have access to natural light, and
   (d) Provide public access during business hours; and
   (e) Have clear connections to streets and lanes with a direct line of sight between entrances.

5. Pedestrian crossings are located to enable a direct line of travel for pedestrians.
6. Pedestrian-only public lanes are designed in accordance with the City Centre Technical Manual.

Performance criteria
B1.5 Public transport facilities are integrated into the access network.

Acceptable solutions
1. Pedestrian access to public transport stops is convenient, safe and accessible.
2. Light rail and bus stop locations are coordinated to enable convenient mode change, i.e. stops are located within walking distance from each other.
3. Cycling routes and cycle parking are coordinated and integrated with the location of public transport stops to enable convenient mode change.
4. The design of public transport facilities has regard to Crime Prevention through Environmental Design Principles.

Performance criteria
B1.6 Cycle routes are safe, connected and well-designed.

Acceptable solutions
1. Separated cycle ways are provided on Hunter Street as shown in Figure 6.01-19 and designed in accordance with the City Centre Technical Manual.
2. Cycle ways are connected into the network indicated in the City of Newcastle Cycling Strategy and accessible to public transport stops.
3. Safety is maximised through active street frontages. Buildings that adjoin pedestrian and cycle paths are designed to address the path and provide passive surveillance opportunities.
4. Signage should be provided along cycle routes identifying key destinations, transport stops, bicycle parking, travel times and distances.
5. Commercial development includes end of trip cycling infrastructure. Design solutions include:
   (a) secure bike parking
   (b) shower and change room facilities.
B2. Views and vistas

Preserving significant views around the city is critical to place-making, wayfinding and for retaining the unique character of Newcastle. Significant views include views from public places towards specific landmarks, heritage items or areas of natural beauty. The most important views in Newcastle tend to be along streets leading to the water or landmark buildings, including Christ Church Cathedral and Nobby’s Head.

With the redevelopment of the former rail corridor lands, key views and vistas are to be established and will create a visual connection and link the city to the foreshore.

Figure 6.01-23: View axis to Christ Church Cathedral

Performance criteria

B2.1 Public views and sight lines to key public spaces, the waterfront, prominent heritage items and landmarks are protected.

Acceptable solutions

1. New development protects the views nominated in Figure 6.01-23.
2. New development in the vicinity of views to Christ Church Cathedral nominated on Figure 6.01-23 must ensure that vistas of the Cathedral’s tower, roof-scape and pinnacles of the buttresses are preserved.
3. Open space and breaks in the built form align with existing streets and view corridors as identified in Figure 6.01-23.
4. A visual impact assessment accompanies the application and confirms that this performance criteria has been met.
Figure 6.01-24: Views and Vistas Map
**Performance criteria**

B2.2 New development achieves equitable view sharing from adjacent development.

**Acceptable solutions**

1. Align new development to maximise and frame view corridors between buildings, taking into account topography, vegetation and surrounding development.

2. Where there is potential impacts on views an assessment of the following principles should be submitted with the application:

   (a) the views to be affected

   (b) what part of the property the views are obtained

   (c) the extent of the impact

   (d) the reasonableness of the proposal that is causing the impact.

---

**Note: Visual Impact Assessments**

A visual impact assessment identifies and analyses the affected views in their existing state, includes photomontages of the view once the proposed development is in place and then assess the impact on that view.
B3. Active Street Frontages

Active street frontages promote an interesting and safe pedestrian environment. Shops, studios, offices, cafes, recreation and community facilities provide the most active street fronts. Residential buildings can contribute positively to the street by providing a clear street address, direct access from the street and outlook over the street.

Performance criteria

B3.1 In identified activity hubs, ground floor uses add to the liveliness and vitality of the street.

Acceptable solutions

1. Active frontages are a minimum 70% of the primary street frontage. They have transparent glazing to allow unobstructed views from the adjacent footpath to at least a depth of 6m within the building.

2. Active frontages are to be provided in activity nodes:
   (a) in the locations shown in Figure 6.01-24
   (b) on through block links, pedestrian only lanes and arcades
   (c) on all other streets where possible.

3. New development:
   (a) maximises entries or display windows to shops and/or food and drink premises, customer service areas and activities which provide pedestrian interest and interaction.
   (b) minimises fire escapes, service doors, car park entries and plant and equipment hatches and grilles, to the active frontage
   (c) provides elements of visual interest such as display cases, or creative use of materials where fire escapes, service doors and plant and equipment hatches cannot be avoided.
   (d) provides a high standard of finish for shop fronts.
   (e) avoid blank walls that inhibit natural surveillance and encourage graffiti.

4. Street frontages are activated through one or more of the following:
   (a) retail and shop fronts
   (b) cafés or restaurants
   (c) active office uses, visible from the street
   (d) public building or community facilities where activities inside the building are visible from the street
   (e) entries and lobbies
   (f) multiple entries for residential buildings
   (g) uses that overlook the street
(h) uses that screen or sleeve car parks to a minimum;

(i) avoiding porte cochères

5. Ground levels of buildings in commercial core and mixed zones have a minimum 4m floor to ceiling height on the ground floor to ensure flexibility for a variety of active uses.

6. Foyer and lobby spaces are no more than 20% of the street frontage where active frontages are required as shown in Figure 6.01-24, or no more than 8m of a street frontage elsewhere.

7. The ground floor level is at the same level as the footpath.

8. Shopfronts are enclosed, unless they are food and drink premises.

9. Security grills, where provided, are fitted internally behind the shop front, are fully retractable and at least 50% transparent when closed

10 Active uses in existing and new laneways are encouraged.

Image 6.01-45: Cafes and restaurants enliven the street edge.
Figure 6.01-25: Active Street Frontages Map
B4. Addressing the street

Addressing the street relates to all development outside the "active frontage areas" shown on Figure 6.01-24 or where a continuous 'active frontage' cannot be achieved.

A positive building address to the street contributes to the safety, amenity and quality of the public domain. The way buildings interface with the public domain also has a direct influence on the urban character of the city. It defines the relationship between the building and the street edge and can determine how accessible and functional a building is. All development adjoining the public domain needs to be well designed, using high quality durable materials.

Performance criteria

B4.1 Buildings positively address streets, footpaths, lanes and other public spaces.

Acceptable solutions

1. Acceptable design solutions include:
   (a) maximise the number of entries onto the street
   (b) ground floor internal uses are visible from the street
   (c) building name and / or street number signage is well designed and easily identifiable
   (d) well lit building entries
   (e) well designed efficient external lighting to non-residential buildings
   (f) building frontages to incorporate Crime Prevention through Environmental Design entries are at the same level as the adjacent footpath on sites not flood affected
   (g) finished floor levels are no greater than 500mm above or below the adjacent footpath or public domain
   (h) finished floor levels are no greater than 1.2m above the adjacent footpath or public domain on sites with a cross fall of greater than 1 in 10
   (i) high quality finishes and public art that is visible from the public domain
   (j) opportunities for direct surveillance from the building to the adjacent street
   (k) ground floor residential uses can be elevated up to 1.0m above ground level for privacy.
**Performance criteria**

B4.2 Ground levels are designed to mitigate flood risk while ensuring accessibility and a positive relationship to the public domain.

**Acceptable solutions**

1. Equitable access to a building is provided where the lowest level is elevated above the flood planning level.

2. Locate accessibility ramps from the footpath to the lowest level of buildings above the flood planning level so that a positive address to the street and activated frontages are maintained.
B5. Public artwork

Public art is a defining quality of dynamic, interesting and successful cities. More public artworks are needed in private developments and in the public domain. Public art can be integrated with essential infrastructure, such as stormwater treatment and water collection or aboveground car park screening.

**Performance criteria**

B5.1 Significant development incorporates public artwork.

**Acceptable solutions**

1. Public and civic buildings, development on key sites and development over 45m in height are to allocate 1% of the capital cost of development towards public artwork for development.
2. Council is consulted on the location and proposal for public art.

**Performance criteria**

B5.2 Artworks in new buildings are to be located so they can be appreciated from streets and public spaces.

**Acceptable solutions**

1. Design solutions include:
   
   (a) locating artworks in a public foyer so that they are visible from the street
   (b) integrating public artwork into the design of the building such as its façade or roof features
   (c) integrating public artworks with the delivery of essential open space infrastructure such as stormwater treatment or rainwater collection.

**Performance criteria**

B5.3 Public artworks are used to interpret heritage components or recognise former uses of large development sites.

**Acceptable solutions**

1. Work with a heritage consultant and/or a public artist to develop innovative ways to interpret heritage using public art.
B6. Sun access to public spaces

Good sun access is a key contributor to the amenity of public spaces, particularly during winter. Sun access in public spaces is becoming more important as more people move into apartments in the city centre. Good sun access ensures that public spaces such as squares and parks are inviting and well utilised. This section should be read in conjunction with section A1 Street wall heights and Part 3 Key precincts (where applicable).

**Performance criteria**

B6.1 Reasonable sunlight access is provided to new and existing significant public spaces.

**Acceptable solutions**

1. Sunlight access is provided to significant public spaces for at least 2 hours during mid-winter between 9am and 3pm, demonstrated by shadow diagrams. Significant public spaces in the city centre include:
   (a) Civic Park
   (b) Civic Link
   (c) Wheeler Place
   (d) Birdwood Park
   (e) Little Birdwood Park
   (f) Cathedral Park
   (g) Pacific Park
   (h) National Park
   (i) Christie Place
   (j) Fletcher Park
   (k) Church Walk Park.

Note: Shadow diagrams submitted with the development application are to indicate the existing condition and proposed shadows at each hour between 9am and 3pm on 21 June. Shadow diagrams are not to include vegetation. If required, the consent authority may require additional detail to assess the overshadowing impact.
B7. Infrastructure

**Performance Criteria**

B7.1 Stormwater, water and sewerage infrastructure is integrated into each site and does not create negative off-site impacts.

**Acceptable Solutions**

1. Drainage, overland flow paths and infrastructure easements are generally as shown in Figure 6.01.26
2. Stormwater management facilities comply with Section 7.06 Stormwater of this DCP.
3. New development has water and sewer links into the existing network with suitable capacity.

B8. Site Amalgamation

To prevent the isolation and fragmentation of former rail corridor land, sites between Worth Place and Darby Plaza should conform to the amalgamations shown in the Figure 6.01-26.

**Performance Criteria**

B8.1 Former rail corridor land is amalgamated with adjoining land to create useable sites that are consistent with the desired character of the area.

**Acceptable Solutions**

1. Former rail corridor lands identified in the Figure 6.01-26 are wholly or partially amalgamated with the adjoining land to the north or to the south.
2. The former rail corridor lands are subdivided by an east/west and/or north/south split, to create an amalgamated lot.
3. Potential amalgamated site 1 shown on Figure 6.01-26 does not mean all sites need to be amalgamated but rather a combination of sites that utilises the former rail land effectively.
4. The amalgamation of former rail corridor lands identified in the 'Amalgamated Parcels Map' does not result in the creation of an isolated lot unless it is demonstrated that:
   (a) The orderly, economic use and development of separate sites can be achieved; and
   (b) The lots are of a suitable size and dimensions to facilitate new development that is consistent with the desired character of the area; and
   (c) The Planning Principles outlined by the NSW Land and Environment Court for redevelopment resulting in isolated sites are satisfied.
Figure 6.01-26: Infrastructure Plan
Figure 6.01-27 Amalgamated Parcels Map
6.01.04 Key Precincts

A. Overview

Seven key precincts have been identified within the Character areas of Newcastle's city centre. They are:

- Hunter Street Mall
- Wheeler Place
- Birdwood Park
- Civic Link
- Darby Plaza
- Hunter Street Live-work units
- Newcastle Station and Foreshore Park

These seven key precincts have their own set of objectives and performance criteria designed to achieve specific outcomes related to particular development and public domain opportunities of that precinct. These specific performance criteria and acceptable solutions must be considered in addition to the general controls in this section.

The key precinct guidelines in this section prevail over the more general guidelines in Section 6.01.03 in the event of any inconsistency.
Figure 6.01-28: Key Precincts

1. Hunter Street Mall
2. Wheeler Place
3. Birdwood Park
4. Civic Link
5. Darby Plaza
6. Hunter Street
7. Newcastle Station
8. Multipurpose Community Space
B. Hunter Street Mall

Figure 6.01-29: Hunter Street Mall Precinct

Existing character

The Hunter Street Mall precinct contains a mix of uses and building types. In its centre is the former Hunter Street Mall (between Perkins and Newcomen Streets), a shared street for pedestrians and vehicles and is becoming a popular destination for a variety of activities including specialty retail, dining, entertainment, nightlife and events. The precinct is rich in cultural heritage with views of Christ Church Cathedral. Access to the foreshore is currently constrained.

Future character

This precinct has the potential to develop as boutique pedestrian-scaled main street shopping, leisure, retail and residential destination. Infill development is encouraged that promotes activity on the street and which responds to heritage items and contributory buildings. Views to and from Christ Church Cathedral and the foreshore are retained and enhanced. Foreshore access is improved.
Objectives

1. Strengthen the sense of place and urban character of the east end as a boutique retail, entertainment and residential destination.
2. Diversify the role of Hunter Street Mall precinct as a destination for many activities including retail, dining, entertainment, nightlife and events, additions to regular day-to-day services for local residents.
3. Promote active street frontages.
4. Protect heritage items and contributory buildings.
5. Protect views to and from Christ Church Cathedral.
6. Promote a permeable street network in Hunter Street Mall precinct with well connected easily accessible streets and lanes.
7. To create a space that is safe, comfortable and welcoming for pedestrians.

Image 6.01-52: Potential public domain upgrades to Hunter Street Mall (Impression: JND Design 2012)

Performance criteria

B1 Pedestrian permeability and amenity is improved.

Acceptable solutions

1. New lanes and through-site links are provided in the locations identified in Figure 6.01-28. They are designed in accordance with the Public Domain section of this Development Guide and the City Centre Technical Manual.
2. New links include:
   (a) a continuous pedestrian connection between Newcomen and Perkins Streets mid block between Hunter and King Streets.
   (b) a minimum 3m wide pedestrian only link between Newcomen and Laing Streets connected to the Laing Street alignment.
(c) a new pedestrian link or arcade between Thorn and Wolfe Street.
(d) a pedestrian connection between Morgan and King Street.

**Performance criteria**

B2 Significant views and protected (refer to section B3).

**Acceptable solutions**

1. Development between Thorn and Morgan Street provides an opening on the Market Street alignment to preserve views of Christ Church Cathedral.

**Performance criteria**

B3 Building form integrates with existing heritage character and retains contributory buildings.

**Acceptable solutions**

1. Street wall heights ensure a minimum two hours of sunlight between 9am and 3pm in mid-winter to the southern side of Hunter Street.
2. Large scale new development is articulated so that large expanses of building form are broken down into smaller elements to relate to the fine grain of the precinct.
3. Retain and adaptively re-use existing character buildings that are not heritage items but contribute to the historic identity of the precinct.

**Performance criteria**

B4 Hunter Street is a pedestrian and vehicular thoroughfare and a place of activity.

**Acceptable solutions**

1. Remove existing lightweight and concrete freestanding awnings structures.
2. Define clear pedestrian spaces along the fronts of buildings.
3. Provide a centrally located one way share-way for vehicles with threshold treatments between Perkins and Newcomen Streets.
4. Provide limited short stay car parking with priority given to accessible parking spaces.
5. Provide a centrally located space that is relatively clear of obstructions that can be used for special events.
6. Remove the pedestrian bridge along Market Street to promote connections to the waterfront and future light rail stops.
7. Integrate Market Street into the mall using common public domain materials and treatments.
8. Provide additional street trees, new street furniture, new lighting, bike rings and way finding signage.

**Performance criteria**

B5 Servicing and access is designed to minimise conflicts with pedestrians.
**Acceptable solutions**

1. Hours for service deliveries from Hunter Street are restricted to minimise potential conflicts with other activities.
2. Vehicle access and servicing is located to minimise conflicts with pedestrians.
3. Loading docks and their access points are not located on Hunter Street.

*Figure 6.01-30: Section through the former David Jones building, showing a proposed connection terminated by the view of Victoria Theatre.*
C. Wheeler Place

Figure 6.01-31: Wheeler Place Key Precinct

Existing character

The Wheeler Place precinct contains the primary administrative and cultural facilities of Newcastle. These facilities reflect Newcastle’s importance as a major regional city and include the City of Newcastle Administration Building, Newcastle Courts Complex, Newcastle Art Gallery, Civic Theatre and City Hall. The precinct also contains major public open space in the form of Wheeler Place and Civic Park.

Future character

The civic importance of the precinct will be reinforced by improving pedestrian access through the precinct and linkages to Newcastle Museum and the foreshore in the north and Darby Street to the
east. Major new education facilities will be provided through the redevelopment of the Civic Arcade site for new faculties for the University of Newcastle.

**Objectives**

1. Promote Wheeler Place precinct as the civic, administrative, education and cultural heart of Newcastle.
2. Promote a permeable street network and enhance pedestrian connections to Newcastle Museum and the foreshore in the north and Newcastle Art Gallery and Darby Street to the south via Wheeler Place and Civic Park.
3. Promote active frontages to streets and public spaces along the pedestrian route through the precinct.
4. Protect heritage items and contributory buildings.
5. Protect sunlight to Christie Place, Wheeler Place, Civic Park and the southern side of Hunter Street.

*Image 6.01 1-53: Potential public domain upgrades to Wheeler Place (Impression: JMD Design)*

**Performance criteria**

C1 Pedestrian permeability and amenity is improved.

**Acceptable solutions**

1. New lanes and through-site links are provided as shown in Figure 6.01-30.
2. The pedestrian crossing on Hunter Street linking Wheeler Place and Civic Link is enhanced by increasing the width of the crossing.
3. A new through site-link or arcade from Christie Place to Hunter Street is provided.
4. A new through-site link or arcade is provided from Christie Street to Auckland Street.
5. New development provides an address to Christie Place with active frontages.
Performance criteria

C2 Building form integrates with existing heritage character and retains contributory buildings.

Acceptable solutions

1. Redevelopment of the former Civic Arcade site on the corner of Hunter and Auckland Street provides (as shown in Figures 6.01-31 and 6.01-32):
   (a) a slender tower located near the corner of Hunter and Auckland Streets, no wider than University House (former Nesca House)
   (b) ensure the clock tower of City Hall retains its prominence in the precinct
   (c) an appropriate curtilage is provided to Civic Theatre
   (d) protect sunlight access to Christie Place
   (e) a 6m setback to the tower from the rear façade of University House.

Performance criteria

C3 Wheeler Place is designed to support a range of uses and events.

Acceptable solutions

1. A light weight stage can be erected to host events in accordance with any adopted public domain plan of Council.
2. Wheeler Place is redesigned to improve pedestrian amenity by increasing shade and providing a water feature, seating and bike rings.
3. Bespoke street furniture, fixtures and public art is provided to distinguish Wheeler Place from other public places in Newcastle city centre and in accordance with any adopted public domain plan of Council.
4. A Water Sensitive Urban Design Strategy is developed for landscaping to sustainability manage stormwater.
5. The quality of public domain treatments is improved, with materials, finishes and fixtures, including bespoke fixtures and public art, selected in accordance with the performance standards and specifications of the City Centre Technical Manual.
Performance criteria

C4 Servicing and access minimises conflicts with pedestrians.

Acceptable solutions

1. Service deliveries are not to be made from Hunter Street for development which has access to another street frontage.
2. For development that has no other frontage than Hunter Street, hours for service deliveries are restricted to minimise potential conflicts with other activities.
3. Vehicle access and servicing is located to minimise conflicts with pedestrians.
4. Loading docks and their access points are not permitted on Hunter Street.

Figure 6.01-32: Section through Christie Place and the University site showing building form and setbacks.

Figure 6.01-33: Section through the University site showing building form and setbacks.
D. Birdwood Park

Figure 6.01-34: Birdwood Park Key Precinct

Existing character

The Birdwood Park precinct is the western gateway to Newcastle city centre and currently houses a range of uses including showroom and bulky goods retail, car dealerships and self storage. This precinct contains the major heritage assets, including the former brewery.

Birdwood Park is the primary open space but is currently surrounded by busy roads resulting in sub-standard amenity.
**Future character**

This precinct has the potential to become part of the future central business district of Newcastle. This is due to the location of the new transport interchange in the precinct. There is also a predominance of larger consolidated land holdings and fewer environmental and heritage constraints combined with generous floor space and height allowances. Improvements to streetscapes and Birdwood Park will raise the quality of the public domain, while adaptive re-use of the former brewery will enrich built form character in this precinct.

**Objectives**

1. Guide development that contributes to the realisation of a future commercial core.
2. Create a sense of arrival into the city centre from the western approach.
3. Promote active street frontages.
4. Protect heritage items and contributory buildings.
5. Promote a permeable street network in Birdwood Park precinct with well connected easily accessible streets and lanes.
6. Provide new public spaces and improve pedestrian amenity, particularly to Birdwood Park.
7. Improve Birdwood Park with a strong built edge and protecting sunlight access.

**Image 6.01-54: Potential transformation of King Street edge alongside Birdwood Park (Impression Arup, 2012)**

**Performance criteria**

D1  Pedestrian permeability and amenity is improved.

**Acceptable solutions**

1. New lanes and through-site links are provided in the locations identified in Figures 6.01-33 and 6.01-34. They are designed and constructed in accordance with the Public Domain section of this Development Guide and the City Centre Public Domain Technical Manual.
2. The design of the laneway network integrates with the ground floor uses of adjoining buildings and provides opportunities for external activities.

**Performance criteria**

D2 The bulk of building form is managed to promote good amenity for pedestrians and neighbouring buildings and to integrate well with heritage items and contributory buildings.

**Acceptable solutions**

1. Large scale new development is articulated so that large expanses of building form are broken down into smaller elements to reduce building bulk.

2. Taller buildings are set back from Hunter Street, to provide a gradual increase in scale from Hunter Street.

**Performance criteria**

D3 Public domain - promote Birdwood Park as the primary open space asset in the precinct.

**Acceptable solutions**

1. New development in the precinct ensures that a minimum of 3 hours of sunlight is provided to 50% of Birdwood Park between 9 am and 3pm on 21 June.

2. Reshape King Street, along Birdwood Park, as a shared pedestrian and vehicular street and a place of pedestrian activity by:
   (a) reducing the road carriageway to minimum widths to maximise space on the footpath for pedestrians, landscaping, public art or outdoor dining.
   (b) raising the level of the carriageway and marking the space with indicators to slow drivers and signal arrival into a shared space.
   (c) incorporating other traffic calming measures such as landscaping and low speed limits.
   (d) restricting service vehicle access at certain times of the day to allow for other activities.

3. Public domain works including tree planting, furniture, lighting and materials, is carried out in accordance with the City Centre Public Domain Technical Manual.

**Performance criteria**

D4 Servicing and access minimises conflicts with pedestrians.

**Acceptable solutions**

1. Service deliveries are not to be made from Hunter Street or Stewart Avenue for development which has access to another street frontage.

2. For development that has no other frontage than Hunter Street, hours for service deliveries are restricted to minimise potential conflicts with other activities.

3. Vehicle access and servicing is located to minimise conflicts with pedestrians.

4. Loading docks and their access points are not permitted on Hunter Street.
Figure 6.01-35: Section through the former brewery/regional museum site between Stewart Avenue and Wood Street.

Figure 6.01-36: Section though buildings fronting King Street and Birdwood Park showing 20m solar access plane setback.
E. Civic Link

**Figure 6.01-37: Civic Link Precinct**

**Existing character**

Civic Link Precinct sits within the Civic Character zone to the north of Hunter Street and is bound by Workshop Way and Merewether Street. The Precinct encompasses the former Civic Station and railway corridor, and the Newcastle Museum.

**Future character**

This part of the city is intended to form part of the civic heart of Newcastle and will provide an important link between some of the region’s most important civic and cultural assets, including Civic Park, City Hall, Civic Theatre, Newcastle Museum and the foreshore.

The focus on Civic is to leverage the best value from new investments by creating open space and walking and cycling connections that link Newcastle’s civic buildings to the waterfront and the light rail system.

Creating a new civic focused public space, linking Hunter Street to the museum will provide a direct visual and physical connection from Wheeler Place to the harbour and meet the needs of the incoming populations.

**Objectives**

1. Provide a new public space that links the civic, administrative, education and cultural heart of Newcastle to the foreshore.
2. Guide development surrounding the new Civic Link and along Civic Lane that contributes to the realisation of the area as the civic heart of Newcastle.
3. Promote a permeable street network and enhance pedestrian connections from Hunter Street to the foreshore.
4. Promote active frontages to streets and public spaces.
5. Respect heritage items and contributory buildings.
**Performance Criteria**

**E1.** Civic Lane provides an accessible, attractive link between Civic Link/Hunter Street and Wright Lane/Workshop Way. Vehicular and service access to the properties on the northern side of Hunter Street and the new developments between Civic Lane and Wright Lane is from Civic Lane.

**Acceptable solutions**

1. Civic Lane provides vehicular access, including basement carpark access to properties on the northern side of Hunter Street and the new developments between Civic Lane and Wright Lane.

2. Civic Lane provides one-way vehicular movement in an east to west direction with an entry via a shared way through Civic Link onto Hunter Street.

3. A minimum 1.2m wide footpath is provided on the southern side of Civic lane.

4. Consolidated access points are provided to building lots along Civic Lane to reduce the dominance of driveways.

5. Pedestrian access along the northern side of Civic Lane is integrated within the building setback of the associated development.

**Performance criteria**

**E2.** Pedestrian permeability and amenity is improved by the connection of the Wheeler Place Key Precinct through Honeysuckle to the waterfront.

**Acceptable solutions**

1. New lanes and open pedestrian links are provided in the locations identified in Figure 6.01-36.

2. New or enhanced links include:
   a. Direct pedestrian connection between Hunter Street and Wright Lane / Honeysuckle Drive.
   b. A minimum 4.5m wide pedestrian only link on the northern side of the former railway corridor between Civic Link and Merewether Street.
A minimum 8m wide vehicular accessway adjoining the southern boundary of the former railway corridor accessed from Merewether Street.

**Performance Criteria**

E3. Servicing and vehicular access minimises conflicts with pedestrians.

**Acceptable solutions**

1. Service deliveries and garbage collection hours are restricted to minimise potential conflict with pedestrians and other activities within the shared zone of the Civic Link open space.
2. Vehicle access and servicing to the sites adjoining Civic Lane is provided from Civic Lane to minimise conflicts with pedestrians.

**Performance Criteria**

E4. The bulk of building form is managed to achieve good amenity for pedestrians and neighbouring buildings, and to respect and integrate well with nearby heritage items and contributory buildings.

**Acceptable solutions**

1. New development is articulated so that large expanses of building form are broken down into smaller elements.
2. Taller buildings are set back from Civic Link, to provide a gradual increase in scale along the former railway corridor from Civic Link to the east and from Civic Link to the west.
3. Street wall heights ensure a minimum two hours of sunlight between 9am and 3pm in mid-winter to at least 50% of the Civic Link open space.
4. Buildings facing Civic Link include prominent architectural features or design on corners.
5. Buildings with a secondary frontage to a laneway incorporate setbacks that enable ground floor active uses, vehicular access and off-street loading zones. Upper level setbacks enable compliance with the Apartment Design Guide.
6. A reduced setback above the street wall height of 3m may be appropriate within sites bounded by Civic Link and Merewether Street.

*Figure 6.01-40: Civic Link Section View Wheeler Place to Newcastle Museum*
F. Darby Plaza

Figure 6.01-41: Darby Plaza Key Precinct

Existing character
Darby Street is the main dining centre of Newcastle and offers a mix of shops, cafes and restaurants and night life. At present Darby Street ends at the intersection with Hunter Street.

Future character
Darby Plaza will form a new community focused public space, providing a pedestrian and cycle connection from Hunter Street to the harbour.

Objectives
1. Provide new open space and improve pedestrian amenity.
2. Promote a permeable street network and enhance pedestrian connections from Darby Street to the foreshore.
3. Promote active street frontages.
4. Respect heritage items and contributory buildings.
5. Provide a strong built edge to Darby Plaza and create an integrated space between the public and private land.
Performance criteria

F1. Pedestrian permeability and amenity is improved with the capacity to generate safe public movement from Darby Street and Argyle Street to the waterfront.

Acceptable solutions

1. Adjacent mixed use development provides active frontages to both Hunter Street and the new Darby Plaza with active ground floor uses and natural surveillance from floors above.
2. Extension of view corridors from the eastern side of Darby Street and Argyle Street improves lines of sight increasing safety and wayfinding.

Performance criteria

F2. Darby Plaza supports a range of uses and activities and is edged by mixed use development along the western edge including active ground floor uses.

Acceptable solutions

1. Buildings adjoining Darby Plaza incorporate a ground floor setback from Darby Plaza as shown in Figure 6.01-40, which aligns with the eastern side of Darby Street.
2. Buildings adjoining Darby Plaza are designed to integrate into the public open space.

Performance criteria

F3. Servicing and access minimises conflicts with pedestrians.

Acceptable solutions

1. Vehicular access and servicing is from Argyle Street via a shared way within Darby Plaza and located so as to minimise and manage potential conflicts with pedestrians.
2. Hours for service delivery are restricted to minimize potential conflicts with pedestrian activities within the plaza.

Performance criteria

F4. Significant views are strengthened (refer to Section B2 View and vistas).

Acceptable solutions

1. Buildings adjoining Darby Plaza complement the view corridor through Darby Plaza.

Figure 6.01-42 Section through Darby Plaza
G. Hunter Street Live-Work Units

Existing Character

Hunter Street features some of Newcastle’s best heritage buildings and offers a mix of shops, cafes, restaurants and other local businesses.

The former rail line ran directly to the northern edge of Hunter / Scott Streets between Crown and Newcomen Streets creating a poor and inactive interface. The former rail corridor at this location is heavily overshadowed by the existing commercial and residential buildings fronting Wharf Road.

Future Character

New mixed use development, greater pedestrian priority and future transport improvements contribute to the potential for Hunter Street / Scott Street to be strengthened as Newcastle’s ‘main street. Infill development is encouraged on the northern side of Hunter Street between the alignments with Crown and Brown Streets to promote activity and improve the pedestrian interface and street edge definition. New built form at this location is sensitively scaled to allow for the maintenance of significant view lines from the adjoining residential apartments to the north. It is envisaged that this site, will be suitable for live-work style units fronting onto Hunter Street with ground floor commercial retail or office uses.
Objectives
1. Improve the pedestrian interface and street edge definition of Hunter Street.
2. Promote active street frontages.
3. Respect heritage items and contributory buildings.
4. Ensure development responds to and respects the amenity of adjoining residential development.

Performance criteria
G1. Hunter Street is strengthened as Newcastle’s ‘main street.’

Acceptable solutions
1. Active ground floor frontages supporting small office or retail uses are created along Hunter Street.
2. Built form is scaled to maintain a comfortable, human scaled streetscape.
3. Pedestrian amenity and walkability is enhanced by the provision of wide footpaths.
4. Windows and balconies overlook Hunter Street increasing natural surveillance and sense of safety.

Performance criteria
G2. The built form is appropriate to the land size and dimensions, provides streetscape definition and activation, minimises amenity impacts to and respects views from adjoining residential apartments.

Acceptable solutions
1. New development in this section of Hunter Street:
   (a) Incorporates active uses at ground level,
   (b) Provides individual pedestrian entries off Hunter Street,
   (c) Is of good quality contemporary design that complements nearby terrace development; and
   (d) Avoids monotonous design by incorporating articulation and a variety of materials and colours
2. New development respects views from the adjoining residential apartments located to the north of the former rail corridor, through the use of appropriate setbacks, building heights, roof form and building articulation.

Note: The NSW Land and Environment Court Planning Principle describes the process for assessing view impacts and will need to be considered in the design of the development.

4. New development incorporates upper level setbacks on the northern side to achieve the separation distances detailed in the Apartment Design Guide, minimise amenity impacts to and respect views from adjoining residential apartments.
5. Continuous street frontage awnings do not need to be provided in areas requiring an active frontage on Figure 6.01-42.
**Alternative Solutions**

- Alternate forms of development that are compatible with the narrow site width and surrounding development may be considered on the site.

**Performance criteria**

G3. Vehicular access and servicing minimises conflicts with pedestrians

**Acceptable solutions**

1. Vehicle access and car parking is provided via a rear laneway from Argyle Street.
2. A 10m Vehicle turning head is provided at the eastern end of the rear access lane to allow vehicles to exit the site to Argyle Street.

**Alternative Solutions**

- The laneway may be extended north at the eastern end to link with Wharf Road.

**Performance Criteria**

G4. Live Work Units provide adequate parking accessed from the laneway.

**Acceptable Solutions**

1. Required car parking may be provided within the access laneway, rather than individual lots.
2. Variation to car parking rates may be considered in accordance with Section 7.03 Traffic, Parking and Access.

**Performance Criteria**

G5. New development respects and maintains heritage items - AA Company Abutment and Bridge

**Acceptable Solutions**

1. New development incorporates sufficient setbacks from the AA Company Bridge abutment so that it is retained in situ for permanent public display.
2. A physical interpretation is prepared which communicates and promotes the understanding of the historical context of the AA Company Bridge Abutment and its relationship to the early railways. The interpretation allows for content to be provided on an appropriate physical or digital platform.
**Alternative Solutions**

- If the bridge abutment cannot be retained in situ, options for its removal and re-installation where it can be kept on public display are to be developed in consultation with Newcastle City Council.

**H. Newcastle Station and Foreshore Park**

*Figure 6.01-45: Newcastle Station and Foreshore Park*

![Map of Newcastle Station and Foreshore Park]

**Existing character**

Newcastle Railway Station, built in 1859, has State heritage significance due to its historical associations with the Great Northern Railway as its second terminus.

The Station site is central to Foreshore Park, located along Wharf Road, which provides vast open space for activities, recreation and community uses.

**Future character**

The Newcastle Railway Station forms a key position in the development of the urban environment in this part of the city, including views of the building itself and key built forms in its surrounds. The space between the platforms has historically been naturally lit and this should be considered in the redevelopment, as a way of retaining the history of the item as a station.

The future character of Newcastle Station and Foreshore Park Key Precinct will fully respect and celebrate the heritage integrity of the Station, and could accommodate a range of different activities including community, tourism, retail, leisure and commercial uses.
Newcastle Railway Station is proposed to be repurposed into a hallmark destination, retaining and adapting the heritage character with a mix of uses and providing a focal point for the East End. It will accommodate enterprises and activities that attract visitors, activate the area and stimulate the economy.

The future use of the station will be supported and enhanced by the expansion of the Foreshore Park to the west of the station. Development adjoining this area will complement and support the use of this area as an event space.

**Objectives**
1. Provide a new focal point for the community in the East End.
2. Promote a permeable street network and enhance pedestrian connections from Hunter Street to the foreshore.
3. Promote active frontages to streets and public spaces.
4. Respect heritage items and contributory buildings.

**Performance Criteria**

**H1.** Newcastle Station and Foreshore Park is a regional tourist and leisure destination for both residents and tourists.

**Acceptable Solutions**
1. Improve pedestrian permeability and amenity by providing a link from Scott Street between the significant Station buildings to the foreshore.
2. Protect the heritage and history of the Newcastle Station through its adaptive re-use.
3. Create a public open space area that is safe and well-utilised.
4. Promote the Foreshore Park as a regional open space asset.
5. The built form and land use considers noise impacts on nearby residential uses.
6. The built form of the Newcastle Station buildings provides frontages to Scott Street and to the north facing Foreshore Park.
7. View corridors identified in Figure 6.01-23 are retained.

**Performance Criteria**

**H2.** The Newcastle Railway Station group of buildings integrate with the public domain and encourage pedestrian access and permeability.

**Acceptable Solutions**
1. The use of the site, including the adaptive reuse of heritage items maintains the human scale of the buildings to the street and public spaces.
2. Pedestrian movement networks are developed around, and through, the heritage buildings.
3. Heritage items located adjacent to public open space, integrate with the public domain.
4. Development of the Newcastle Railway Station site:
   (a) Maintains views of Newcastle Station along Scott Street, particularly the main building and the Western Wing.
   (b) Maintains the view corridor from the harbour front to the roof elements on the main building and Western wing from a pedestrian level.
(c) Ensure that the general bulk of any new development on the site does not compete with, impede or detract from the current tiered elevation and depth created by the built form in its current configuration.

(d) Maintains the view corridor from the west to Customs house. The bulk of new structures does not obscure views to and from the clock element on Customs house, beyond what has already been established.

(e) Ensures that the form, massing, scale and bulk of new development are complementary to the existing built form of the Newcastle Railway Station.

I Multi-purpose Community space

Figure 6.01-46:

Existing Character

The Multi-purpose Community Space Precinct bookends the Newcastle Station and Foreshore Park Precinct, marking the western end of this public space. The precinct contains a carpark, part of the former rail corridor and footpath fronting Scott Street. The history of this precinct is closely tied to Newcastle Harbour. The carpark was previously the Perkins Street Boat Harbour, until it was closed in 1960 and filled in to form the present open carpark. Adjoining the Boat Harbour was the Private Coal Staithes (a structure for loading coal onto ships). The precinct is well located between the harbour and the city and is close to light rail stops.
**Future Character**

The Multi-purpose Precinct together with the Newcastle Railway Station and Foreshore Park Precinct forms a key position in the urban environment of this part of the city. This precinct is intended to become a multi-purpose community civic space, incorporating a community facility and public domain space. Activating the western end of this public space with a multi-purpose building will provide important casual surveillance of the open space area. Active frontages will improve the streetscape at Wharf Road and Scott Street. Important views and foreshore access will be retained. It is intended for the precinct to be popular with residents, visitors and workers.

The site is identified as a key site under Newcastle LEP 2012. This will ensure that future development exhibits design excellence and complements the wider Foreshore Character Area.

**Objectives**

1. Provide a new community place and space for the Newcastle community
2. Promote views and connections to the harbour and Nobbys Headland from the City Centre
3. Promote active street frontages, provide pedestrian and visual links between city and harbor and encourage historical interpretation of the site.

**Performance Criteria**

I1. The Multi-purpose Community space is a publicly accessible regional tourist and leisure destination.

**Acceptable Solutions**

**View corridors**

1. View corridors are maintained along Brown Street and Perkins Street through to the harbour, as identified in Figure 6.01-46
2. Vegetation and vertical elements in open space are sited to ensure existing visual corridors between the harbour and Perkins Street are maintained.
3. Enhance views to Nobbys Headland from Scott Street and the precinct. New development takes advantage of the views to the harbour and Nobbys Headland.

**Building setbacks**

4. The built form along Scott Street has a nil setback as shown in Figure 6.01-46
5. The built form in Wharf Road is setback a minimum 6-8m as per Figure 6.01-46 to generally align with the setbacks of adjoining development to the west, and to reflect the general alignment of Wharf Road and existing footpath.

**Performance Criteria**

I2. New Development integrates with Foreshore Park and encourages pedestrian access and permeability.
Acceptable Solutions

Key site
6. The bulk and scale of new development does not compete with or impede or detract from the surrounding areas and enhances connection to Market Street Lawn and other areas of open space.
7. Design excellence considerations include the “acceptable solution” parameters for this Key Precinct and be addressed in any Development Application.
8. New development improves pedestrian permeability and amenity between Hunter Street, Scott Street and the harbour.

Site Activation
9. The built form addresses Scott Street and Wharf Road and has frontage and activation to Market Street Lawn

Access
10. New Development provides for the minimum 6m wide lane access as shown in Figure 6.01-46. Vehicular access should only be from Wharf Road.

Trees
11. Trees are retained on site where possible. If trees cannot be retained, then replacement of trees on site are in accordance with Section 5.03 Vegetation Management of the Newcastle DCP 2012.

Stormwater
12. New buildings are not to be constructed over or compromise the integrity of a drainage line or easement. If a new building is proposed to be built over an existing drainage line then the drainage line and any associated easement is to be diverted around the building. Refer to Section 7.06 Stormwater of the Newcastle DCP 2012.

Archaeology
13. Excavation works on this site will need to comply with relevant requirements under the Heritage Act 1977. Refer to Section 5.06 of this DCP.

Note: The site formerly known as 233 Wharf Road (currently being used as a carpark) is known as the Perkins Street Boat Harbour and is identified as Item No. 1128 in the Newcastle Archaeological Management Plan 1997. In 1902 the Perkins Street small boat harbour was built to replace the 1857 Market Street Harbour. In 1960 the Perkins Street Boat Harbour was closed and was filled in to form the carpark. Item No 0193 in the Archaeological Management Plan 1997 refers to Private Coal Staithes, with any remaining evidence likely to be present in the area of Wharf Road.

Subsidence
14. Any future works on this site will require geotechnical assessment of mine subsidence risk to ensure that the site is not impacted by convict-era workings.

Subsidence Advisory NSW records indicate historical mine workings in the Borehole Seam exist with the zone of influence under the site. There is a possibility that unmapped convict era mine workings may exists under the site.
\textbf{Flood}

15. The site is flood affected in both PMF and 1\% AEP flood events but not prohibitive to development.

\textbf{Landscape}

16. Landscape works adjacent to the public domain of Wharf Road to be consistent with the Foreshore Precinct Public Domain Plan.
ORDINARY COUNCIL MEETING
10 DECEMBER 2019

CCL 10/12/19
DRAFT AMENDMENT TO NEWCASTLE LEP 2012 - 233 WHARF ROAD
AND 250 AND PART 150A SCOTT STREET, NEWCASTLE

Item 99 Attachment B: Site Map and proposed zoning
Attachment B - Site Map and proposed zoning

Site Map