



UNLOCKING THE VALUE OF *reuse and repair*

Opportunities for waste avoidance
in Lake Macquarie



Acknowledgement of Country

**Lake Macquarie City Council
dhumaan Awabakala ngarrakal yalawaa,
yalawan, yalawan.**

Lake Macquarie City Council acknowledges the Awabakal people and Elders past, present and future.

**Dhumaan ngayin ngarrakalu
kirraanan barayidin.**

We remember and respect the Ancestors who cared for and nurtured this Country.

**Ngarrakalumba yuludaka bibayilin
barayida baaduka.**

It is in their footsteps that we travel these lands and waters.

Wording by the Aboriginal Reference Group and translated by Miromaa Aboriginal Language and Technology Centre.

Kayaks near the shore of
Spectacle Island

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Introduction

This paper is a companion document to Lake Macquarie City Council's Waste and Circular Materials Strategy 2026-2030. The strategy captures the ambition to increase circular economy activity in our region and identifies that reuse and repair activities are a practical and easily accessible example of how our community can achieve this.

Expanding on this ambition, this paper examines the current state of play of community reuse, repair, trade and sharing economies in our city and opportunities to increase these activities. By highlighting local advantages, this paper works to inform our programming and planning efforts, and positions Council, community and industry for strong partnerships and funding.

Strategic links:

Lake Macquarie Community Strategic Plan 2025-2035

Community Outcome: through innovative resource management, our city is managing waste and building a circular economy

Waste and Circular Materials Strategy 2026-2030

Strategy 1.3: Increase reuse, repair, trade and share economy capacity

Strategy 2.1: Engage with our community to promote resource conservation and mindful consumption

Policy environment: favourable for sharing, repairing and reuse

The Australian Government has set an ambitious target to double the circularity of Australia's economy by 2035. This is to be achieved by shrinking material consumption by 10% per person and recovering 80% or more of consumed resources¹.

The NSW Government's goal is to reduce total waste generated per capita by 10% and to achieve an 80% resource recovery rate by 2030².

The challenge is not simply in waste management. As stated in the 2024 National Waste Policy Action Plan, "achieving progress against the [waste minimisation] targets requires us to think differently about what and how we buy, adopting approaches that capture the resources from the items we would normally throw away, allowing them to be reused or repurposed or recycled."³

Bicycles donated to be repaired for reuse at the Great Bicycle Recycle, November 2025



“Strong end markets... are an essential part of the circular economy. By building and strengthening markets for repair and reuse, and for recycled materials, we can ensure that materials stay in the economy for longer.”

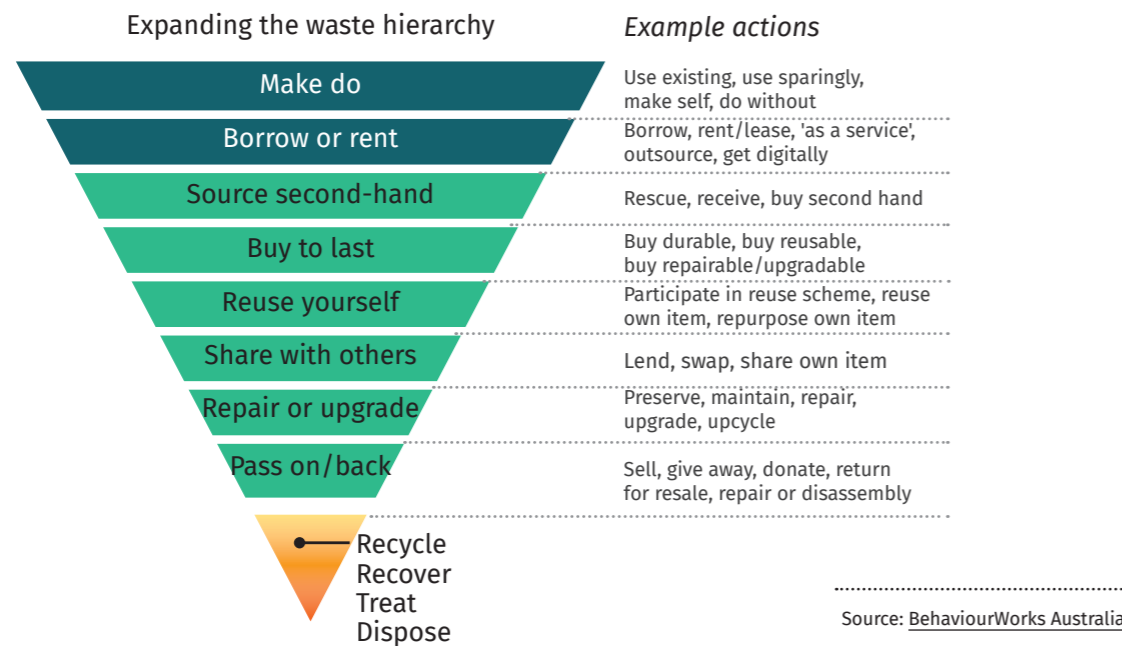
Australian Government's 2024 National Waste Policy Action Plan

Better than recycling: resource sharing vs reuse vs repair

As the Waste and Circular Materials Strategy 2026-2030 describes, we cannot rely on just recycling our waste. Council has invested in best-practice resource recovery systems and the community uses them well. However, the volume of waste generated and the fact that it is not economically viable to recycle all materials means we must enhance waste avoidance.

The Expanded waste hierarchy (Figure 1) provides for strategies to manage waste based on environmental impact. The options at the top of the diagram are more favourable based on their overall resource efficiency or waste minimisation. Options that avoid or reduce resource use, such as designing products for extended or multi-purpose use, are more resource-efficient than recycling products.

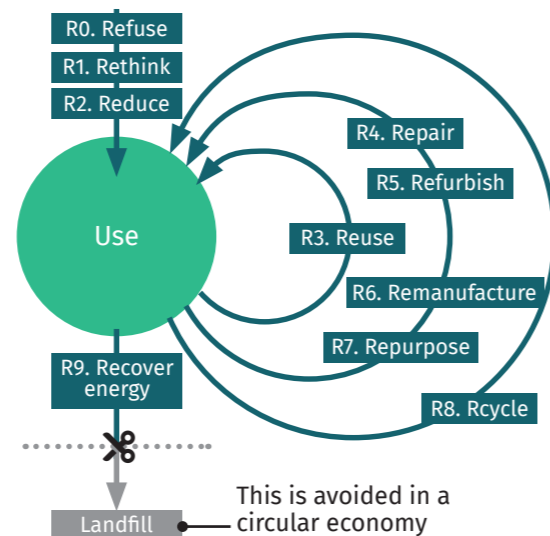
Figure 1: Expanded waste hierarchy



A related strategy for evaluating resource use options is to apply circularity principles (see Figure 2). A system that can close, narrow, slow down and minimise leakages from these loops is more efficient in terms of resource use than larger loops that require more intervention, resources, energy and time to recover or transform the materials⁴. Reuse or sharing is favourable to a repairing or refurbishing option, insofar that less energy and intervention is required. A recycling option (whereby the material is recovered, fully reprocessed and injected into a new manufacturing process) is deemed less efficient.

This paper focuses on community-based solutions to minimising and preventing waste at the top of the waste hierarchy, with an emphasis on maximising efficiency and overall resource use. Based on this framework, sharing and reuse options are favourable to repair options if feasible, but repair options are preferable to recycling.

Figure 2: A Circularity Loop Diagram



Source: Potting et al (2018), Policy Brief - Circular Economy: What We Want To Know And Can Measure, p11

The rationale for sharing, reuse and repair activities

Environmental benefits

Human activity since the commencement of industrialisation has led to unsustainable energy use, land use and patterns of consumption and production⁵.

The international non-profit research organisation Global Footprint Network has created an 'ecological footprint' measure of how much area of productive land, resources and water a given population requires to produce all the materials it consumes and to absorb all the waste it generates. For 2022, this foundation estimated that the world required 1.71 Earths to maintain current levels of consumption. In Australia, the current rates of consumption would require pro rata the equivalent of 4.1 Earths⁶.



If Australians could extend the use-life of their most common household electronic devices by 50%, we'd be able to avoid 25 million metric tonnes of carbon emissions over a decade – the equivalent of removing between 540,000 vehicles from the roads for a decade!

The material intensity of the Australian economy is high and increasing. In 2019, we required 0.61 kg of materials for each dollar of GDP, an increase from 0.56 kg per dollar in 2015. The report estimated a 3.7% circularity⁷ for the national economy (meaning that for every 100kg of used resources, 96.3kg are virgin materials). This is about half the global average measure of circularity of 7.2%, and well below the world-leading rate for the Netherlands of 24.5% circularity. This deficit in material capacity is clearly unsustainable. Overcoming it requires a significant transformation in how we produce, consume and dispose of materials.

Sharing, reusing and repairing products is a simple and effective way to decelerate the rate of material consumption and its ensuing environmental impacts without significantly compromising living standards.

A 2022 study estimated that extending the useful lifespan expectancy of electronic devices by 50-100% can lead to a mitigation of up to half of all greenhouse gas emissions, due to the 'embodied emissions' from resource mining, manufacturing and supply chain transportation of these products. At scale, the act of product life extension through repair activity has significant environmental benefits.

Extrapolated for Australia's population size and assuming similar rates of electronic device consumption in Australia and the US, if we were able to extend the use-life of the most common household electronic devices by 50%, we'd be able to avoid 25 million metric tonnes of carbon emissions over a decade – the equivalent of removing between 540,000 vehicles from the roads for a decade!⁸



Turning rags into cushions at the Living Smart Festival

Economic benefits

There are significant economic benefits of increasing sharing, reuse and repair activities in Lake Macquarie and Australia. The accrued benefits can be understood as both processual (related to organisational or consumer-level cost savings and efficiency gains) and industrial (in terms of additional domestic economic activity, employment generation and new businesses established in the sharing, reuse and repair sectors). These benefits are even more pronounced for product categories such as electronic goods, vehicles and transport equipment, textiles, clothing and footwear, which tend to be produced overseas and imported into Australia. Reuse and repair activities represent a version of sovereign manufacturing and have the potential to more efficiently capture the economic value of production domestically, due to more localised industry structures and supply chains.

KPMG 2020's economic analysis of the potential economic pay-off over time of moving towards more circular practices across several major industries (food production, power generation, water utilities, transport and building and construction) estimated a net present value benefit of \$210 billion and 17,000 full-time equivalent jobs by 2047-2048⁹. In pro rata terms¹⁰, this would represent a potential net benefit to the Lake Macquarie economy of over \$1.6 billion and an additional 135 full-time equivalent jobs by 2048.

The social benefits of repair:

The charitable reuse sector is estimated to save Lake Macquarie residents \$11 million this year through buying or receiving second-hand items instead of new.

In an analysis of the economic benefits of the NSW reuse sector, a 2024 study estimated that reuse activities and industries generate 25 times more jobs than recycling and 81 times more jobs than landfill on a per tonne basis. This translates into a potential 228 FTE employment positions (including jobs for individuals with barriers to employment), and 491 FTE volunteer positions per 10,000 tonnes of resources handled¹¹.

Social benefits

Related to the economic benefits is the positive impact sharing, reuse and repair activities can have on household budgets and social wellbeing. In the context of cost-of-living pressures for many people, these activities can provide accessible and immediate budgetary relief, simply because they allay the requirement to purchase an item new. A recent study by the industry organisation Charitable Reuse Australia estimated that reuse organisations alone provided an estimated \$432 million in community savings nationally in 2022-23, derived from the net savings from buying or receiving second-hand goods compared to buying new¹². Proportionately this represents an estimated cost savings of \$11.2 million per annum for Lake Macquarie residents through the use of existing reuse organisations and services.

There is a raft of other social benefits of taking part in the share/repair economy, ranging from local participation, skills development and transfer, community cohesion, and community resilience.



Repair cafe at Rathmines Theatre

Sharing, repair and reuse activities in Lake Macquarie: *the current state*

Because a wide range of commercial and non-commercial operations fall under the banner of share/repair/reuse activities, it is difficult to precisely and completely quantify them in Lake Macquarie. Some measures of activity across the categories of commercial, non-commercial/community and council operations include:

Commercial activities

In July 2024, there were 1,721 businesses registered in the Lake Macquarie local government area that can be broadly understood to be in resource repair and reuse industries. These are as disparate as second-hand goods retailing stores, domestic appliance repair services, building material salvaging and motor vehicle repairs. Together they represent about 3.2% of total active businesses¹³.

International research suggests repair enterprises have been declining in Europe and elsewhere over the long term¹⁴. Local data indicates volatility in the sector. While the number of registered repair and reuse industry businesses spiked in the period 2021-2023, much of this increase was negated by business exits in 2023-25 (see Figures 4 and 5)¹⁵.

A rapidly growing commercial area of product reuse and resale activity is the social commerce sector, encompassing platforms such as Facebook Marketplace, Gumtree and Buy, Swap & Sell networks. Retail analysts estimated Australia's social commerce transactions in 2023 to be valued at \$2.67 billion, with growth forecasts of \$5.17 billion of trading by 2028¹⁶. This translated into approximately \$21.5 million of social commerce trade by Lake Macquarie residents in 2023, and potentially over \$41 million of trade by 2028 – much of it in second-hand goods transactions.

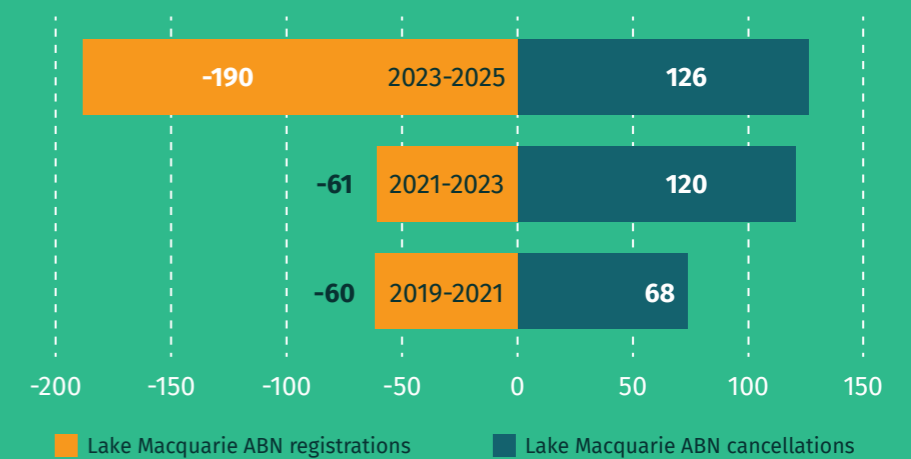


Kids learning to deconstruct electrical items at the Repair cafe

Figure 4: Net entries and exits of repair, reuse and circular economy businesses in Lake Macquarie LGA, 2019-2025

Net movement: ABN registrations and cancellations	2019-2021	2021-2023	2023-2025	2019-2025 net average
Lake Macquarie	11.8%	49.2%	-50.8%	1.0%
Hunter Region	6.7%	57.4%	-13.4%	17.3%
New South Wales	1.5%	44.0%	-29.8%	3.6%

Figure 5: Business entries and exits, Lake Macquarie LGA and NSW



Community and non-commercial activities

There is robust community engagement with repair, reuse and sharing initiatives in Lake Macquarie. There is an active network of Sustainable Neighbourhood Groups¹⁷ with an active membership of 120 regular participants who organise and support repair and reuse events. One of their successful projects has been the Repair It Lake Mac project, which holds regular Repair Café events and whose Facebook group has 2,500 followers. In 2024, there were four Repair Café events, with 290 participants and 300 items repaired¹⁸. These activities have helped establish a national reputation. Griffith University Professor Leanne Wiseman, an Australian Research Council Future Fellow and Chairperson of the Australian Repair Network, has praised the Repair It Lake Mac group as one of the most active and visible repair forums in Australia¹⁹.

Lake Macquarie is home to six Men's Sheds²⁰. The focus of the Australian Men's Shed Association is on providing meaningful activities and social connections for men who may be experiencing difficulties in dealing with life problems. In practical terms, their members are often engaged in repair or refurbishment work (of furniture, electronic equipment, small motors etc).

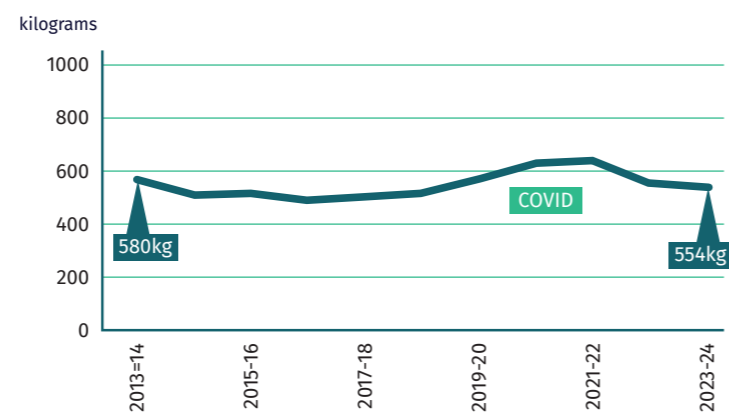
There is also a significant network of not-for-profit and charitable reuse stores (i.e. op shops) with 28 operating within the city, including clusters in Warners Bay, Cardiff and Belmont. However, these charitable reuse organisations tend not to engage in or facilitate repair activities²¹. Networks of charitable gifting or swapping are similarly well-supported, with 'Buy Nothing' or 'Community Gifting' online platforms enjoying hundreds of local participants.

Lake Macquarie's 2024 Environmental Attitude Survey demonstrated strong community support for adopting mindful consumption decisions and circular economy solutions aimed at minimising waste. Respondents agreed it is better to reuse items than buy new (85%), it is important for residents to reduce their resource consumption (78%) and our landfill sites cannot continue to meet the demand of community consumption and disposal (63%)²².

Similarly, a 2021 resident survey indicated strong support for repair and reuse. Nine out of 10 residents reported undertaking some sharing and repair activities in the past 12 months, and 79% supported the idea of preferentially taking items to a local repair and re-use facility rather than landfill. The survey results also highlighted where the most lucrative resale opportunities may lie in the management of the bulky waste collection services. The three most common categories residents reported using the bulky waste service for were furniture (69%), whitegoods and metal (59%), and electronic devices including computers and televisions (57%), all of which have strong commercial resale or salvaging potential²³.

However, other indicators point to some entrenched challenges with translating supportive sentiments into increased uptake of reuse and repair services. According to Lake Macquarie City Council waste management data, household waste generation has remained relatively stable for much of the past 10 years (in line with similar trends across NSW). In 2023-2024 Lake Macquarie residents generated about 554kg of domestic waste per person, compared to 580kg in 2013-14 (see figure 7). Although Council has been increasingly effective at diverting volumes from landfill, it underscores that these improved waste management outcomes aren't flowing through to more effective community waste avoidance practices. Many products and materials are still being disposed of without their use-value being maximised through repair or reuse channels²⁴.

Figure 6: Total annual domestic waste produced per person in Lake Macquarie (kerbside bins and bulky waste)



Council activities

LIBRARY SERVICES

Council operates 10 library branch locations and a mobile library service. Libraries are premised on reuse and sharing. Besides books and reading materials, Lake Mac Libraries offer items such as video games and online resources, for free or low cost.

Lake Mac Libraries boast additional sharing and reuse activities, such as the textiles room at Toronto Library and the Sew Sustainable program, where residents mend and repair their garments using the library's sewing equipment. Another project is Fab Lab, at Windale Hub, where residents can fabricate items, including components for damaged products. Fab Lab is currently open for approximately 10 hours per week.

An innovative service is the Lake Mac Library of Things, that expands the library lending ethos beyond books and into household items like baking equipment, beach gear and sporting goods. The service manages 60 items, and is exploring introducing new items such as power tools, sewing appliances and gardening equipment²⁵.

ENVIRONMENT AND SUSTAINABILITY

Council engages residents and industry on waste avoidance and sustainability matters, including the enabling and encouragement of reuse, repair and sharing activities. Key outputs include:

- the annual Living Smart Festival (which attracts roughly 12,000 visitors)
- Repair It Lake Mac Repair Cafes, delivered through a partnership with the Lake Macquarie Sustainable Neighbourhood Alliance
- waste avoidance and education functions, including establishment of the Lake Mac Op Shop Trail campaign and Super Street Sales
- schools outreach to over 90 schools, including waste workshops
- circular economy projects focused on resource efficiencies.

ASSET OPTIMISATION

Internally, Council is making progress to shift from a linear economy. Approaches include trialling circular materials and developing frameworks for ethical disposal or on-sharing of equipment and materials.

CIRCULAR ECONOMY LIVING LAB

The Circular Economy Living Lab (CELL) is an organisation designed to promote circular economy practices in Lake Macquarie through educational and networking activities, collaborative project work, and identification of commercial opportunities for industry. The CELL is a partnership between Council, the University of Newcastle and Dantia (Lake Macquarie's economic development company).



A child attending the Living Smart Festival

Barriers to sharing, reuse and repair activities in Lake Mac

Internal barriers and obstacles

RESOURCING PRIORITIES

The established convention in the waste management industry is to focus on post-consumer disposal management and recycling, rather than on waste avoidance endeavours (such as sharing, reuse and repair activities).

In the same way that circularity requires rethinking in terms of management approaches (beyond waste management), so too must organisations and funding bodies reconsider how avoidance is resourced.

SUITABLE, AVAILABLE AND AFFORDABLE FACILITIES

Reuse and repair activity can be precluded by a lack of affordable and suitable facilities. Enterprises in the sharing and reuse space may be hampered by logistical and storage costs (such as second-hand furniture or whitegoods refurbishment operations) and may not be viable when commercial real estate costs are factored in.

Repair It Lake Mac, which delivers Repair Cafes in the region, articulates the need for a stable and fit-for-purpose facility. Coordinator Samantha Doove describes: "Our vision is to have a space a couple of days a week where we could either have repair activities going on or bringing our volunteers together to do some larger upcycling projects, with the intention that something like that actually becomes commercialised and self-sustaining."²⁶

Council has an established program of generously leasing community facilities to social enterprises and not-for-profit organisations at below-market rates. However, these properties may not always suit prospective enterprises.

LACK OF STRUCTURED REPAIR AND REUSE PATHWAYS FOR DISPOSED HOUSEHOLD MATERIALS

Council has not operated or supported a tip shop (a facility co-located with a waste management centre where useable items can be diverted prior to disposal and resold or refurbished) since 2013. This is in contrast to other local government areas, including Salamander Bay Recycling Centre in Port Stephens, the Burragan Recycling Shop in Singleton, Reviva Reuse Shops in Tuncurry, Bulahdelah, Tea Gardens, Taree and Dunmore, and Kimbriki in the Northern Beaches LGA.

The lack of salvaging facilities for product reuse or repair carries significant opportunity costs. A US study estimated that repairable items alone represent 2-5% of the total waste, with an estimated value of \$900AUD per tonne of repairable products²⁷. Based on local landfill audit data in 2024, this would represent between 1,260 and 3,150 tonnes per annum of repairable items lost to landfill, at a value of \$1.1-\$2.8m in Lake Macquarie²⁸. A further opportunity cost is the waste levy paid (by weight) for items that could be salvaged for repair or reuse. If these were recovered at the volumes estimated above, this would represent savings of \$215,000-\$535,000 per annum, based on current waste levy rates (noting that the operation of a tip shop and salvaging facilities could also potentially incur operating and management costs).

External barriers and obstacles

REUSE AND REPAIR INDUSTRIES RELIANT ON VOLUNTEER LABOUR

Many reuse and repair activities and enterprises, including op shops, repair cafes and other community events, rely on volunteer labour to be viable. However, there are indications that rates of volunteering are declining. The most recent census shows a drop in volunteer rates in Lake Macquarie from 18% in 2016 to 13% in 2021³³. Charitable Reuse Australia, the national network of charitable purpose-driven reuse enterprises, has identified volunteer shortages as a key challenge for the industry nationwide³⁴.

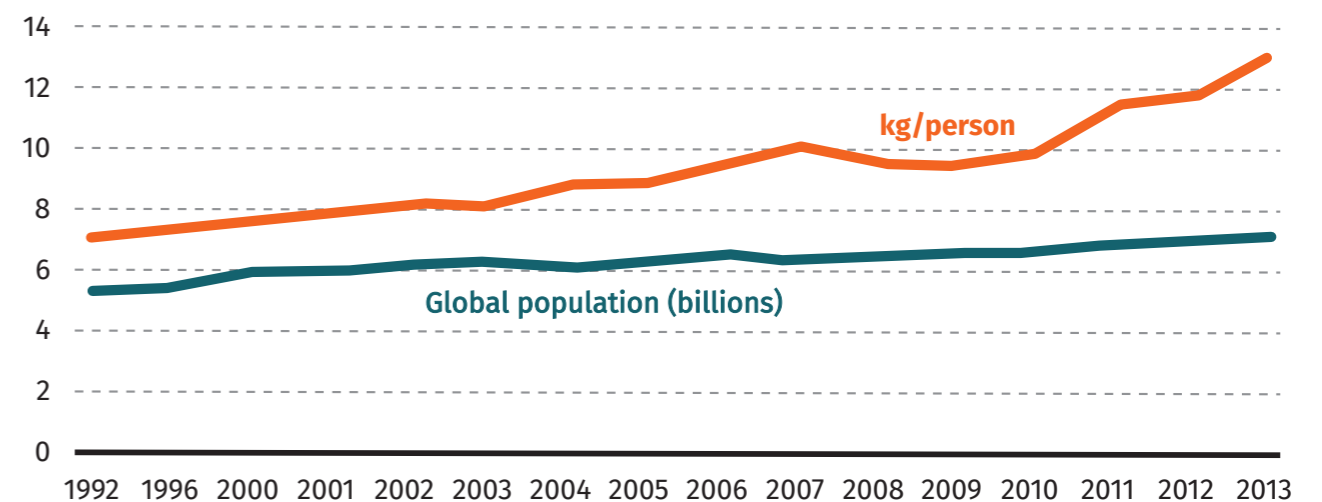
This trend has been felt locally. Lanah Maruff, Chairperson of the Newcastle Share Shop, identified the sourcing and retaining of volunteers as the largest challenge for the organisation. She states, "the system works well and financially we're fine. The majority of our inventory is donated... I have inherited some good infrastructure. So there's no good reason why the volunteering part should be so hard, but it is."³⁵

The co-organisers of Repair It Lake Mac identified both coordination and volunteer retention as challenges. Gabrielle Clappison, Chairperson of the Sustainable Neighbourhood Alliance notes that membership is skewed to females over the age of 60.



Figure 7: Shein controversy - fast fashion slow ethics

Figure 8: Global apparel fibre consumption vs population



Source: FAO/ICAC World Apparel Fibre Consumption Survey July 2013 and World Fibre Reports 2011-2013

“I think as soon as we get a permanent space, it [will improve]. Volunteers are really keen to catch up and I think that that will really embed a sense of community and there will be activities there. People are lonely and they’re after things to do, and I think if you build that space, they will definitely come.”³⁶

THE ‘WALMART EFFECT’: PRODUCTS DESIGNED CHEAPLY AND FOR OBSOLESCENCE

A significant challenge is the rise of profligate consumerism, coupled with many industries adopting increased consumption volumes as their core business model (see Figure 10). The burgeoning ‘fast fashion’ industry and price-competitive chain stores has created what has been dubbed the ‘Walmart Effect’: a continuous drive by manufacturers to make things as inexpensive and nondurable as possible, resulting in the lifespans of everyday products becoming unnecessarily short. There is also evidence of ‘planned obsolescence’ amongst some companies who are deliberately shortening product lifespans through software updates and design strategies that compel consumers to buy new products³⁰.

Many consumers and producers tend to think of product values in terms of purchase costs, rather than life cycle costs. The long-term economic benefits of durable or repairable products made according to circular design strategies may therefore be undervalued, particularly by consumers who are focused on short-term household budgetary considerations³¹.

LEGAL AND REGULATORY BARRIERS

The Productivity Commission’s 2021 Right to Repair - Inquiry Report outlined a number of legal and regulatory hurdles that impede repair activities in Australia. For example, current Australian copyright laws restrict the distribution of a business’



copyrighted materials, which can often include repair manuals and product diagrams, which the Commission viewed as unnecessarily limiting the ways in which repair information can be used in Australia²⁹.

Related to this is the use by many manufacturers of warranty voiding clauses, which have restricted competition in the repair industry by discouraging consumers from using third-party repair services, spare parts and tools during the warranty period.

In 2021, the Australian Government established a repair supplies obligation (which was enacted in July 2022) aiming to expand access to repair information for certain product classes (such as motor vehicles, farming equipment and electronic goods), but the scope of these requirements remains limited.

SOPHISTICATED TECHNOLOGIES

Another issue raised by the Productivity Commission is the growth in the number of products (such as vehicles, refrigerators, whitegoods and even coffee machines) that incorporate sophisticated technology and embedded software. This often renders repair work difficult, complex and costly. Relatedly, ‘the rise in tech-enabled products means that much of the information required to diagnose a fault is digital, embedded into the product itself and held behind digital locks, requiring passwords or special tools to bypass.’³² This entails an increased reliance of the consumer on the product manufacturer (or authorised contractors) to repair or maintain their product, leading to restricted competition in repair markets.

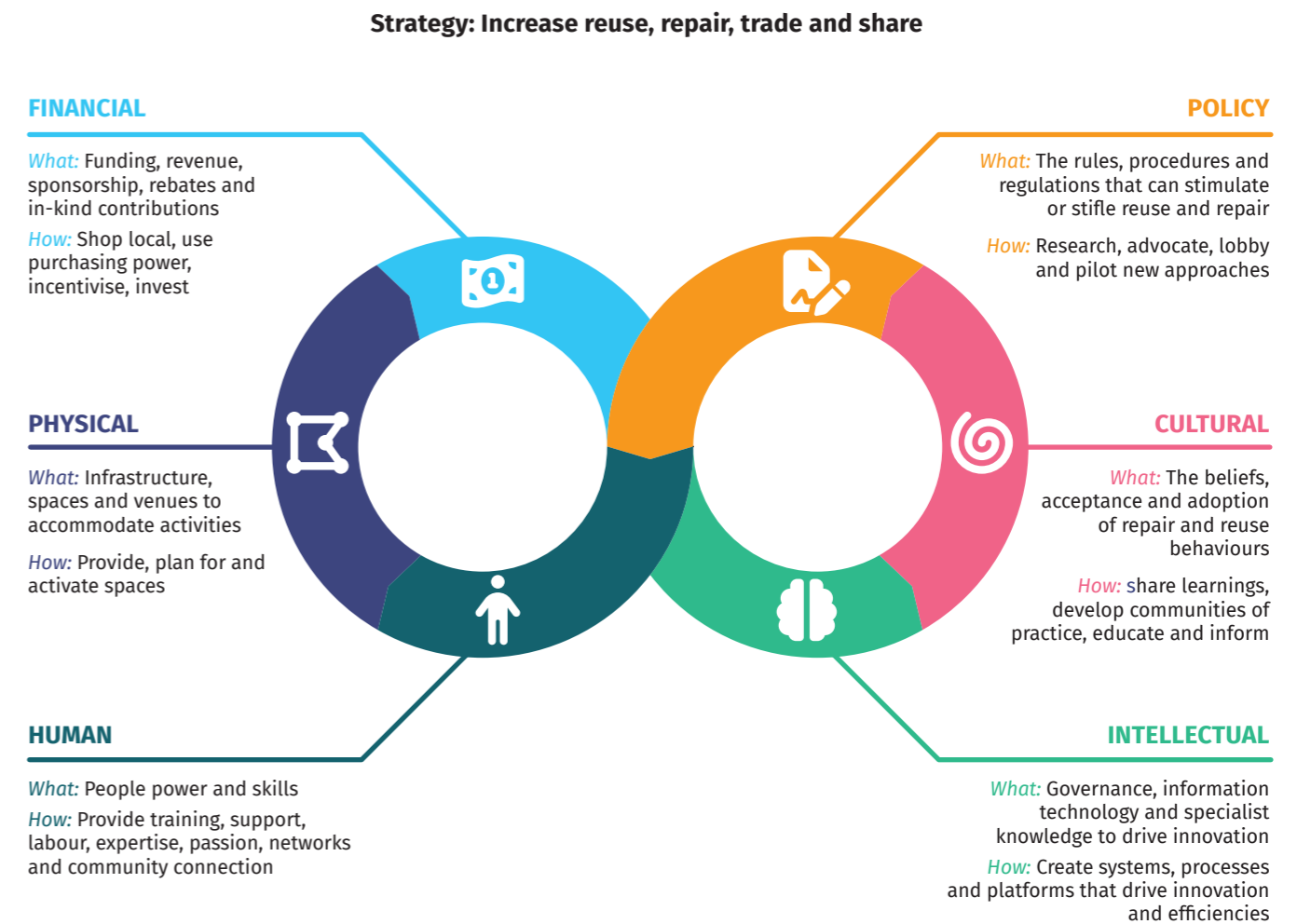
INDUSTRIAL INERTIA AND COMPLACENCY

Industry observers have identified several internal cultural barriers in some businesses that inhibit industrial-scale repairability and circular solutions for products. In an empirical study of the barriers to circular design practices in the American building and construction industry, researchers identified the following challenges: a lack of leadership among management to champion resource-efficient innovations, a belief that reuse solutions (for example, designing for disassembly) compromises building durability and resilience, a lack of product component standardisation, conflicting goals between pre-engineered or pre-fabricated structures and what their potential future reuse could be, and a lack of emphasis on repairability or reuse design principles in university curriculums or trades training programs for building design.³⁷

Enablers and opportunities

To move towards a circular economy, we need to create systems change. Complex systems don’t shift because of a single intervention. They shift when multiple pressures, incentives and supports line up.

The graphic below reflects some of the enablers that can contribute to Lake Mac’s strategy to increase reuse, repair, trade and share economy capacity.



Individuals, industry and Council can all contribute to advancing reuse, repair and sharing in our community, through a range of enablers.

The list that follows is not exhaustive, but a collation of opportunities and associated benefits that our community, local organisations and businesses are well positioned to advance.

Drawing on research and engagement with key stakeholders, this list focuses on non-commercial and local commercial opportunities.



Lake Mac's Library of things launched in March 2025

Opportunities group 1:

Build a culture of repair and reuse

There is opportunity to engage, inform and inspire the Lake Mac community to participate in and enjoy the benefits of the share and repair economy.

Opportunity	Benefit
Promotion Promoting sharing, repair and reuse, highlighting economic and social benefits.	Advertising and promotion can be a cost-effective method to promote behavioural change among households. Potentially high return on investment.
Ambassadors Harnessing local, trusted ambassadors to champion reuse and repair.	Trusted local ambassadors have the potential to reach new audiences and make reuse and repair familiar and appealing. Public figures may generate media interest and greater community engagement.
Education Teaching and piloting repair and reuse.	By learning about repair and share practises, students build skills and habits that they can carry into adulthood and their communities. Schools, daycares and learning spaces can be great sites to put repair and reuse projects into practice. For example, schools can embed electronic device lifecycle agreements to improve reusability of devices.
Skills development Building capabilities for repair with hands-on training.	Practical repair skills, such as bike repair, parts fabrication (e.g. at the Lake Mac Fab Lab) or sewing, empowers people, saves money and reduces environmental impact.
Accreditations Designing and recognising repair and reuse qualifications and certifications.	Establishing industry accreditations enhances the maturity, credibility and impact of the reuse and repair sector, by lifting standards, strengthening workforce capability and driving continuous improvement.
Volunteer support Supporting the volunteer workers who underpin the share economy.	Volunteers are essential to the share and repair economy. The benefit of supporting volunteers is greater sector stability and resilience.

Opportunities group 2:

Facilitate repair and reuse events, services and facilities

These opportunities highlight the importance of physical and space-based enablers for sharing, reuse and repair activities.

Opportunity	Benefit
Lending libraries Lending items such as tools, party supplies, household items, electronic goods through share shops or lending libraries.	Lending libraries and share shops save households money and reduce unnecessary consumption, thereby reducing the economic and environmental burden of landfill. Share shop sites often have secondary benefits, such as social connection and skills development.
Repair and reuse hub Establishing a dedicated hub for repair and reuse.	A dedicated hub for repair and reuse in Lake Mac would have a variety of benefits. A site allows for improved salvaging, storage and reuse, capitalises on the opportunity cost of avoiding landfill, and focuses community efforts and interest.
Community spaces Providing low-cost infrastructure for community organisations to advance reuse, repair and share activities.	By providing low-cost infrastructure, property owners can support not-for-profit enterprise to establish.
Regular repair events Growing the program of repair events in the city.	Repair events, such as Repair It Lake Mac's Repair Cafes, are an accessible, cost-effective and welcoming way for residents to get items repaired and divert waste from landfill. Events have the benefit of being scalable and flexible, so they can reach audiences in different locations.
Major events Hosting major reuse, share or repair events.	Hosting large-scale events has the benefit of attracting significant attention and broad audiences.
Drop-off locations Making it easier for residents to donate unwanted items.	Disposing of items through residential waste services is convenient. The provision of convenient drop off points or collection services for unwanted items has the potential to make a significant material impact on waste diversion from landfill.

Opportunities group 3:

Promote repair and reuse businesses

A significant part of the local business community is already engaged in repair and reuse. A key strategy for increasing repair and reuse is identifying and incentivising these existing economic activities.

Opportunity	Benefit
Directories Establishing or expanding directories of local repair and reuse businesses and not-for-profit organisations.	Understanding what reuse and repair services exist is critical for community participation, as well as building business to business networks. A good example is ReUse Hunter Discover Sustainable Solutions in the Hunter Valley
Incentivise repair Financially incentivising repair and second-hand goods outlets (i.e. implementing a repair voucher scheme to support repair businesses).	International experience shows that local repair schemes (like buy-local schemes) are popular with consumers and activate the local economy. Examples include the Vienna repair voucher scheme and the City of Canning's Eco Rebates .
Networks and collaboration Collaborating with other repair and reuse organisations.	Collaboration within the repair industry has a range of benefits, including stronger collective impact, shared expertise and better use of resources.
Material matchmaking Coordinating and facilitating the exchange of surplus materials between organisations.	One organisation's waste or surplus could be a valuable input into another business' production. By matching up these interests, there is scope to significantly reduce business waste. Examples include the Western Cape Industrial Symbiosis Programme (WISP) in Cape Town, the Warp It project from the UK, or Superyard from Australia.

Opportunities group 4:

Policy and advocacy

Some elements of repair and reuse can be most effectively encouraged through high-level policy and regulatory changes at a national level.

Opportunity	Benefit
Product labelling Supporting the introduction of a product labelling scheme that provides repairability and/or durability information for consumers.	Product repair/durability would have a significant impact on consumer decision-making, with the potential to encourage consumers to choose products that have a longer lifespan.
Right to Repair Advocating for outcomes from the Productivity Commission's Right to Repair report.	Greater rights to repair would benefit Australian consumers by ensuring that manufacturing and retail processes made it easier for products to be repaired and disassembled, both extending the lifespan of products and increasing the salvage outcomes at end of life.
No Time to Waste Supporting the recommendations of the 2025 Australian Parliamentary Committee Inquiry Report No Time To Waste	Adoption of recommendations of the report, including legislating a Circular Economy Act, would have wide-ranging benefits, including greater resource recovery, clear guidelines for product design and labelling, and financial incentives for circular economy.



Super street sales are a way to give unwanted items a new home

Appendix 1:

Repair and reuse businesses in Lake Macquarie LGA as at July 2024

Industry Descriptions	Count
Construction	318
Site preparation services	318
Electricity, gas, water and waste services	68
Waste remediation and materials recovery services	60
Waste treatment and disposal services	8
Other Services	994
Automotive body, paint and interior repair	257
Automotive electrical services	55
Domestic appliance repair and maintenance	38
Electronic (except domestic appliance) and precision equipment repair and maintenance	56
Motor vehicle clutch and brake repair and service	10
Motor vehicle Muffler and Exhaust repair and service	7
Motor vehicle Radiator repair and service	2
Motor windscreen repair and service	6
Other automotive repair and maintenance	320
Other machinery and equipment repair and maintenance	183
Other repair and maintenance	60
Rental, hiring and real estate services	274
Other goods and equipment rental and hiring	171
Other motor vehicle and transport equipment rental and hiring	64
Passenger car rental and hiring	39
Retail trade	41
Antiques retailing (except pawnbroking or disposal stores)	22
Disposal stores (second hand goods retailing except pawnbroking and antiques)	16
Pawnbroking	3
Wholesale trade	26
Motor vehicle dismantling and used parts wholesaling	26
Total	1721

Lake Macquarie LGA - Total registered businesses as at July 2024

Industry Descriptions	Count
Accommodation and food services	1,137
Administrative and support services	3,311
Agriculture, forestry and fishing	469
Arts and recreation services	1,803
Construction	8,293
Education and training	1,555
Electricity, gas, water and waste services	124
Financial and insurance services	8,398
Health care and social assistance	4,445
Information media and telecommunications	452
Manufacturing	1,541
Mining	86
Other	571
Other services	3,754
Professional, scientific and technical services	5,778
Public administration and safety	135
Rental, hiring and real estate services	4,416
Retail trade	2,925
Transport, postal and warehousing	3,823
Wholesale trade	847
Grand total	53,863

Appendix 2: Endnotes

¹ DCCEEW (2024), National Waste Policy Action Plan - DCCEEW. Accessed 2 April 2025.

² NSW Environmental Protection Authority (2021), *Waste and Sustainable Materials Strategy*. Accessed on 31 March 2025.

³ DCCEEW (2024), *op cit*, p3.

⁴ Cruz Rios, F. et al (2021), *Barriers and Enablers to Circular Building Design in the US: An Empirical Study*, Journal of Construction Engineering and Management, vol 147, issue 10, p2. [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0002109](https://doi.org/10.1061/(ASCE)CO.1943-7862.0002109), accessed 8 April 2025.

⁵ IPCC (2023) *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001.

⁶ Global Footprint Network (2025), Webpage: *Ecological Footprint*. Accessed 23 April 2025.

⁷ Miatto A, et al (2024), *A comprehensive material flow account for the Australian economy to support the assessment of Australia's progress towards a circular economy*. CSIRO, Australia. Accessed 28 April 2025. The report notes that with the applied measurement methodology it is not possible for the circularity rate to reach over 32.5%, because many materials are irreversibly transformed during use. For example, once coal is converted to energy and emissions, it cannot be reconstituted. Based on that theoretical maximum, Australia has achieved some 11 per cent circularity, implying a potential circularity 'gap' of 89% that may be a more useful target.

⁸ Singh, N. and O.A. Ogunseitan (2022), "Disentangling the worldwide web of e-waste and climate change co-benefits", in *Circular Economy*, vol 1, Issue 2, <https://doi.org/10.1016/j.cec.2022.100011>. The evaluated electronic devices were desktop computers, display units, laptops, mobile phones, notebooks, tablets, digital cameras, printers, games consoles and PC accessories.

⁹ KPMG Economics (2020), *Potential Economic Pay-off of a Circular Economy*, KPMG Australia. Accessed 28 April 2025.

¹⁰ NSW Department of Planning, Housing and Infrastructure (2024), *2024 NSW Population Projections*, <https://www.planning.nsw.gov.au/data-and-insights/population-projections>, accessed 17 April 2025.

¹¹ K Heinrich, L De Garis, and M Rawson (2024), *Measuring Reuse Activity and Impacts in NSW: Executive Report*, Charitable Reuse Australia and NSW Environment Protection Authority, p5, 13. Accessed 16 April 2025.

¹² K Heinrich, L De Garis, and M Rawson (2024), *Measuring Reuse Activity and Impacts in NSW: Executive Report*, Charitable Reuse Australia and NSW Environment Protection Authority, <https://www.charitablereuse.org.au/wp-content/uploads/2024/06/NSW-Reuse-Impact-Study.pdf>, accessed 16 April 2025.

¹³ The Australia and New Zealand Standard Industrial Classification (ANZSIC) codes used in this categorisation were: 2921 (Waste Treatment and Disposal Services), 2922 (Waste Remediation and Materials Recovery Services), 3212 (Site Preparation Services (including building demolition, deconstruction and salvaging services), 3505 (Motor Vehicle Dismantling and Used Parts Wholesaling), 4273 (Used Goods Retailing, Antique Goods Retailing and Second-hand goods retailing), Hire Services (machinery, equipment, other tangible goods), 9411 (Automotive Electrical Services), 9412 (Automotive Body, Paint and Interior Repair), 9419 (Other Automotive Repair and Maintenance), 9421 (Domestic Appliance Repair and Maintenance), 9422 (Electronic (except Domestic Appliance) and Precision Equipment Repair and Maintenance), 9429 (Other Machinery and Equipment Repair and Maintenance) and 9499 (Furniture Repairs and Upholstery Repairs). Business List data downloaded from REMPLAN Economy webpage, with count derived from businesses with active ABNS as at 19 July 2024. Accessed 29 April 2025.

¹⁴ Angelina Korsunova, A., E. Heiskanen and A Vainio (2023), "Consumer decision-making on repair in a circular economy: A process model based on experiences among young adults and stakeholders in Finland", *Journal of Cleaner Production*, Volume 405, ISSN 0959-6526, <https://doi.org/10.1016/j.jclepro.2023.137052>. See also Moalem, R.M. and M.A.A. Mosgaard (2021), "Critical Review of the Role of Repair Cafes in a Sustainable Circular Transition", in *Sustainability* vol 13, 12351. <https://doi.org/10.3390/su132212351>.

¹⁵ Australian Bureau of Statistics (2025), "Counts of Australian Businesses, including Entries and Exits: July 2020 – June 2024". <https://www.abs.gov.au/statistics/economy/business-indicators/counts-australian-businesses-including-entries-and-exits/latest-release>. Accessed 29 April 2025.

¹⁶ Note this figure includes second-hand product transactions as well as new product transactions. Pattabiraman, R (2023), "Australia's social commerce market tipped to top \$2.67 billion this year", Inside Retail. Accessed 29 April 2025.

¹⁷ Sustainable Neighbourhood Groups are active in the suburbs of Sugar Valley, Five Bays, Toronto, Rathmines, Cardiff, Warners Bay, Valentine, Greater Charlestown, Redhead and Pelican.

¹⁸ See the Facebook page Repair It Lake Mac | Lake Macquarie NSW | Facebook.

¹⁹ Interview with Prof. Leanne Wiseman, chairperson of the Australian Repair Network, 22 April 2025.

²⁰ Australian Men's Shed Association website, accessed 20 May 2025.

²¹ Interview with Prof. Leanne Wiseman, chairperson of the Australian Repair Network, 22 April 2025.

²² Micromex Research (2025), Lake Macquarie City Council: Environmental Attitudes Research – 2024, published for Lake Macquarie City Council, February 2025.

²³ Micromex (2021), Community Waste Survey 2021 – Collation of Bulk Waste Service Insights, LMCC Content Manager Record Number D10544341.

²⁴ As way of example, it has been estimated that reusing a functional solar panel generates 133 times more value rather than recycling it for materials (see McGregor, J. (2023), The case for solar panel reuse in Australia, accessed 26 May 2025.) Similar Reuse vs Recycle value-gain ratios apply to many other household products.

²⁵ Interview with Lake Macquarie City Council library staff, 13 May 2025.

²⁶ *Ibid.*

²⁷ Seldman, N (2022), "Repair, Reuse, and Economic Growth in America", Institute for Local Self-Reliance. Accessed 7 April 2025.

²⁸ This would represent between 14kg and 35.5kg of repairable items disposed of per household each year, for an estimated value of between \$12.80 and \$31.95 per household.

²⁹ Productivity Commission (2021), Right to Repair: Inquiry Report no. 97, Canberra.

³⁰ Cruz Rios F. et al (2021), "Barriers and Enablers to Circular Building Design in the US: An Empirical Study", Journal of Construction Engineering and Management, 147(10).

³¹ *Op cit*, p9.

³² Productivity Commission, *ibid*, p3.

³³ REMPLAN (2025), Webpage: Lake Macquarie: Work / Voluntary, accessed 7 May 2025.

³⁴ K Heinrich, L De Garis, and M Rawson, *ibid*.

³⁵ Interview with L. Maruff, 30 April 2025.

³⁶ Interview with G. Clappison and S. Doove, 17 April 2025.

³⁷ Cruz Rios F. et al, *op cit*.

