



**INSTITUTE
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Responding to Structural Change in Lake Macquarie
Briefing Paper for Policy Makers

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The University of Newcastle acknowledges the traditional custodians of the lands within our footprint areas: Awabakal, Darkinjung, Biripai, Worimi, Wonnarua, and Eora Nations. We also pay respect to the wisdom of our Elders past, present and emerging.

Summary for Policy Makers

The City of Lake Macquarie is the largest local government area in the Hunter region, with a population of 214,000. Home to Eraring – Australia’s largest power station, scheduled for closure in coming years – Lake Macquarie’s economy has experienced major structural changes over the past decade.

Historically dominant manufacturing and coal mining sectors have contracted from 37% of local output in 2011 to 23% in 2022. Remarkably, however, the local economy has continued to prosper, adding 22,000 jobs, with in-migration driving rapid population expansion and gross regional product growing at 2.3% annually.

What has driven this outcome, and what change is still in the pipeline? To consider these questions, the University of Newcastle’s Institute for Regional Futures has been commissioned by Lake Macquarie City Council (LMCC) to analyse changes over the past decade, evaluate the efforts made by LMCC in leading efforts to adjust to these changes, and assess what future changes lay in store.

Several conclusions on recent change can be drawn. Firstly, the changes in industrial sectors – and others such as retail – comprise a genuine structural shift in the industries that drive the Lake Macquarie economy. Secondly, the industries that have filled the gap in jobs and output are driven by high rates of population growth, chiefly construction and the expansion of the care economy.

Thirdly, many key indicators are exhibiting increasingly positive trends. These include the attraction of younger workers, the realisation of aspirations to establish a visitor economy based on the City’s natural assets, more jobs for locals, and a slowing rate of contraction in manufacturing.

While Lake Macquarie has strong fundamental advantages – including a large population linked with adjacent regions – review of the actions undertaken by LMCC show a striking alignment between the strategies and actions prioritised locally, and improvement in key economic data.

At an institutional level, LMCC has undertaken innovative responses that suggest a clear understanding of both local conditions and best practice approaches to local economic development. For example, over the past decade LMCC has:

- created an independent economic agency to drive strategy and engage directly with investors,
- explicitly incorporated economic development and transition priorities across its core functions,
- changed its development assessment approach to send positive market signals regarding the local investment climate,
- adopted a long-term urban agglomeration focused land use planning and economic strategy,
- leveraged natural and liveability assets to attract visitors and younger workers and families, and
- prioritised reuse of brownfield and now post mining lands to drive residential and business activity.

In sum, LMCC has perceived an economic shift that is highly consequential for its community, adopted a robust long-term strategy that applies many if not all of the tools available to local government to manage change, and achieved results. This is a significant outcome for a place experiencing a fundamental structural transition. The next decade, however, poses even sharper challenges.

Looking forward, the next five years will see the closure of the Eraring Power Station, with a very high likelihood of flow on impacts to supplying mines. We estimate, without considering supply chain multiplier effects, this will contract around 5% of output in the local economy in a short time frame.

Most of the change in the local mining sector, while experiencing volatility and some contraction over the past decade, is still in the pipeline. The cost structures, environmental and planning constraints, coal quality, and constrained export access make the remaining local mines more vulnerable to changes than in other regions. In addition, while decline in manufacturing has slowed, the trajectory is still negative.

Despite previous change, mining and manufacturing are still the second and third largest contributors to the local economy. These sectors still drive substantial economic dynamism, employment and supply chain activity. Their further erosion, in addition to that of power generation, poses significant risks.

Conversely, while the new propulsive sectors of construction, health and social assistance provide strengths – for example, durable demand for local manufactured products and well remunerated blue-collar employment for the former, and consistent activity in the care sector that is resistant to economic shocks – these industries' reliance on population growth for ongoing expansion has clear weaknesses.

The data reveals that, despite solid growth, Lake Macquarie's economy has become considerably less productive, as reliance on low value-added service sectors increases as tradeable export goods decline. Ultimately, a less productive economy will impact local income, wealth and business activity. Dependence on construction – now the City's dominant sector by output – also creates vulnerabilities related to business cycles and a reliance on increasingly scarce development lands.

In regard to emerging sectors, there is good news regarding large scale investment, and positive growth in employment in tourism and visitor economy sectors. Alternatively, however, there has been no progress in capturing a greater share of the 'tradeable' professional and knowledge services that increasingly provide value added income in larger urban economies. The gap between Lake Macquarie and statewide rates of post school education attainment, particularly in the tertiary skills that are critical for building the 'human capital' that attracts new economic activity, also continues to grow.

Taken together, these conditions suggest an inevitable set of accelerating near term challenges, against a backdrop of material strengths and structural weaknesses. Notwithstanding the recent history of success, there are approaching limits in local government capacity to meet the scale of impending change. While LMCC continues to grow its portfolio of economic development actions in line with best practice, many of the activities executed to date require ongoing attention. Moreover, investments and decisions in essential activities such as post mining land use, precinct development, infrastructure and education are beyond the resources of local government.

At this inflection point, where effective recent efforts meet predictable accelerating change, there is significant opportunity for collaboration between LMCC, and the New South Wales and Australian Governments and relevant agencies. Lake Macquarie has thus far effectively navigated a sizeable economic transition, with a local government that has established itself as a reliable and skilled leader and partner.

This is now an opportunity to leverage this experience to establish a nation-leading example of regional economic change management, and to test and trial methods that can benefit other regions, through project specific partnerships. Research-informed recommendations to these ends are made below, comprising potential collaborations with state and federal governments, 'quick wins', and local activities that are particularly pivotal in navigating the coming decade of substantial economic change.

Recommendations

Land Use Planning

1. NSW Government to investigate legislative and/or procedural change to facilitate adaptive reuse of former mining lands.
2. Allocation of clear and permanent responsibility and funding to a state government body to facilitate adaptive post mining land uses.
3. Maintain positive local investment climate through 'problem solving' approach to development approvals, including ongoing state government collaboration and incentives.
4. Continue and expand utilisation of Council land assets and strategic development of privately held land to meet specific economic development strategies.

Precincts & Infrastructure

5. Prioritise the Cockle Creek West expansion of the North West Catalyst Area as one of NSW's most significant urban and employment land brownfield redevelopment precincts.
5. NSW and Australian Government support for and investment in road, community and other infrastructure to maximise tourism, logistics, and residential development in the Morisset Regionally Significant Growth Area.
6. Upgrade digital infrastructure in Western Lake Macquarie to ensure continuous mobile connectivity for Newcastle to Sydney rail line.

Education & Skills

7. Prioritise acceleration in the rate of post school qualification attainment in the working age population – particularly tertiary education rates.

Tourism, Culture & Amenity

8. State and Federal program and infrastructure investment to support the growth of Lake Macquarie as a tourism, arts and culture destination.
9. Continue to develop and market Lake Macquarie's lifestyle, culture and environment proposition to attract younger and high skilled workers.

Manufacturing & Knowledge Sectors

10. Reprioritise the retention and stabilisation of the local manufacturing sector at its current size, including local utilisation of Australian Government programs.
11. Investigate the development of suitably located commercial office spaces to house professional services businesses, to leverage the increase in resident knowledge workers.

Maintain Proactive Economic Development Activities

12. Maintain investment in cutting edge local economic development in Lake Macquarie, including leveraging opportunities for New South Wales and Australian Government support as a live example of effective management of regional structural change and transformation.
13. Continue to prioritise intra-regional collaboration on economic development, infrastructure and land use planning activities.

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1. Economic Change in Lake Macquarie

1.1. RESEARCH OVERVIEW

The City of Lake Macquarie is situated on the traditional lands of the Awabakal people. It has a population of 214,000, making it the largest local government area in the Lower Hunter region that also includes Newcastle, Maitland, Cessnock and Port Stephens. Lake Macquarie has strong industrial and commuter links to the Hunter coalfields, adjoins the Central Coast, and is directly connected by freeway and rail to Sydney, 100 kilometres south. Geographically, the City is wrapped around the natural environment of the Lake itself, and includes substantial coastal, beach and natural bushland assets.

Economically, Lake Macquarie has historically relied on coal mining, power generation, and manufacturing, but has begun to experience large structural changes in the local economy over recent decades. These changes have continued in earnest over the past ten years.

This briefing paper, undertaken by the University of Newcastle's Institute for Regional Futures for Lake Macquarie City Council, deploys several analytical approaches to make sense of these changes. The paper also assesses the steps taken in response, and the actions likely to be required to manage ongoing and accelerating changes to the benefit of the local community.

Section 1 interrogates economic change in the period since 2011¹. This includes the trajectories of key industries, and relevant demographic, employment and skills trends. An assessment of key issues requiring attention over the coming decade, based on observed trends and widely acknowledged changes expected in key sectors, is then undertaken.

Section 2 describes the rationale for local economic development actions as a response to structural change, and the 'toolkit' of actions available to local government. The actions undertaken by LMCC over the last decade are then reviewed, drawing on document review and interviews with internal and external informants. LMCC actions are mapped against leading practice to assess and summarise the structural change response to date.

Section 3 concludes by focusing on potential actions required over the next decade, emphasising areas for collaborative action between Lake Macquarie City Council, and the NSW and Australian Governments.

1.2. CHANGE IN THE LAKE MACQUARIE ECONOMY

Over the past decade, Lake Macquarie has been exposed to significant economic change. These shifts reflect broader trends, amplified into the local economy by exposure to particular industries and conditions. These circumstances include population growth, manufacturing decline, the rise of services industries, and volatility and contraction in coal mining.

While some of these changes are positive or benign, there is significant potential for adverse structural changes and events. Given this reality, understanding strengths and risks is critical for planning for and adjusting to change for the benefit of the community (Beer 2015). Leading research identifies the mix of local industries – and particularly the local productivity and performance of those industries – are a critical influence on the capacity of a local economy to adapt (Martin *et al* 2016).

This section unpacks what has changed over the past decade, through an analysis of industry, workforce and demographic statistics; deploying an aggregated 'sector model' of industry change (Schafran *et al.* 2018); and undertaking a 'shift share' analysis of employment by industry (Dunn 1960, Artige and Van

¹ Selected as a base year given Census collection years give a firm basis for analysis. Analysis on economic activity uses the latest available REMPLAN data (2022) as the comparison year. Analysis regarding employment and skills use the 2021 Census as the most reliable basis for comparison.

neuss 2014, Martin *et al.* 2016). This analysis is then used as the basis for considering issues that require policy responses over the coming decade.

As a starting point, and despite prevailing shifts and stresses, Lake Macquarie has maintained strong growth over the past ten years. Gross Regional Product² grew 29% from 2011-22. Although one third lower than the statewide figure, this is a strong result given that the economic gravity of Greater Sydney dominates statewide activity (Table 1). Critically, however, there are substantial changes ‘swimming below the surface’ of this continued growth.

Table 1: Summary of Economic Statistics, Lake Macquarie, 2011-22

\$M (2022 prices)	2011	2022	Change %
Gross Regional Product	\$10,079.32	\$13,000.995	29.0%
NSW Gross State Product	\$445,268.00	\$649,173.00	45.8%
Population	189,005	213,845	13.1%
NSW Pop	7,258,722	8,100,840	11.6%
Per Capita GRP	\$0.053	\$0.061	14.0%
NSW GSP Per Capita	\$0.061	\$0.086	40.3%
Jobs in LGA	51,584	73,233	42.0%
Workers in LGA	81,882	95,970	17.2%

Looking across the nineteen top line industry categories defined by the Australian Bureau of Statistics (ABS 2013, REMPLAN 2011, 2022), sixteen growth sectors added \$7.6 billion worth of output³. This increase was dominated by construction, comprising 42% of total growth, and health care and social assistance, at 17% of output growth (Table 2). Construction output increased 166% over the decade, five and a half times faster than the rest of the economy, and health care & social assistance outpaced the rest of the economy almost as quickly, growing 127%.

Conversely, three sectors declined in output, with a combined contraction of \$1.6 billion. Manufacturing comprised 86% of this decline, wholesale trade shrank in line with economy-wide trends, and mining experienced a small decline (masking considerable volatility).

Historically, and still to a significant extent, Lake Macquarie has relied on coal mining, manufacturing, and domestic energy generation as key exporting sectors. A granular look at these sectors shows different situations – and a likely convergence over the coming decade to a shared contraction trajectory.

Firstly, while coal power generation (from the Eraring power station) is a much smaller share of local output than either mining or manufacturing (\$287m, or 1% of local output in 2022), power generation has been a largely stable industry supporting high income jobs and local supply chains over the past seventy years. This stability will change with the closure of Eraring in the coming years.

The experience of coal mining is more complex. While its output in 2022 was down somewhat compared to a decade earlier, this masks significant volatility, from resource boom highs in the 2000s, to the 2013-16 downturn, and recovery in subsequent years. In addition to this cyclical view, there are also clear indicators of structural decline. For example, the number of local mines has shrunk to two, output figures

² Economic outputs produced minus the inputs that went into making those goods and services.

³ Gross revenue across all business and organisations in an industry.

have been boosted by high prices generated by international events over the past two years, and there is limited prospect of new approvals due to various resource and environmental constraints.

Manufacturing demonstrates a more marked contraction. The ABS disaggregates fourteen major manufacturing sectors. Of these, nine contracted in Lake Macquarie, with the aggregate annual output of these subsectors declining by \$1.46 billion between 2011 and 2022. This contraction was dominated by food production, and technical equipment and transport equipment manufacturing, in line with notable closures in train rolling stock manufacturing and several food production facilities. A set of other sectors also experienced contractions in the tens to \$120 million range, including metal, chemical and clothing manufacturing. Conversely, five sub-sectors experienced growth, for a total of \$102 million, most significantly beverage and furniture manufacturing.

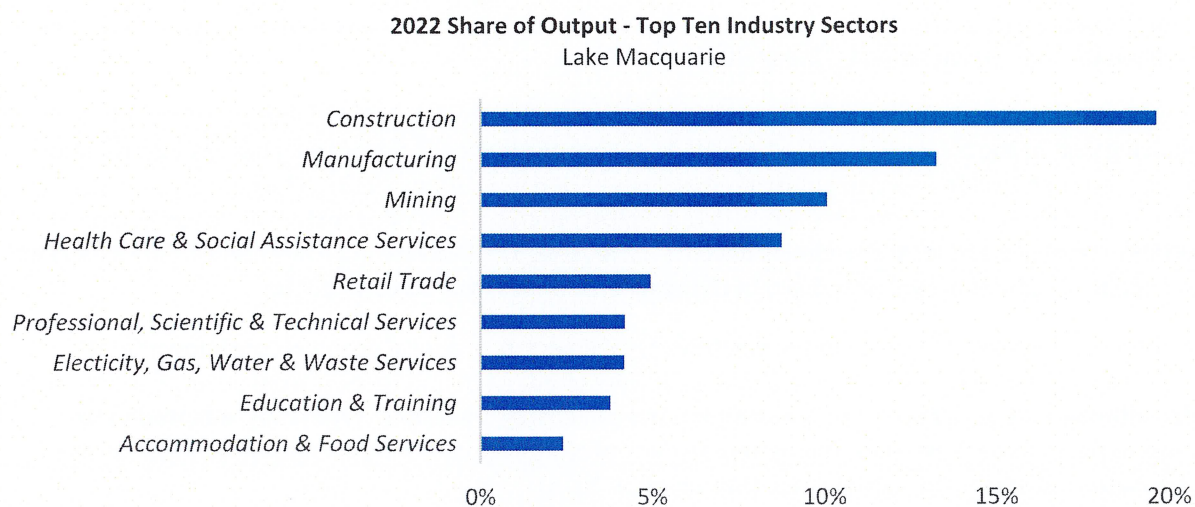
Table 2: Growth Sectors - Proportion of Total Output, 2011-22

Growth Sectors: Output \$M	2011	2022	Change	% Total Growth
Construction	1,925	5,125	3,200	42.2%
Health Care & Social Assistance Services	1,007	2,284	1,278	16.9%
Rental & Hiring Services (except real estate)	1,979	2,618	639	8.4%
Education & Training	607	981	374	4.9%
Public Administration & Safety	510	858	348	4.6%
Professional, Scientific & Technical Services	749	1,094	345	4.5%
Electricity, Gas, Water & Waste Services	833	1,088	255	3.4%
Retail Trade	1,043	1,288	245	3.2%
Other Services	397	627	230	3.0%
Financial & Insurance Services	1,113	1,281	168	2.2%
Transport	529	683	154	2.0%
Administrative & Support Services	339	487	148	2.0%
Information Media & Telecommunications	211	270	59	0.8%
Accommodation & Food Services	570	623	52	0.7%
Agriculture, Forestry & Fishing	61	105	44	0.6%
Arts & Recreation Services	127	168	42	0.5%

In terms of the *share* of local economic output, manufacturing declined from one quarter to one eighth of the Lake Macquarie economy over the past decade. However, it was still the second largest sectoral contributor in 2022. Mining declined from 13% to 10% of the economy, slipping from the second to third largest industry by output (Figure 1.2).

By comparison, construction rose from 10% to 20% of local output, becoming the largest sector. Health care and social assistance showed the second largest increase, from 5% to 9%. An important reflection is that these substitute drivers of growth were directly linked to population increase, as opposed to external sources of demand for goods and services.

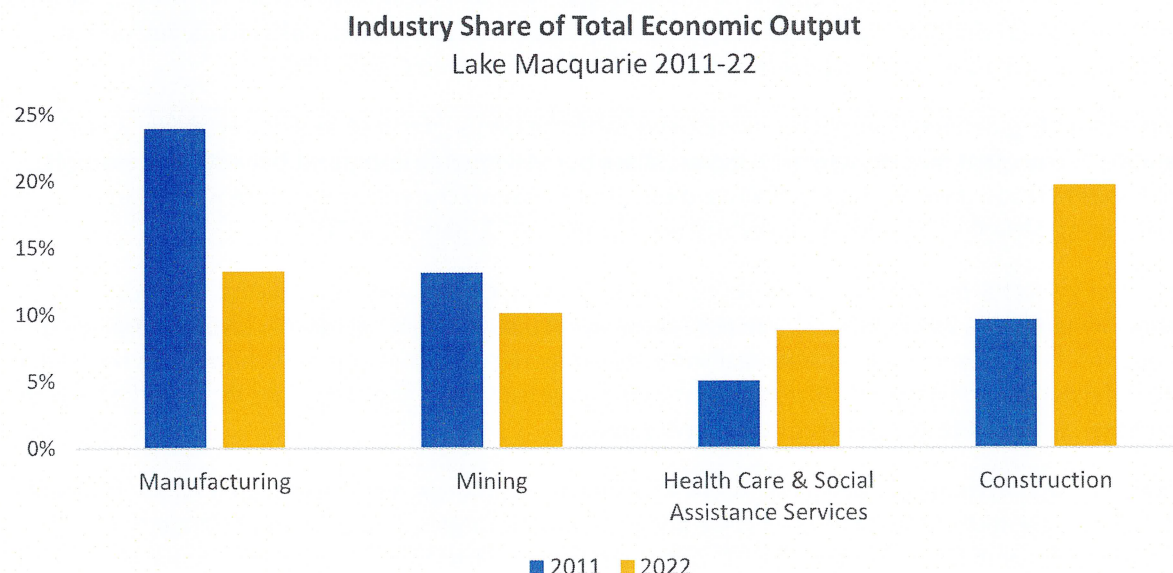
Figure 1: Share of Output, Lake Macquarie, 2022. Source: REMPLAN 2022



The gradual replacement of higher value-added, export-focused industries by population servicing sectors would be anticipated to affect productivity, given the lower average output per unit of capital and labour inputs for these expanding sectors. This appears to have been the case in Lake Macquarie, with GRP per person increasing by 14% over the past decade, compared to a 40% increase at state level. Put another way, the economic value created per person in Lake Macquarie has declined from 86% of the NSW average in 2011, to 70% in 2022 (Table 1).

The transition from more to less productive sectors can also be seen in statistics of value added⁴ by sector. Over the past decade, mining declined from 15% to 9% of local value-added production, and manufacturing from 12% to 5%. Comparatively, construction and health care and social assistance both doubled their share, from around 7% to 13% (REMPAN 2011,2022).

Figure 2: Industry Share of Economic Output, largest change, 2011-2022 (REMPAN 2011,2022)



These patterns of declining ‘tradeable goods’ and increasing population-servicing sectors suggest a true ‘structural change’ is occurring in Lake Macquarie’s economy – that is, where the relative size of different

⁴ The value of final goods and services minus the inputs required to produce them.

industry types evolve over time to exhibit fundamental differences in production compared to a previous time period. In general terms, such structural changes usually follow a broad set of patterns as economies mature from primary production and resources to industrial production and manufacturing, followed by the dominance of service sectors (Thakur 2011).

This process of regional structural change is often described as inducing vulnerabilities, particularly the 'hollowing out' of the local economy, where value adding production is replaced by less productive and often government funded service industries (Hewings *et al.* 1998, Hobor 2013). Alternatively, there is evidence of convergence of industry mixes in regional economies, as service sectors increasingly dominate national economies and local economies become more alike. The increase in government-funded services also appears to confer a level of stability in changing economies (Martin *et al.* 2016).

The particular industry structure and competitiveness of sectors in a local economy *are* known to be correlated with vulnerability to events and the capacity to adjust to and recover from adverse shocks and shifts, although these relationships are complex and can change over time. Ultimately, adaptation to change appears to be dependent on the productivity of whatever local industries exist, as much as the particular *mix* of sectors in a given place (Martin *et al.* 2016).

Making sense of these complex structural changes and vulnerabilities in a specific regional economy requires particular techniques. 'Sector models' seek to aggregate (or 'decompose') different related industries to unveil a more straightforward picture of change (Jackson *et al.* 1998, Schafran *et al.* 2018).

Historically, these models have identified three sectors – primary (resources and agriculture), secondary production (manufacturing), and tertiary (other sectors). However, reflecting their increasing dominance in developed economies, services have been disaggregated into new categories including private services (for example banking, food and accommodation), the quaternary sector (knowledge jobs such IT and professional services), and the quinary sector (government provided and funded services) (Schafran *et al.* 2018, Thakur 2011).

This categorisation has become important as regions devise strategies that seek to attract the 'tradeable' services that produce greater activity and bring in income from elsewhere, functioning in similar way to previously dominant mining, manufacturing and agricultural exports (Kline and Moretti 2014, Lee and Clarke 2019). For example, human capital-based strategies seek to develop and attract high skilled workers to set the enabling conditions for establishing tradeable service sectors such as software development, finance, digital, and other professional services (Moretti 2013, Lee and Clarke 2019).

The understanding derived from sector models also facilitates strategies that seek to retain key wealth generating sectors that may decline in economic share but still provide important benefits. For example, seeking to retain and diversify supply chain and other local manufacturers for locations where large manufacturing facilities have closed or restructured (Hobor 2013, Beer *et al.* 2023).

A bespoke five sector model of changed output in Lake Macquarie has been constructed to reflect key industry changes since 2011 (Table 3). We note these aggregated sectors necessarily involve simplifying assumptions, reflect constraints of statistical industry categories, and that different choices can be used to create different decompositions.⁵ These judgements notwithstanding, the categories described here have been chosen to illustrate key changes in the local context.

Mining and manufacturing (as well as the small agriculture sector) have been aggregated into a 'tradeable goods' sector, given their significance as value added economic drivers, and their shared trajectories of observed or expected future contraction. IT, communications, software and professional services (such as

⁵For example, the inclusion of utilities and food and accommodation in the 'population servicing' sector obscures the respective decline of power generation and growth in tourism (these specific sectors are addressed using additional analysis in the following sections). Separate analysis is undertaken to illustrate change in these sectors.

accounting and consulting) have been aggregated in a 'knowledge sector', given their potential as tradeable services (noting these services are currently largely focused on servicing the local population).

Government services are defined as public administration, health, social services, and education. Construction has been separated out given its increasing importance in driving local economic activity. The remaining sectors have been aggregated as 'population servicing', incorporating private sector services such as transport, banking, administration, rental and hiring services, and food and accommodation, as well as utilities.

Analysis of these decomposed categories for Lake Macquarie illustrates clear patterns and suggests some conclusions (Table 3). Firstly, construction and government services are confirmed as the key growth sectors over the past decade, growing 166% and 94% respectively, compared to the local economy wide growth rate of 30%. This reinforces the importance of population growth in driving economic activity. This reliance also reinforces the importance of facilitating and attracting investment in commercial and residential development to maintain population expansion.

Secondly, tradeable goods (manufacturing and mining) were the only declining sector, contracting by a fifth. It is important to note, however, that this sector was still the second largest generator of output. This has significant implications – it is likely that most of the contraction is still in the pipeline, and that observed 'hollowing out' challenges of productivity and loss of value-added sectors will become more pressing over time.

Thirdly, the population servicing sector, comprising privately provided services, as well as utilities, has grown slightly to become the largest sector, after being on par with tradeable goods at the beginning of the analysis period in 2011. As a sector aggregating a large number of industries, there are also countervailing internal trends. For example, some industries, including accommodation & food, and arts & recreation, have potential for growth in the tourism sector, and the closure of the Eraring power station (currently 1% of total local output) will reduce the output of this sector.

Finally, the knowledge sector has grown a third faster than the rest of the economy, suggesting a foundation for building the scale of industries such as professional services and information technology that can be exported beyond the local economy. Conversely, however, these industries comprise only a relatively small proportion of local output, and face challenges in securing market share against the concentration and faster growth of these industries in capital city areas.

Table 3: Five Sector Model, Output and Value Added Per Worker, Lake Macquarie, 2011-21. Data Source: REMPLAN 2011, 2022.

Output \$M (2022 Prices)	2011	2022	Change %	Value Added Per Worker 2022 (\$M)
Construction	\$1,925	\$5,125	166%	\$0.16
Government Services	\$2,124	\$4,124	94%	\$0.13
Knowledge Sector	\$960	\$1,363	42%	\$0.21
Population Servicing ⁶	\$7,588	\$9,307	23%	\$0.17
Tradeable Goods	\$7,506	\$6,189	-18%	\$0.30
Total	\$20,102	\$26,108	30%	\$0.19

⁶ Rental and Hiring Services are excluded as due to the distorting effects if its inflated value added compared to the 'real' economy.

Ultimately, the core trends showing through this sectoral analysis are the relative contraction of export orientated value adding sectors, and their substitution with less productive industries underpinned by population growth. At an aggregate level, this can be seen in the decline of 'value added per worker' – a productivity measure of the value of (final) goods and services per labour input – in Lake Macquarie, from \$153,000 to \$138,000 per worker between 2011 and 2022.

At a sectoral level, tradeable goods have the largest value added per worker in 2022, at \$303,000, followed by the knowledge sector, at \$206,000. Population servicing industries provided around \$170,000 per worker, although this is driven considerably by electricity and utilities and financial services compensating for high volume, lower productivity sectors. Construction adds \$157,000 of value per worker, and government services are considerably lower at \$126,000.

At an individual industry level, mining has by far the largest value-added productivity, at \$581,000 per worker, followed by the electricity and utilities sector (\$407,000), influenced heavily by power generation, financial services (\$390,000) and information, media and telecommunications (\$258,000). At the lower end of the scale, administrative services, education and training, health care and social assistance, retail, 'other' services, arts and recreation, and accommodation and food have value added per worker below the local average of \$138,000.

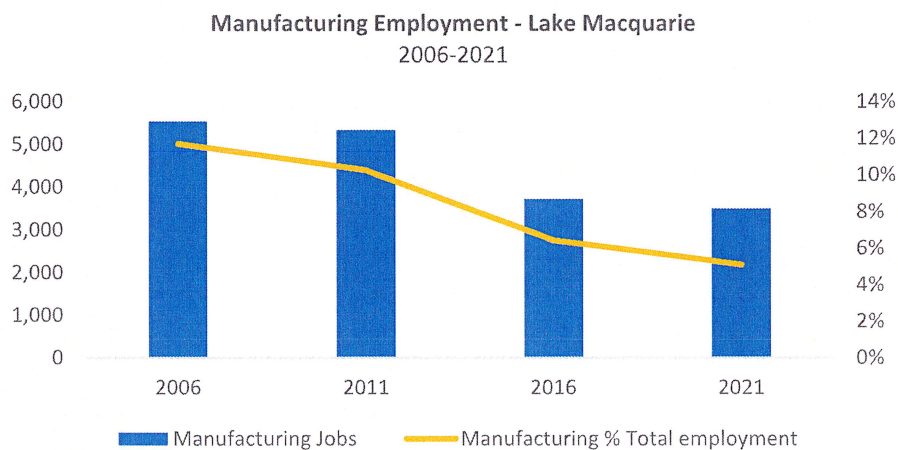
1.3. EMPLOYMENT BY INDUSTRY

In addition to the simplifying assumptions of sector models, it is also important to interrogate a more granular level of industry change. Job figures provide a reliable way of doing this, given the availability of Census data for highly disaggregated industries at the local level.

Considering each industry's share of jobs in the local economy, most sectors showed only small changes over the period from 2011-21 (notwithstanding the large dip in mining employment in the intervening 2016 Census). The exceptions to this stability, however, reinforce the previous analysis on changes in output in specific sectors.

Manufacturing reduced employment from 5,300 to 3,500 jobs, with its share of employment falling from ten to five percent of all local jobs. Of note is that the majority of this loss was in the five years to 2016, with some stabilisation in the decline trend visible, with only 218 jobs lost between 2016 and 2021 (Figure 3). Retail and wholesale trade, and financial services also saw declines in their share of jobs, reflecting broader industry restructuring trends.

Figure 3: Manufacturing loss in Lake Macquarie. Source: Census



Mining shows a particularly unique set of changes. The cyclical nature of the industry is highlighted by the movement from 1300 jobs in 2006, to 1600 in 2011, before declining back to 1300 roles in 2016. The initial rise was based on several large expansions given the mining boom demand and investment cycle, including export opportunities in addition to the traditional local power station market.

This expansion was followed by the closure of several operations following the mining downturn in the mid-2010s. The position of local operations as higher on the cost curve compared to competing operations, various resource and environmental constraints, and most local operations being closer to the end of their operational lives resulted in permanent, or effectively permanent, closures. Over recent years, the expansion of one large operation in particular (Mandalong), as well as the increased numbers of ancillary roles required for operations, and residual roles at several ‘care and maintenance’ sites, has resulted in there being around 150 more roles in 2021 compared to 2011. However, as a percentage of local employment mining slipped from 3% to 2.5% from 2011 to 2021. Likely future conditions are discussed in Section 1.5.

Turning to growth sectors, the number of jobs in construction doubled, from 4000 to 7600, rising from 8% to 11% of all employment. Health care and social assistance experienced similar growth, from 7600 to 13,900, growing to a fifth of all jobs in Lake Macquarie, and overtaking retail as the largest employer, which slipped to second.

Construction became the third largest employer in 2021 – a position held by manufacturing in 2011 – while education and training, and accommodation and food retained their shares at 9% and 8% respectively, rounding out the top five industries by employment.

Deploying the five-sector model (Table 4) described in the previous section shows the share of employment in tradeable goods declining from 14% to 8% over the decade. Employment in manufacturing, mining and agriculture is now equal to the state average.

Conversely, knowledge sector jobs comprised only 5% of the Lake Macquarie economy, with no change since 2011. This is less than half the (Sydney-dominated) NSW share. Population servicing sectors also declined by 6 percentage points, faster than the NSW rate. This reflects higher local exposure to reductions in economy-wide employment in retail and wholesale trade, and retail banking, amongst other sectors.

The slack in jobs growth was taken up largely by construction, and by government services driven by health care & social assistance. Government services rose by six percentage points, to a third of all jobs, representing a share of local jobs four points above the statewide average. Construction rose three points, and similarly comprises a larger share of the Lake Macquarie economy compared to NSW.

Table 4: Sectoral Share of Employment, Lake Macquarie, 2011 - 2021. Source: Census, 2011, 2021.

Sectoral Share of Employment	LakeMac 2011	LakeMac 2021	Percentage Point Change 2011-21	NSW 2021
Population Servicing	45%	39%	-6%	39%
Government Services	28%	33%	6%	29%
Construction	8%	11%	3%	9%
Tradeable Goods	14%	8%	-6%	8%
Knowledge Sector	5%	5%	0%	11%

Another way to consider employment change is the share of *occupations* in the labour market. In 2021, the largest share of jobs in NSW were professionals, at 26%, followed by managers, at 15%, and clerical and administrative workers at 13%. Professionals were also the largest occupation in Lake Macquarie, albeit at

a much lower 18% compared to NSW. Trades, and community & personal service workers, were equal 2nd, both representing 15.4% of all employment in Lake Macquarie.

In terms of *change*, professional occupations grew by three percentage points statewide, but only one point in Lake Macquarie, demonstrating a widening gap. The most rapidly growing occupation categories in Lake Macquarie were community & personal service workers, growing from 6,000 to 10,500 workers. This was more than twice the NSW growth rate. This suggests jobs are shifting from service occupations in retail into government funded health and care sector activities at a greater rate than the statewide figures.

Of considerable note is that, despite the declines and volatility in manufacturing and mining, the number of trades, labourers, and plant operators grew, and largely maintained their share of occupations from 2011 to 2021. This offers some positives in regards to concerns of labour market scarring impacts on blue-collar workers experiencing change in industrial sectors. This smoothing of occupation change appears to be based on the expansion of the construction sector. It is likely that the relative stabilisation of the decline in manufacturing was also a mediating influence.

Sector specific data on employment can also be extended with analytical techniques to draw broader conclusions about economic changes. ‘Shift share’ analysis provides easily interpretable insights on change in employment over time and facilitates identification of industries where the local economy has productive strengths over and above those in the broader economy (Andrikopoulos *et al.* 1990, Artige and van Neuss 2014, Dunn 1960).

Using employment figures as a proxy for defining economic structure, shift share ascribes growth in a particular geographic area to one of three ‘components’:

- (1) State-wide economic growth
- (2) The ‘structural’ or ‘industry mix’ component, being growth attributable to industry specific growth rates *and* the relative size of those industries in a particular place and
- (3) A ‘differential’ or ‘productivity’ component (also known as the ‘regional’ or ‘local’ share), which represents local industry growth rates over and above the state and structural components – that is, the growth in employment that is attributable to specific local factors.

Shift share analysis undertaken for Lake Macquarie between the 2011 and 2021 Census periods identifies that 17,000 jobs were created in the City, at a 32% growth rate (Table 5). Around 11,000 of these jobs were attributable to the effects of statewide growth, rather than local industry mix or productivity specific factors.

The structural or industry component – the change in job numbers attributable to the state wide growth rates in each industry *and* the relative size of those industries in a specific place – had a negative impact, with the local industry structure removing around 600 jobs from the economy. This means Lake Macquarie is more exposed to industries that have lower growth rates than the state economy-wide average.

By comparison, the productivity or local component demonstrated a strong positive contribution of 6500 jobs. In effect, while having a mix of industries that has a notional negative impact, local industries are producing aggregate jobs growth at a higher rate than the same sectors in other regions.

Table 5: Share of Employment Growth in Lake Macquarie, 2011-21, State vs Industry vs Local Shares

Employment Growth, 2011-21	Component Attributable to NSW Growth	Structural (Industry) Component	Differential (Local) Component	% Total Growth
Percentage	21%	-1%	12%	32%
Jobs	10,963	-583	6,305	16,685

Table 6: Shift share analysis - share of employment change attributable to Lake Macquarie

Industry	2021 LGA Employment	Change 2011-21	Change 2011-21 (%)	State Industry Growth Rate 2011-21	Local Share of Employment Change	Local Share of Employment Change (%)
Health care & social assistance	13,880	6,267	82%	48%	2,595	34%
Construction	7,604	3,598	90%	42%	1,927	48%
Accommodation & food services	5,596	1,452	35%	10%	1,019	25%
Administrative & support services	2,058	712	53%	18%	476	35%
Other services	3,184	620	24%	8%	417	16%
Retail trade	8,698	549	7%	4%	244	3%
Education & training	6,213	1,639	36%	31%	236	5%
Arts & recreation services	824	230	39%	13%	154	26%
Public administration & safety	2,755	505	22%	16%	139	6%
Electricity, gas, water & waste services	822	134	19%	5%	100	15%
Professional, scientific & technical services	3,286	905	38%	35%	80	3%
Agriculture, forestry & fishing	253	76	43%	9%	60	34%
Transport, postal & warehousing	1,863	205	12%	12%	12	1%
Information media & telecommunications	368	-14	-4%	-4%	3	1%
Rental, hiring & real estate services	942	124	15%	23%	-61	-7%
Mining	1,743	170	11%	16%	-86	-5%
Wholesale trade	1,095	-537	-33%	-23%	-154	-9%
Financial & insurance services	1,582	-124	-7%	24%	-539	-32%
Manufacturing	3,496	-1,841	-34%	-22%	-666	-12%
Total	68,753	16,685	32%	21%	6,305	12%

Analysing jobs growth in each industry using shift share techniques unveils which sectors have contributed to local employment, over and above what would be expected if statewide industry growth rates were repeated in Lake Macquarie (Table 6).

Construction demonstrated the largest percentage growth attributable to local factors, with 1,900 jobs. Health care and social assistance also added 2,600 jobs above the statewide rate. While this is likely to be partly attributable to the productivity of local businesses and service providers and other factors such as competitive development approval timelines and a positive investment climate, a substantial component of this local productivity is likely to be linked to accelerating population growth.

An additional significant finding is that accommodation and food services experienced the third-largest growth of any industry that was attributable to local factors, representing over 1,000 jobs. The arts and recreation sector, although representing a smaller number of jobs, experienced similar local growth rates

over and above the statewide rate. Taken together, this suggests that these tourism-linked industries are providing a growing source of jobs, with meaningful local advantages.

Less positively, shift-share analysis shows no particular advantages in knowledge sector roles in professional, technical and scientific services, or information, media and telecommunications, where growth only slightly exceeds NSW rates. This shows the substantial challenge in seeking to expand knowledge based industries that have a low local employment share and are overwhelming concentrated in specific areas of Sydney (Institute for Regional Futures 2023).

In regard to manufacturing, employment contracted more quickly than the statewide decline. As well as having a substantial exposure to manufacturing, this likely reflects several large facility closure events in the 2011-16 period, prior to more recent stabilisation, as well as potentially reflecting local competitiveness issues. In relation to mining, while employment in the LGA rose slightly over the decade, locally attributable factors had a negative effect on jobs growth, compared to the statewide growth rate. This potentially reflects the known challenges with lower productivity in local mines compared to larger operations in other regions.

1.4. POPULATION, COMMUTING, AND SKILLS

One of the key economic concerns in Lake Macquarie has been a decline in the working age population. Data from the early 2000s shows this as a well-founded concern. Between 2001 and 2006, the 25-34 population declined 10%, and the 35-44 age bracket by 5%, while the 65 and over population grew faster than the state average (Figure 4).

The 2021 Census shows Lake Macquarie has an older population than the NSW average, with 22% of the local population over 65, compared to 18% for NSW. At the younger end, 11% were aged 25-44, compared to 14% statewide.

However, recent trends suggest an improvement. In particular, population growth in the 25-34 age group in Lake Macquarie over 2016-21 outstripped the statewide rate by four percentage points, with similarly positive rates in the under 25 population. Conversely, growth rates in the 55+ group were below the NSW average (Figure 5).

This growth in younger age groups has accompanied significant local population growth. There are 128 LGAs in NSW. Between 2016 and 2021, Lake Macquarie added 11,600 residents, a figure only exceeded by eight council areas, all located in Greater Sydney. This was a significant acceleration from the 2011-2016 period, when Lake Macquarie was the 26th fastest growing council area in the state.

In addition to population, the availability of work in Lake Macquarie has been an ongoing area of focus. The 2021 Census shows Lake Macquarie as having a jobs-to-workers ratio under 1 – with around 23,000 less jobs than workers. This puts Lake Macquarie in the bottom quarter of LGAs in NSW.

However, this ranking masks significant recent improvement. In the first decade of the 2000s, the jobs-to-workers ratio was around 0.6 – that is, four in ten workers needed to travel outside Lake Macquarie for work. This has improved markedly over the past decade, climbing to 0.67 in 2016, and 0.71 in 2021.

Lake Macquarie has a particularly close labour market relationship with Newcastle, an LGA with a positive jobs-to-workers ratio only exceeded by a handful of inner Sydney and mining areas around the state. The 2021 Census shows 32,000 workers commuted from Lake Macquarie to Newcastle for work (65% of commuters), and 13,000 travelled in the other direction, suggesting an at least partially two-way labour market. There are also roughly equal numbers of people commuting in and out of Lake Macquarie from neighbouring LGAs including the Central Coast, Cessnock, Maitland and Port Stephens.

While overall numbers are still relatively small, commuting to Sydney almost doubled between 2011 and 2021 to 3400, or 3.5% of the working population. The share of the workforce who worked from home also spiked from 4% to 21% of resident workers.

Another significant factor in local employment access is that Lake Macquarie forms a contiguous urban area and labour market with surrounding areas. Around half of the 98,000 workers in Lake Macquarie work elsewhere, while 25,000 workers come in to Lake Macquarie from other LGAs. By profession, inflows slightly favour sales, community and personal service workers, while professionals are somewhat overrepresented as out-commuters.

While 2021 Census data is significantly affected by Covid, the structural shift in work from home, combined with a non-trivial increase in out-commuters to Sydney, suggests Lake Macquarie is realising the benefits of proximity to the Sydney’s labour market, with attendant benefits for attracting younger, highly educated workers with skills and/or earned income to contribute to the local economy. The data supports this conclusion, with growth in resident workers in knowledge sectors in Lake Macquarie growing around 20% faster than the state average between 2016 and 2021.

Figure 4: Population Change by Age, Lake Macquarie vs NSW, 2001 - 2006. Source: Census, 2001, 2006.

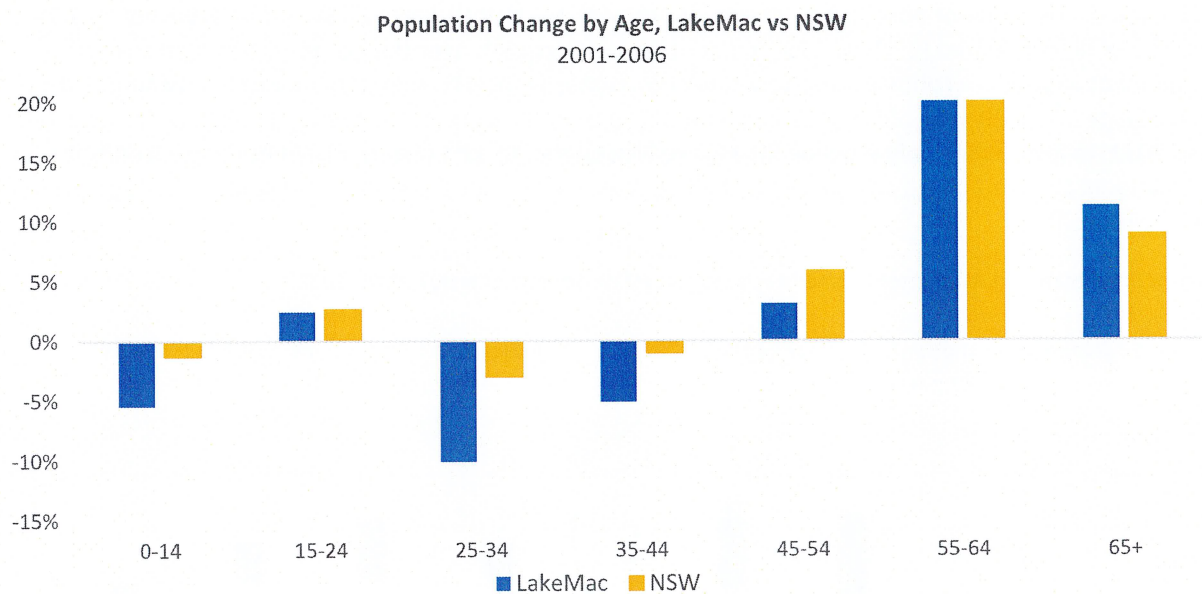
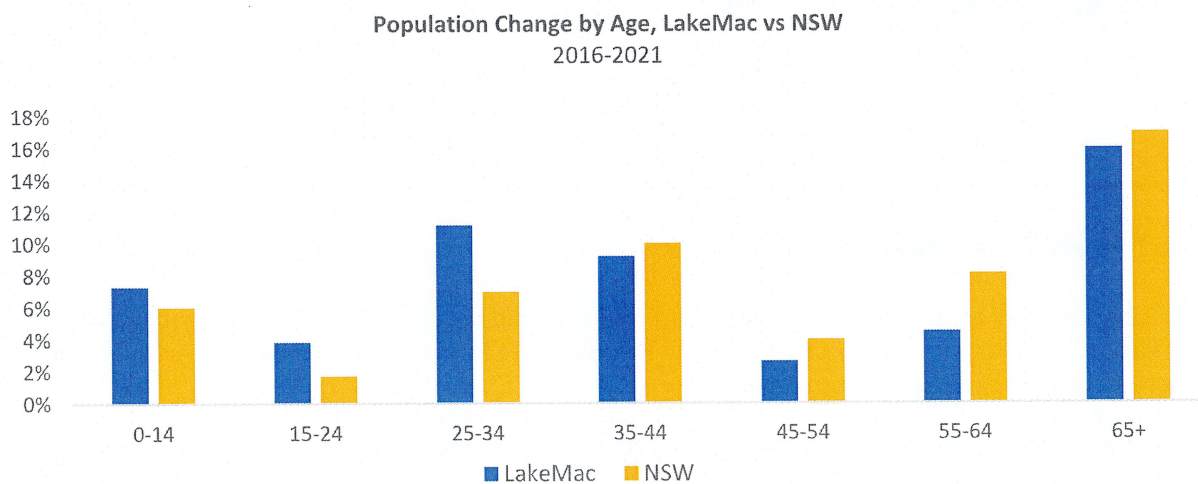


Figure 5: Population Change by Age, Lake Macquarie vs NSW, 2016 - 2021. Source: Census, 2016, 2021.



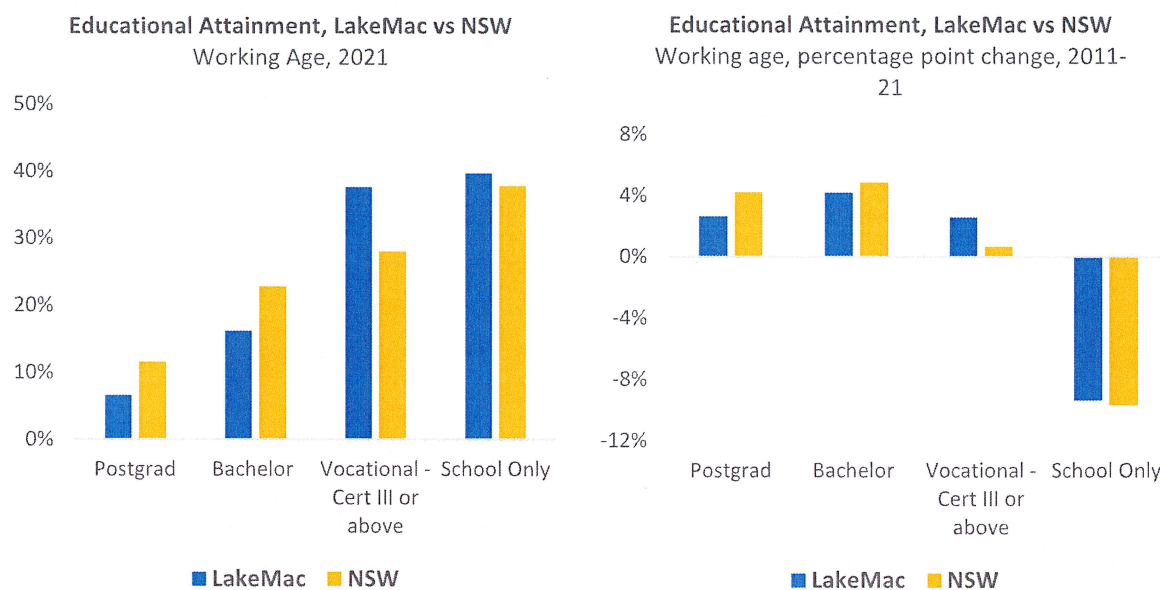
Local levels of educational attainment have also been a significant structural concern. Trends in post school educational show mixed signs. While Lake Macquarie continues to have a lower percentage of tertiary education holders, the percentage of those in the working age population with no post school qualification is only two points higher than NSW, due to a strong advantage in trades and vocational qualifications.

Importantly, the decline rate for those having no post school qualification almost matches the statewide rate of change over the past decade. This suggests that Lake Macquarie is succeeding in educating and attracting those with post school qualifications at a similar rate to NSW.

Read less positively, however, this trend suggests that Lake Macquarie is just keeping pace with aggregate levels of skills development in NSW, whereas aspirations to attract and grow knowledge-based sectors and well remunerated workers requires a bridging of the gap, particularly regarding bachelor and higher degree training.

Lake Macquarie’s rate of post school attainment growth has slightly lagged NSW on both bachelor (4.2% vs 4.8%) and higher degree (2.6% vs 4.2%) percentage point growth over the last ten years. Patterns of attainment in younger cohorts also show slower increases in local tertiary attainment. For example, the percentage of 15–29-year-olds with a bachelor’s degree in NSW grew 5 percentage points between 2011 and 2021, to 23%, while only growing 3% in Lake Macquarie, to 12% (Figure 6). Unless these trends in educational attainment are changed, it is likely that aspirations for the growth of higher skilled sectors will be challenged.

Figure 6: Educational Attainment, Lake Macquarie vs NSW. Sources: Census 2011, 2021.



1.5. THE NEXT DECADE

The data described above shows major structural changes. The ongoing contraction of manufacturing, volatility and unmistakable indicators of a time limited future for coal mining, and the structural loss of retail jobs are consequential areas of concern.

These trends were largely balanced, however, by strong output and jobs growth in construction activity and health and social services, as well as employment expansion in sectors such as food and accommodation. The local economy grew consistently over the past decade, and population growth outpaced NSW.

Moreover, several long running local concerns exhibited positive trends, with improved local job availability and the attraction of younger age cohorts. Common challenges for restructuring industrial economies, such as structural reductions in availability of blue-collar jobs, have thus far been avoided. More ambiguously, while post school education levels have almost kept up with statewide figures, the tertiary skills required to generate new forms of economic activity remain low, and the gap is widening.

Potentially of concern is the reliance on population propelled sectors in filling the gap caused by the decline of value adding industries in mining and manufacturing. Construction and care sectors have become more critical and offer good work and careers. Given the liveability of Lake Macquarie and broader population trends, these industries likely offer a measure of enduring economic activity. Population increase also has long run benefits in reaching the scale and connectivity required for 'urban agglomeration' economies (Dantia 2018, Glaeser and Gottlieb 2009).

These benefits notwithstanding, however, reliance on population growth has downsides. Most visibly, vulnerability to business cycle changes and events, and reliance on ongoing availability of land for residential and employment development (see Section 2.3). Primary reliance on population-driven sectors also poses long run underlying challenges to local productivity – an issue that ultimately flows through to economic output, wealth and employment. The decline of more productive sectors, and the clear challenges in substituting in contemporary high value sectors such as knowledge jobs that are dominated by large capital city areas, likely present ongoing issues.

Taking these conditions as a baseline, there is a set of perceptible trends and circumstances that will likely or plausibly impact the Lake Macquarie economy over the next decade. Some trajectories – such as the closure of power generation and mining operations – can be identified with high confidence, while others are less certain or can be moderated with well-considered program, policy and investment responses.

In the interests of providing clear and practical insights, rather than seeking to undertake multi-sector modelling on a complex and interacting set of factors, some of which are subject to substantial uncertainty, or to aggregate judgements across different influences to generate scenarios, what follows is a description of the likely direction-of-travel for key industry and drivers, using sector-specific insights.

The two key influences on Lake Macquarie's economy over the coming decade will be the contraction in mining and energy industries, potentially allied with an ongoing decline in significance of the manufacturing sector; and the pace and demographic composition of population growth.

Beginning with mining and power generation, both sectors have a clear and linked trajectory. Coal power generation comprised 1% of local output in 2021, and the Eraring power station is currently scheduled for closure in 2025 (AEMO 2023). At the time of writing, there is uncertainty about whether this date will be extended, however closure is likely to be well in advance of the 2032 'end of life' date.

While there are prospects for reuse of transmission infrastructure for energy or industrial developments on the Eraring site, local renewable energy resources (sun and wind) are highly limited compared to the western NSW renewable energy zones where generation investments are concentrated. In terms of assessing structural change, our analysis assumes that the current economic and jobs activity generated by electricity generation will be effectively removed from the local economy.

In relation to mining, the Myuna Colliery solely supplies the Eraring power station, producing around 1.1 million tonnes of coal per annum (mtpa) and employing 250 people (Banpu 2023, Centennial 2023a).

Lake Macquarie's other mine is the larger Mandalong colliery, with a current production capacity of 2.8 mtpa, an approved production capacity of 6.5 mtpa, and around 600 workers (Banpu 2023, Centennial 2023b, DPIE 2022a). Mandalong supplies Eraring, as well as the Vales Point power station in the adjacent Central Coast LGA, and exports through the Port of Newcastle. Mandalong has a current approval until 2040 (DPIE 2022).

In addition, the Chain Valley Colliery is located just over the boundary of the neighbouring Central Coast LGA, with operations extending under the Lake Macquarie LGA. Chain Valley Colliery's operations, currently seeking a revised approval for production of 2.8 mtpa, are linked to the nominal 2029 closure date for the Vales Point power station, although 'life assessments' are currently underway regarding a potential 2033 extension (Delta 2021, 2023).

The relative pace of decline in mining in Lake Macquarie depends on several factors. Given the substantial reliance on supplying power stations with respective closure dates as early as the next two years, and at the latest in the next 10 years, and known quality, cost, and logistical challenges in shifting domestic production to export, a substantial decline risk can be assumed in the next decade (IGCC 2020).

While formal public assessments on additional mine extensions or approvals in Lake Macquarie are limited, recent experience suggests the prospects are highly limited. Mandalong's 2005 approval was the most recent greenfield approval, the costs of underground mining are prohibitive compared to larger and higher quality open cut operations in other regions, there is a consistent pattern of mine closure over the past decade, and there are substantial environmental constraints related to natural assets and populated areas.

Given these conditions, some exploratory modelling has been undertaken to consider the impacts of mine closure. Key assumptions are as follows: (1) the closure of Eraring in 2027, two years later than currently planned (2) all domestic production at Mandalong, and none from Myuna, is converted to export (3) changes in economic output are directly correlated with run of mine tonnage changes (4) output in the local economy grows at the same pace as the past decade (5) an inflation rate of 2.5%.

This plausible scenario would see mining decline from 10.1% to 7.1% of local output in the next five years. Industry data reports around 500 local mining suppliers in Lake Macquarie, with around \$500m of direct spending in the local economy (NSW Minerals Council 2023). This suggests the direct and the flow on effects of a scenario along these lines are likely to be significant.

Aside from mining and energy, the second key influence on Lake Macquarie's economy over the next decade is population growth. Population driven sectors have been critical in maintaining economic activity. Construction provides substantial employment, investment and local flow on activity. Growth in health and social services, while having low value-added activity, provide employment opportunities as well as broader benefits, such as the availability of good services that attracts migrants, and in providing economic stability due to its immunity to the business cycles that affect the private sector (Martin *et al.* 2016).

Maintaining population growth will be essential, including to 'bridge the gap' between the decline of tradeable export goods sectors and their (partial) long run substitution with income generating sectors such as tourism and knowledge services. Population projections suggest this momentum is likely to be maintained.

Lake Macquarie's population grew at annual rate of 0.9% over the decade to 2021, with a significant acceleration from 2016 to 2021. Projections suggest a sustained growth rate of 1.1% per annum through to 2031, with around three quarters of this change attributable to net migration (Remplan 2023). While moving to Lake Macquarie is likely to continue to be highly attractive to incoming migrants, maintaining this forecast momentum will rely on a number of 'swing factors'.

As described in Section 2.3, the recent acceleration in population has coincided with a concerted efforts to create a positive investment climate in Lake Macquarie through various strategic, land use planning and development approval initiatives. Ongoing growth is also substantially contingent on the availability of developable land compatible with local liveability and environmental priorities, as well as maintaining affordability advantages compared to Greater Sydney (Dantia 2018).

In addition to volume, the age and skill levels of migrants are likely to be highly consequential in meeting aspirations to expand professional and innovation/technology sectors – itself a challenging task given the extreme concentration of these sectors in a small number of areas in Sydney and Melbourne (Institute for Regional Futures 2023).

Two further industries are likely to exert an outsized influence on the Lake Macquarie economy – manufacturing, and tourism. While the ‘direction of travel’ for each sector is clear, the uncertainty about the scale and pace of change will be material for local growth.

Manufacturing, while on a multi-decade decline trajectory, was still the second largest sector by output in 2022. Manufacturing is now heavily composed of mid-to-small sized operations supporting other local and regional sectors such as mining and construction. Ongoing declines appear likely, but the scale is unclear, and will be largely influenced by economy-wide competitiveness, exchange rate, and policy factors. However, given their large residual contribution and important skill and supply chain base, and the evidence of recent stabilisation, proactive local efforts to reduce negative effects, facilitate retention, and encourage new businesses are likely to be material.

Conversely, the tourism sector is emerging at the current moment as a highly significant contributor to the local economy. ‘Game changing’ major investments such as the Cedar Mill concert venue and the \$600 million Trinity Point development in the Morisset area, alongside other initiatives, have the potential to realise long held aspirations for a large tourism industry in Lake Macquarie. This follows recent acceleration and evident competitive advantages regarding employment in tourism related sectors. These are significant opportunities, but the scale of contribution will depend on actions such as facilitation of ongoing investments, infrastructure developments, and the development of more comprehensive tourism offering to maintain momentum (LMCC 2022a).

Ultimately, a substantial loss of power generation and mining is certain over the next decade. A further erosion of manufacturing is also likely if trends continue, although ameliorative actions or positive conditions may mitigate this.

In the other direction, robust population growth looks set to make a continued contribution, driving the construction and care sectors that have propelled recent growth, although this will be contingent on effective management of land availability and infrastructure challenges. Tourism is a clear growth industry, although the ultimate scale is unclear, and investment facilitation, planning and infrastructure will have a material impact on tourism’s ceiling.

Many of these key factors will be driven by broader economic and demographic trends beyond the control of local, and to some extent, state and national governments and actors. However, there is substantial scope for active interventions – including the continuation of current efforts – to manage the adjustment of the Lake Macquarie economy to ensure adverse effects are limited, and opportunities are realised.

2. Responding to Change in Lake Macquarie

2.1. EVALUATING LAKE MACQUARIE'S ECONOMIC DEVELOPMENT APPROACH

While the structural changes described above are specific to Lake Macquarie, they reflect broader shifts, such as globalised manufacturing, resource use changes, the expansion of service jobs, and urban growth. While these drivers are largely beyond the control of local authorities, actions taken in places are highly consequential in influencing how broader shifts affect local prosperity and wellbeing.

For example, while industry structure shapes local growth and resilience, leading research suggests the productivity of firms, industries and workers in a particular place are the most significant influences on whether structural changes and shocks result in persistent negative impacts, or whether a local economy adjusts. In turn, productivity and strengths are partly determined by characteristics that can be influenced at the local level – such as innovation capacity, worker and managerial skills, access to markets, capital deployment, local expenditure and procurement, government investment and infrastructure decisions, and so on (Martin *et al.* 2016).

Actions *can* be undertaken by local governments, organisations and businesses, and by state and federal governments, that positively affect local growth trajectories. Motivated to shape their own futures, to stand out as reliable partners to attract scarce private and public investment, and to lessen vulnerabilities, the most proactive local authorities and actors exert influence on specific fields where they can make a tangible impact (Beer and Clower 2020, Beer *et al.* 2023).

In particular, given the high levels of mobility of labour and capital *between* regions, investments that improve liveability and business climates can make significant differences in the locational decisions of households and investors. Many of the characteristics that matter – such as a well-educated population, good transport and digital infrastructure, good amenities and public services, careful facilitation of 'clusters' of businesses in industries with local advantages – can be supported by local authorities or by state and federal governments responding to place-specific policy needs (Krugman 2006).

For higher levels of government, while there are a broad variety of approaches, assessments and theoretical viewpoints, place-based policies can support equitable distribution of economic benefits and management of economic transformation (Beer *et al.* 2023), create emergent local productivity (Barca *et al.* 2012), and, applied judiciously, generate economy-wide benefits (Kline and Moretti 2014).

In practice, place-based actions focus largely on creating the right conditions for inward and local investment; supporting specific competitive advantages, sectors, or development opportunities; and attracting, growing and retaining businesses, population and skilled workers. Priorities commonly include transport and infrastructure investments, developing pools of skilled labour, land use planning and housing, liveability and amenity, investment attraction services, and analysis of and support for sectors with local advantages (Beer *et al.* 2003, Beer and Clower 2020, Leigh and Blakely 2013).

The degree of effort, sophistication, and institutional priority makes a difference to how well activities work in practice. For example, land use planning and public infrastructure are core local government functions, but applying a strategic economic development focus to these functions is not universal. Similarly, only a limited number of local governments practice highly specialised economic development activities, such as data driven strategy or investment concierge-type functions.

The remainder of this section evaluates key economic development activities undertaken by Lake Macquarie City Council (LMCC) over the past decade. Document, data and literature review has been augmented with internal and external stakeholder interviews. The section concludes with summary of LMCC's activities against leading local economic development practice.

2.2. ECONOMIC DEVELOPMENT AND INVESTMENT ATTRACTION

There is clear evidence that, over the past decade, LMCC has taken an innovative and proactive approach to economic development strategy, and to the practical mechanics of attracting investment.

In 2014, LMCC established Dantia, an independently governed economic development agency modelled on leading approaches from overseas, to 'engage with the private and public sectors to encourage investment and enhance job creation' (Dantia 2014:4). This accords with contemporary research on the importance of coordinating entities for place based economic development (Barca *et al.* 2012, Beer *et al.* 2019).

Dantia activities over the past decade are described in successive strategic plans. The objectives of the first 2014-18 strategy sought to establish an identity for Lake Macquarie with major investors, attract enabling infrastructure to support economic and population growth, and encourage innovation through digital technology uptake.

Specific strategies included laying the groundwork for the City's development as a logistics hub, strategic interventions to increase visibility with major investors and government as a tourism destination, targeting major retail and commercial investments, attracting education providers, leveraging the early NBN rollout and associated digital connectivity initiatives to attract and develop businesses, and working with state government to identify future housing demand (Dantia 2014).

The 2018-23 strategy describes previous success in attracting major developments and establishing digital infrastructure. It also demonstrates an evolving approach, with a more defined strategy that aligns with contemporaneous research on 'urban agglomeration' – that is, the emergent economic activity and gravity created by places with (and connected to) larger populations (Glaeser and Gottlieb 2009). The document proposes activities to grow the city's population as an explicit economic strategy:

The current economy of Lake Macquarie is constrained by the demographics of its population, market size and businesses that operate within the geography. To achieve sustained, long-term economic diversity and be a highly liveable city, strategic change needs to occur (Dantia 2018:3).

This strategy also incorporates the attraction of highly skilled workers experiencing affordability challenges in Sydney, again aligning with research emerging at the time on the importance of high-skill knowledge workers in driving urban economic activity (Moretti 2012). This strategy is identified as being reliant on supply side interventions to identify and make available land to ensure housing affordability is retained concurrent to population growth – noting an explicit undersupply of lots and dwellings – and for employment land to ensure there is space for job growth.

There is also explicit acknowledgement of the risks and needs for supportive interventions in key sectors, described as 'driver industries under pressure' (Dantia 2018:13).

Notably, the construction industry is identified as a 'high performer but risks running out of steam' (Dantia 2018:4). In the context of a population-led economic strategy, and the demonstrated importance of construction in maintaining economic activity and jobs growth to compensate for declines in manufacturing and volatility in the mining sector over the past decade, this strategy of enabling dwelling construction has assumed major importance in both maintaining economic activity and laying the groundwork for a more stable and resilient future economy.

The tourism sector is identified as 'underdeveloped with unlimited potential' given the city's location and natural advantages, and interventions to facilitate land use to attract major retail property investments are seen as important to arrest retail declines (Dantia 2018:4). These strategies have been executed effectively with clear outcomes such as the Pasmenco site retail redevelopment and the Cedar Mill tourism project.

Opportunities are identified in the adaptive reuse of coal mining land and energy utility infrastructure, with mining land presenting opportunities to align with residential population growth and tourism strategies.

While requiring significant persistence, these strategies have been pursued effectively on an ongoing basis by Dantia and LMCC in subsequent years, for example through the Black Rock Motor Sport project.

From a strategic perspective, it is clear the data-driven, best practice-informed strategy described in the 2018-2023 plan has provided the basis for a set of practical actions that have yielded significant benefits for key sectors in construction, tourism, and retail. Similarly, the strategy highlights the importance of collaboration between LMCC and Dantia, through their respective land use planning and economic development functions. While statistical attribution is difficult given the scale and set of cyclical and structural influences on the Lake Macquarie economy, these strategic interventions and collaboration are highly likely to have had tangible effects on attracting investment in key, target sectors; growing employment; and facilitating population growth as an economic strategy.

This pattern of evolution in strategy and activities is also clear in the most recent *Dantia Economic Development Strategy 2022-2032* (Dantia 2022a), which provides a refined approach that builds off previous work, focusing on four strategic areas – identity, investment, infrastructure, and innovation.

In relation to identity, a set of actions are described to leverage competitive location advantages regarding liveability and transport connectivity to attract skilled workers in growth sectors, specifically professional, technology and knowledge services, and healthcare. Increasing the profile of Lake Macquarie as a tourist destination is also identified as a priority, with implementation demonstrated through the attraction of major developments and effective marketing campaigns. Continuing to successfully execute practical investment attraction activities is also a key priority, as is maintaining momentum in encouraging new advanced manufacturing businesses (Dantia 2022b).

2.3. LANDUSE, PLANNING AND APPROVALS

LMCC has significantly evolved its approach to land use planning and approvals over the past decade.

The *Lifestyle 2020* strategy was adopted in 2000 to provide strategic direction to land use and management in Lake Macquarie, in the context of significant community concern regarding unemployment, protection of the Lake and the natural environment, and improvement of the built environment (LMCC 2010:8,11).

This urban development strategy prioritised environmental protection, and the concentration of development around existing town centres, with an aim to ‘reduce unsustainable development, particularly low-density housing on the urban fringe’. A subsequent review found infill development targets were not being met, and that meeting regional housing needs would require strategies to increase medium density approval and/or require a higher proportion of greenfield urban fringe development (LMCC 2010:8).

The subsequent *Lifestyle 2030* strategy responded to changing economic and social trends over the period 2000 – 2012, setting strategies and policy for LMCC’s management of private and public development (LMCC 2013). The strategy continues the emphasis on environmental sustainability, liveability, and infill, but adds an explicit prioritisation of economic development promotion.

The most recent statement, *Shaping the Future*, retains a significant emphasis on liveability and sustainability, but identifies accelerated population growth, driven by local economic development and/or integration with the Greater Sydney labour market, as an opportunity to grow the local economy and stimulate investment, construction activity and consumer spending (LMCC 2020:5,14). The risks in an ageing demographic base, and the opportunities for a reinforcing cycle of talent attraction and economic expansion in knowledge based and tourism sectors are also identified:

Importantly, these industries can attract more bright young professionals to Lake Macquarie to drive economic growth and rejuvenate our ageing workforce and demography (LMCC 2020:18).

External stakeholder feedback highlighted the identification of the ageing population issue as a structural risk as a pivotal point in LMCC's movement towards a more explicit and proactive economic development strategy, and a demonstration of Council and Dantia's capacity and willingness to integrate economic development, land use and population strategy. The demonstrated implementation of specific actions to respond to these issues, with a level of consistency over time, also shows significant capacity to move from well-founded strategy to practical activities.

The contemporaneous *Lake Macquarie Housing Strategy* (LMCC 2021a) also identifies a complementary housing strategy designed to facilitate population growth above projections, economic development objectives, and to meet the liveability and environmental preferences of residents. This strategy revolves around delivering quality housing in and around existing high amenity and employment centres, with a specific emphasis on low-rise medium density and prioritising infill development, including zoning and planning control changes and infrastructure investments to ensure services keep pace with growth.

In regard to the evolution of LMCC's approach to economic development, there is a noted shift between *Lifestyle 2030*, published in 2013, and *Shaping Our Future*, published in 2020. This was interspersed with the explicit population growth-driven economic development strategy outlined by Dantia in its 2018-23 *Economic Development Strategy*. This evolution was accompanied with increasing identification of factors that were likely to impact the economy, including population growth and ageing, the need for suitable industrial and commercial lands to attract investment, the likelihood of 'dramatic changes' in coal mining and coal power generation, and opportunities associated with the use of former industrial and mining lands (LMCC 2013:24,27, LMCC 2020:14).

This shift is also reflected in LMCC's activities to explicitly leverage land use planning to ensure the City 'attracts investment, creates jobs, and fosters innovation', as a response to the transforming local economy (LMCC 2020:25). Actions include targeting high skilled workers to move to Lake Macquarie, actively facilitating new investment and development, identifying and readying employment lands to take to market, and engaging with industry to attract tourism development (Dantia 2022, LMCC 2020:25).

One notable area that provides evidence of how land use planning has been used to facilitate economic development is in relation to development approvals.

One program focused on reducing approval times for regionally significant developments (that is, large investment exceeding state government thresholds) (NSW Government 2023). LMCC partnered with the NSW Department of Planning in the Faster Regionally Significant Development Assessment Pilot Program, achieving project targets of reducing assessment times for 100 percent of developments to 250 days or less over 2021/22.

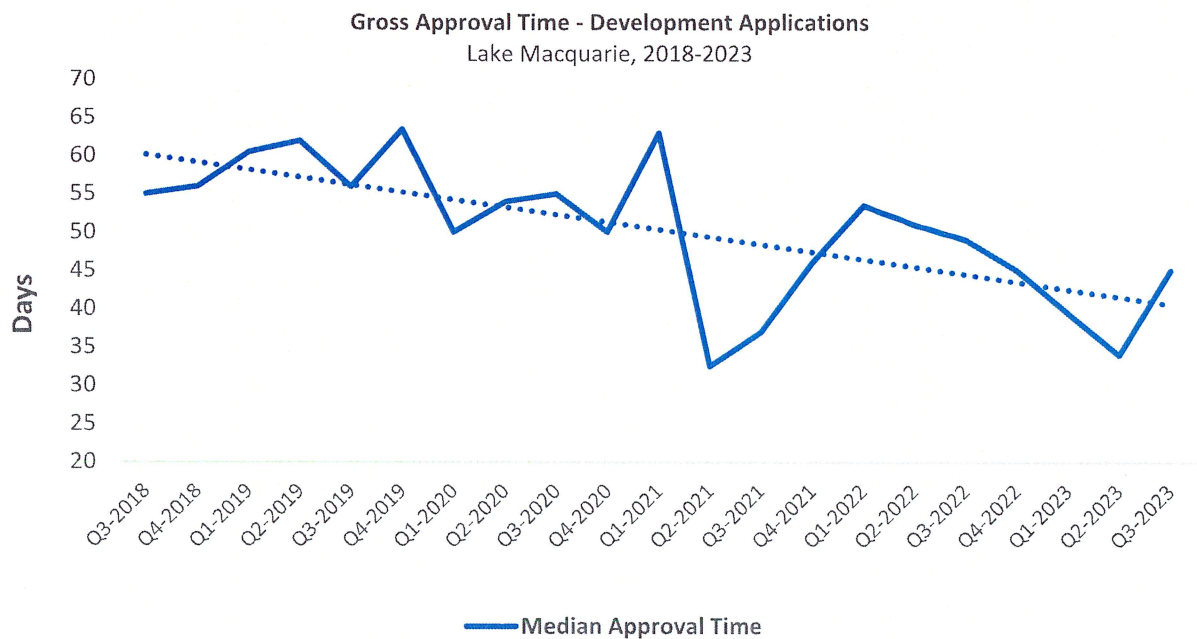
LMCC has also concentrated effort on reducing approval times to facilitate investment across all approval types. For example, LMCC has participated in the NSW Public Spaces Legacy Program, a program that has incentivised the acceleration of assessment timeframes for development applications by funding public space infrastructure (DPIE 2020). While LMCC began the program with already highly competitive assessment times, through an aggressive streamlining program LMCC has reduced median assessment time from 27 to 17 days, well beyond the program target of 24 days (LMCC. pers. comm)

These improvements are also supported by data on LMCC's median gross approval time – the number of days from application to decision – that has demonstrated a clear downward trend over the last five years, notwithstanding volatility related to spikes in the volume of applications (Figure 7).

Investment sector responses provided qualitative confirmation of this improvement. In particular, a marked 'cultural shift' was identified as having occurred over the past decade, with LMCC developing a strong reputation for investment facilitation through its planning approval and assessment processes. This was seen as beginning with decisions to take local responsibility for analysing and addressing underlying economic issues and opportunities, the subsequent provision of clear signals through strategy development, and particularly Council leadership and program implementation.

This leadership, including explicit decisions to integrate economic development priorities in land use planning, was viewed by internal and external stakeholders as leading to a staff culture that emphasised facilitation and problem-solving. Moreover, establishing a positive climate for development assessments, as well as the business attraction activities of Dantia, were seen by industry as making Lake Macquarie one of the state’s most attractive investment destinations.

Figure 7: Media Gross Approval Time, LMCC, 2018-23



Beyond these activities, LMCC has also sought to evolve land use planning activities to solve specific economic development problems. Approaches to adaptive post mining land use, and utilising Council owned land to signpost economic development opportunities to investors, provide recent examples.

In relation to the latter, LMCC has begun conducting expression of interest processes for private investment on Council-owned land that meets specific economic development purposes – for example, priority tourism sites, higher density urban development in high amenity locations served with public transport.

On the former, reuse of mining lands have also become an economic priority, given the critical location of key parcels (for example, the 1100 hectares adjacent to recently developed urban and employment lands and with road and rail access in the regional priority of the North West Catalyst Area), the need for access to disturbed lands to minimise environmental impacts of residential and commercial growth, and limited alternative development sites to maintain population expansion.

External stakeholders were highly complementary of LMCC’s leadership role on this issue, including long term advocacy with responsible NSW agencies, identification of planning policy opportunities to adaptively re-use mining lands, partnering with potential users and proponents for reused mining land, and collaboration with mine owners and other local governments to navigate barriers to reuse.

2.4. TOURISM, ARTS, CULTURE, & AMENITY

Lake Macquarie has long benefited from its natural assets, with the Lake, beaches and forested landscapes creating a high level of liveability. Maintaining this environment is an enduring community priority, and

there have been long held aspirations to leverage these assets and the associated lifestyle as a key economic asset.

Over recent years these aspirations have begun to be realised, with a clear strategic approach driven by LMCC. Objectives include substantial visitor economy growth targets while maintaining environmental and lifestyle assets, attracting and directly investing in a range of quality attractions and events to establish Lake Macquarie's status as a destination, and creating a higher profile (Dantia 2018, 2022b, Lake Macquarie Council 2022a)

In particular, the *2022 – 2027 Destination Management Plan* provides a blueprint for growing the visitor economy, encompassing a comprehensive set of actions covering promotion, diversification of visitor offerings, investment in infrastructure, and attraction of large anchor investments (LMCC 2022a). Notably, the Plan explicitly notes the importance of tourism in bringing 'new dollars into the local economy with these dollars having a multiplier effect' and the importance of the visitor economy in driving a 'higher profile and increased awareness of the city' (LMCC 2022a:9, 18).

A strong lifestyle proposition, combined with opportunities associated with increasingly diverse work opportunities, connectivity to surrounding regions including Sydney, and work from home, has also been identified as a key component in attracting the high skill workers essential to developing a knowledge-based economy (Dantia 2018). This has been allied with a *Lake Activation Strategy* that for the first time has put in place a plan on how best to utilise and facilitate community enjoyment of the City's central natural feature (LMCC 2021b).

Allied to this approach is a set of cultural investments that aim to boost Lake Macquarie's diversity of attractions, boost the local economy, and increase liveability. This includes significant capital investments in galleries, event spaces, and programs in the Lake Arts Precinct, such as the Museum of Art and Culture, Australia's first permanent regional multimedia arts pavilion – the Multi-Arts Pavilion *mima* (MAP *mima*) – and public space investments concentrated in Lake front assets and public art. It also incorporates a night-time economy strategy including regular event investments, streamlined planning approvals, proactive use of council infrastructure, and public transport improvements (LMCC 2019a, b, LMCC 2022b).

A significant and sophisticated media strategy has also been developed, for example including real estate media channels, and LMCC has sought to engage directly with government tourism marketing agencies to develop and promote Lake Macquarie's tourism identity. In relation to investment attraction, LMCC and Dantia have developed expertise and reputation in facilitating major tourism development such as the Cedar Mill development. Dantia have also established a proactive private investor engagement and outreach program targeted at major tourism project investors.

Taken as a whole, LMCC's activities have begun to create a substantial shift in the area's status as a tourism and tourism investment destination, and have bolstered the liveability offering, with the intent of attracting high skill workers and their families.

2.5. EVALUATION: A PROACTIVE FOUNDATION FOR MANAGING FUTURE CHANGE

Based on the review and interviews conducted to inform this research, LMCC has been assessed as having active, and in many cases leading, efforts across virtually all the commonly identified best practice local economic development activities. Examples of where LMCC's activities align with the toolkit of best practice are summarised in Table 7.

Notably, LMCC's activities have regularly been at the cutting edge of contemporary research findings, for example on place-based regional development agencies and agglomeration economies. There is considerable evidence of proactive and data-driven identification of pressures in key sectors, and opportunities in others.

LMCC has also exhibited an evolving, rather than 'set-and-forget' approach. There is clear evidence of achieving targets and objectives, responding flexibly to external circumstances, and a willingness to try a range of options to test what works in the local context.

There is also an increasing sophistication in analysis and activities. One on hand, a number of high-quality activities are now undertaken as routine – for example investment attraction through Dantia or streamlined development assessment processes through LMCC.

Conversely, other projects with defined timeframes have been undertaken, with a clear prioritisation of projects that serve as economic anchors, market signalling examples, or have multiple benefits. For example, attracting anchor commercial tenants to the Boolaroo brownfield site, the Cedar Mill tourism and events development in Morisset, or the Wakefield motor sport park as a pioneering reuse of mining land. The approach of LMCC to achieving specific projects suggests well-conceived priorities, innovation in navigating various barriers, and persistence in seeing projects to completion.

While we note there are opportunities for augmenting or increasing attention on some activities and implementing or trialling other projects at the local level (see Section 3.2), overall, LMCC is executing most of the recognised local economic development activities with a high degree of sophistication, persistence and effectiveness.

This stands Lake Macquarie in good stead for adjusting to future change. However, as noted in Section 1.5, the economic shifts that are projected to occur over the coming decade are substantial. LMCC is also approaching some limits of what is possible for a local government to achieve with local and private sector partners, given maintaining progress in a number of key areas is largely dependent on decisions taken at state and federal government levels – such as infrastructure investments, adaptive use of mining lands, and place-based manufacturing and transformation policy.

In the absence of additional policy, program and public investment partnerships and actions from state and federal governments, there will be limits on local action. Conversely, however, the strong foundation and progress to date in Lake Macquarie presents a significant opportunity for partnership to maintain positive momentum over the coming decade.

Table 7: Local Economic Development Activities (Beer and Clower 2020; Beer et al 2003), LMCC activities.

Economic Development Activity	LMCC Example Activities (includes Dantia).
Transport Connectivity	<p>Long term engagement of logistics industry and government to ensure prioritisation in freight infrastructure development, given locational advantage.</p> <p>Infrastructure advocacy prioritises economic development, including across multiple timeframes: short (e.g., tourism road access in Morisset), medium (connecting population centres to North West Catalyst Area) and long (fast rail).</p>
Digital Infrastructure	<p>Worked with NBN Co and promoted digital connectivity to attract investment to specific locations.</p> <p>Advocacy to address digital connectivity blackspots on Sydney train network to facilitate commuter and business connectivity.</p>
Innovation and Knowledge Economy	<p>With industry partners, in 2019 established The Melt, Australia’s first integrated accelerator and industrial prototyping lab, a highly successful innovation supporting advanced manufacturing start up and scale up enterprises.</p>
Human Capital	<p>Sophisticated marketing to high skill, younger workers and families to leverage connectivity, lifestyle, and new work opportunities to address ageing population and knowledge economy diversification.</p>
Agglomeration Economies	<p>Setting above-trend targets for population growth in line with urban agglomeration theory; seeking to facilitate growth planning approaches that encourage investment, particularly in infill development, while maintaining amenity and environmental values.</p>
Enabling Institutions	<p>Developed independent economic development company (Dantia) to plan and attract investment.</p>
Development Strategy	<p>Embedded economic development and change response priorities in land use and housing strategies and economic development strategies.</p>
Data Driven Planning	<p>Identified target sectors (including logistics, tourism, retail, health, and manufacturing) based on local advantages, and used analysis to inform economic strategy (for example agglomeration economy and transport infrastructure development).</p>
Policy Advocacy	<p>Strategic prioritisation of advocacy to align with economic development needs and existing demonstrated LMCC investments. For example, tourism investment enabling infrastructure, freight logistics planning engagement, digital connectivity and rail investments.</p> <p>Targeted policy development and collaboration to utilise LMCC institutional capacity, economic knowledge and representation of ratepayer interests to address otherwise unmet policy needs. For example, long term collaboration with investors, mining companies, and planning and resources agencies to address planning constraints on the utilization of post mining land for economically productive activities.</p> <p>Explicitly regional and cross-regional collaborative approach, acknowledging LMCC’s significant capacity as a large local government and the shared interest across, for example, the regional labour market and economy and across local government areas facing shared resource transition and land use issues.</p>
Investment Attraction	<p>Prioritised changing reputation and practice to build investor reputation as a welcoming and problem-solving investment destination. This has been allied with sophisticated investment marketing, durable concierge support, and strategy focused on key sectors with multiple</p>

	benefits (e.g., major events facilities creating growth and amenity; retail investments as precinct anchors).
Endogenous ('home grown') Development	Business development and mentoring, hardware prototyping, capital attraction, and related scale up and accelerator support through The Melt facility.
Land Use Planning	<p>Strategic, organisational and practical prioritisation of investment friendly approach to land use planning, to demonstrate and reinforce economic development strategies. For example, enabling population growth to deliver agglomeration economy while maintaining environment and liveability; long term collaboration and advocacy to utilise industrial brownfield and post mining land to enable employment and residential growth.</p> <p>Executed through internal leadership, cultural change, and practical initiatives such as Regionally Significant Development Approval and Public Spaces Legacy programs to accelerate approval timelines.</p>
Precincts	<p>Land use and economic development planning, collaboration with private sector and state government agencies, and advocacy regarding planning strategy to ensure precinct developments match economic development evidence and priorities.</p> <p>Successful and ongoing development of South West Catalyst Area (Morisset) to leverage tourism, logistics and residential advantages related to natural amenity, locational advantages (freeway, rail, and proximity to Sydney), and land availability.</p> <p>Successful, ongoing and expanded development of North West Catalyst Area to leverage large and rare brownfield infill opportunity (former Pasmaico lead smelter) and adjacent large scale post mining employment land use opportunity, existing transport network, and location inside the Lake Macquarie-Newcastle urban area for commercial, residential, and future high skill employment precinct opportunities.</p>
Land Preparation and Development	Proactive utilisation of substantial council land holdings to directly address economic development priorities. Examples include identification of development opportunities and proponent engagement for scarce Lakeside parcels to stimulate tourism development; high density developments to deliver population growth and worker attraction in high amenity locations; commercial EOI process to invite investment on sites that align with economic development priorities/
Arts & Culture	Utilise the organisational expertise of a large and effective local government to fill a market failure gap in the development and coordination of the arts and culture economy. For example, the Lake Arts Precinct creates multiple facilities for driving arts and culture and supporting a local competitive advantage.
Tourism	<p>Comprehensive Destination Management Plan created to drive prioritisation of visitor economy growth, creation of a range of attractions and experiences, enabling infrastructure, increase the profile of the city, and attract private investment.</p> <p>Dedicated major investor engagement and facilitation strategy to secure major anchor tourism facilities that can increase visitor offering and underpin sustainable growth (for example the Cedar Mill development in Morisset).</p>
Place Activation & Events	Adopted a set of strategies to increase the diversity and consistency of the lifestyle offering, including the Lake Activation Strategy
Place Marketing	Long term strategy to increase government tourism marketing body awareness and active promotion. Targeted promotion of Lake Macquarie as a domestic migration destination for the Sydney market.
Industry Clusters & Supply Chain	No documented activity.

3. Action for Lake Macquarie's Decade Ahead

3.1. PUBLIC POLICY RATIONALE

The economic analysis in Section 2 demonstrates a very high likelihood of ongoing and accelerating change, including structural change risks and exposure to potentially adverse events. Given the economic scale and population of Lake Macquarie, its exposure to change trends, and its recent history of sophisticated and proactive economic development activities, there are several public policy rationales for increased attention from state and federal government.

(1) Location-specific structural change policies are widely acknowledged as justified when responding to change is beyond the resources and capacity of local actors (Productivity Commission 2017)). Lake Macquarie City Council has undertaken a sophisticated set of activities, with more activities planned, but is approaching the limits of what local government can do, and there are identified needs and actions requiring state and federal support.

(2) Place-specific interventions and collaboration with local government have recently been embedded in state-Commonwealth agreements regarding responding to regional economic changes, including in locations affected by changes in energy industries, through the National Transformation Principles (National Cabinet 2022).

Lake Macquarie is directly subject to these energy transition changes, both in energy production and mining. Moreover, through its leadership, strategy, institutional development and delivery over the past decade, LMCC has situated itself as a consistent and capable partner with a strong awareness of the needs and views of the local community.

(3) There is a high degree of interest in effective regional responses to structural change, including in areas impacted by the energy transition, manufacturing decline, population growth, and housing and planning challenges. Similarly affected communities are interested in effective responses, and governments require opportunities for meeting policy goals and efficiently deploying public funds to those ends.

Finding effective regional development programs to respond to structural changes is hard work (Beer 2015). The opportunity to invest and pilot actions in a place that has already demonstrated a level of resilience and has existing steps that can be built on is a significant opportunity to rebuild institutional knowledge. This knowledge can then be deployed to the benefit of other regions undergoing similar changes.

3.2. AREAS FOR ACTION: CONCLUSION & RECOMMENDATIONS

The overwhelming priority for economic development activities in Lake Macquarie is to maintain momentum. The structural change challenges are clear and will almost certainly accelerate over the coming five-to-ten years. At the same time, the past decade's efforts have been proactive and effective.

It is likely that limits to the capacity of local government to manage change are being approached. Many if not all of the successful activities deployed to date require ongoing investment and attention, in areas such as development approvals, investment attraction, tourism development, and increasing amenity and liveability.

Interventions required to maintain momentum, and to tackle larger challenges in the context of impending change, require action and public investment from state and federal government, and private and institutional actors, above and beyond the resources and decision-making powers of local government. Specific examples include infrastructure and precinct investment, land use planning incentives, manufacturing policy, and educational attainment.

Following is a set of recommendations for immediate and near future action, with an emphasis on building off existing successes, maintaining momentum, and prioritising collaboration between local, and state and federal, government.

Land Use Planning

1. NSW Government to investigate legislative and/or procedural change to facilitate adaptive reuse of former mining lands.

Maintaining population and employment growth is critical to both short and long-term economic development strategies. Ensuring an adequate supply of land has been previously identified as an economic development priority to maintain momentum in the construction industry (Dantia 2018). Prioritising the development of post mining land for employment and residential purposes is the next major planning evolution required. This is due in part to the strategic location of large parcels of former mining land, the limited availability of other suitable development lands, and the need to ensure pressure on environmental assets and amenity is reduced. This issue has also been identified as important across a number of local government areas who are seeking to facilitate post mining economic development.

Currently, the regulatory pathway for adaptive mining land reuse is unclear and complex, constraining investment potential. NSW should investigate changes that allow councils to consider applications, and that allow landowners to satisfy consent conditions to deliver additional economic, social and environmental benefits.

2. Allocation of clear and permanent responsibility and funding to a state government body to facilitate adaptive post mining land uses.

LMCC has taken a leadership role in pursuing demonstration sites and working through planning system challenges to facilitate mining land reuse. However, identifying durable solutions requires a transparent and resourced allocation of responsibility to a specific NSW Government agency to coordinate reform.

3. Maintain a positive local investment climate through ‘problem solving’ approach to development approvals, including ongoing state government collaboration and incentives.

LMCC’s progressive approach to planning and approvals has been highly successful in growing a positive reputation as an investment destination, and in facilitating population growth. This approach should be maintained by LMCC on an ongoing basis, and the NSW Government should continue to prioritise Lake Macquarie to collaborate, trial, and invest in planning approaches to address future needs in areas such as infill development, densification in high amenity locations, and brownfield and post mining land uses.

4. Continue and expand utilisation of Council land assets and strategic development of privately held land to meet specific economic development strategies.

These priorities should include – tourism, arts and recreation facilitation to expand the visitor economy offering, and high and medium density residential developments in high amenity locations well served by public transport.

Precincts and Infrastructure

5. Prioritise the Cockle Creek West expansion of the North West Catalyst Area as one of NSW’s most significant urban and employment land brownfield redevelopment precincts.

This precinct includes large areas of developable land adjacent to existing urban and commercial areas, road, freeway and rail. Fully realising the value of this site requires long term attention on enabling infrastructure; planning changes to facilitate mixed used, high density and high value employment lands; a concerted investment attraction program; and master planning of the Cockle Creek West Precinct to utilise 1100 hectares of post mining land (Dantia 2022b, LMCC 2022c).

5. NSW and Australian Government support for and investment in road, community and other infrastructure to maximise tourism, logistics, and residential development in the Morisset Regionally Significant Growth Area.

Morisset is identified as ‘the largest future growth area in the Central Coast and Hunter’ regions (DPIE 2022b, 2022c). The area has attracted significant tourism and residential investment, with locational advantages as a logistics hub, and interest in other emerging sectors that benefit from transport connections, such as the circular economy and hydrogen. Delivery of existing commitments, and additional state and federal investment in line with the Morisset Place Strategy and regional planning documents, will maximise the value for a regional growth priority.

6. Upgrade digital infrastructure in Western Lake Macquarie to ensure continuous mobile connectivity for Newcastle to Sydney rail line.

The substantial migration of professional workers from Sydney to Lake Macquarie has created significant benefits for Lake Macquarie, but the attractiveness of some commuting options is limited by disruptive gaps in mobile reception in substantial areas. State and/or federal investment should be progressed in upgrading digital connectivity between Wyee and Cardiff stations.

Education and Skills

7. Prioritise acceleration in the rate of post school qualification attainment in the working age population – particularly tertiary education rates.

Increasing the local skills base is critical in attracting knowledge-based sectors, facilitating local business development, and retaining value-adding sectors such as manufacturing. Human capital and working age population attraction strategies have been successful and are likely contributing to Lake Macquarie almost keeping pace with state-wide qualification rates. However, growth rates in attainment amongst young adults is growing more slowly than the state average, suggesting a need to prioritise ‘home grown’ education strategies. Tertiary growth rates also lag NSW level, contributing to a widening gap.

Dantia’s previous activities and strategies have included targeting ‘education providers to attract investment and services to the City’ (Dantia 2014) and supporting ‘tertiary education institution investments’ (Dantia 2018). The current Dantia strategy refers to future plans to promote ‘education so the next generation is prepared for future job prospects’ (Dantia 2022a). Building on this intent, future activities should prioritise this goal, including assessing a range of options, from investment in programs to facilitate tertiary uptake, through to institutional investments in tertiary and TAFE facilities.

Tourism, Culture and Amenity

8. State and Federal program and infrastructure investment to support the growth of Lake Macquarie as a tourism, arts and culture destination.

Lake Macquarie has a sophisticated and demonstrably effective *Destination Management Plan* (LMCC 2022a) that is progressively being implemented. It includes a variety of highly prospective adventure, accommodation, eco-tourism and cultural attraction opportunities requiring capital, program and infrastructure investment, including priorities such as establishing Conference and Performing Arts Centre.

9. Continue to develop Lake Macquarie’s lifestyle, culture and environment proposition to attract younger and high skilled workers.

Efforts to promote and leverage Lake Macquarie’s affordable and high-quality lifestyle, and its connection to surrounding labour markets, are proving effective in attracting the younger, high skill workers that are critical for the area’s economic future. Continuing to update, grow and diversify recreational, cultural and amenity offerings to retain this momentum is critical.

Manufacturing and Knowledge Sectors

10. Reprioritise the retention and stabilisation of the local manufacturing sector at its current size, including local utilisation of Australian Government programs.

Manufacturing decline comprised fully 86% of the contraction on local output between 2011 and 2021, and local industry contraction was greater than the statewide rate. However, this decline slowed after 2016. Dantia had previously identified 'immediate and strategic action' to 'maintain and evolve existing capability' in local manufacturing as a priority (2018:13) – strategies which resulted in the development of successful The Melt/Dashworks lab and hardware accelerator facility.

There are a number of current conditions that suggest reprioritisation of manufacturing retention is a significant opportunity. Specifically, that manufacturing is still a substantial contributor to local output, has greater long-term durability than mining and power generation as a tradeable goods producing sector, and has experienced a slowing in the rate of contraction that suggests decline can be arrested, and growth generated where advantages and opportunities exist. In addition, there are a number of new Australian and NSW Government policy initiatives in support of manufacturing that may be leveraged.

While manufacturing development and retention are specialised activities, the development of additional programs, investments and activities regarding business support and incubation, investment attraction and precinct development, including in collaboration with expert regional organisations and new federal government agencies and programs, is likely to be a high value local activity.

11. Investigate the development of suitably located commercial office spaces to house professional services businesses, to leverage the increase in resident knowledge workers.

Attract high skilled workers to Lake Macquarie is a strategy that appears to be bearing fruit. Converting an increase in work-from-home employees, or those commuting to Newcastle, or further afield to Sydney, into the expansion and creation of local professional services businesses, has promise as a long-term strategy. However, there are currently practical barriers to the creation of these type of enterprises, including limited office space for mid to larger businesses. While the pandemic and work-from-home has induced some challenges in demand for and investment in commercial premises, a concerted strategy to develop suitable facilities to house businesses of this type should be investigated.

Maintain Proactive Economic Development Activities

12. Maintain investment in cutting edge local economic development in Lake Macquarie, including leveraging opportunities for New South Wales and Australian Government support as a live example of effecting management of structural change.

The consistent investment in local economic development through Dantia has allowed long term strategies to be executed, and a consistent level of investment facilitation to be undertaken. Maintaining this capacity is critical, and additional investment in programs or projects offers high value to state and federal governments in both managing economic change in a large regional centre, and testing specific approaches that can then be applied in other regions in similar circumstances.

13. Continue to prioritise intra-regional collaboration on economic development, infrastructure and land use planning activities.

LMCC has a strong track record of collaboration, for example, taking a regional leadership role and collaborating with other regional councils on post mining land use issues. Neighbouring economies, operating in a shared labour market and with substantial supply chain linkages, are permanent features impacting the trajectory, resilience and strength of the Lake Macquarie economy. Collaborations that seek to address shared problems in the region, or that leverage development opportunities in one local government or another that have shared benefits, are a key ongoing priority for local economic development, and for attracting investment from state and federal governments.

Reference List

- ABS (2013). Australian and New Zealand Standard Industrial Classification (ANZSIC).
- AEMO. (2023). 2023 Electricity statement of opportunities. Australian Energy Market Operator. https://aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/nem_esoo/2023/2023-electricity-statement-of-opportunities.pdf?la=en
- Andrikopoulos, A., Brox, J., & Carvalho, E. (1990). Shift-share analysis and the potential for predicting regional growth patterns: Some evidence for the region of Quebec, Canada. *Growth and Change*, 21(1), 1-10.
- Artige, L., & Van Neuss, L. (2014). A new shift-share method. *Growth and change*, 45(4), 667-683
- Banpu. (2023). *Banpu annual report 2022*. https://www.banpu.com/wp-content/uploads/2023/03/BANPU_One-Report-2022_EN_11-Apr-23.pdf
- Barca, F., McCann, P., & Rodríguez-Pose, A. (2012). The case for regional development intervention: place-based versus place-neutral approaches. *Journal of regional science*, 52(1), 134-152.
- Beer, A. (2015). Structural adjustment programmes and regional development in Australia. *Local economy*, 30(1), 21-40.
- Beer, A., Ayres, S., Clower, T., Faller, F., Sancino, A., & Sotarauta, M. (2019). Place leadership and regional economic development: a framework for cross-regional analysis. *Regional studies*, 53(2), 171-182.
- Beer, A., Barnes, T., & Horne, S. (2023). Place-based industrial strategy and economic trajectory: advancing agency-based approaches. *Regional Studies*, 57(6), 984-997.
- Blakely, E. J., & Leigh, N. G. (2013). *Planning local economic development*. Sage.
- Centennial (2023a). *Myuna*. <https://www.centennialcoal.com.au/operations/myuna/>
- Centennial (2023a). *Centennial Mandalong resident information pack*. <https://www.centennialcoal.com.au/wp-content/uploads/2023/08/Centennial-Mandalong-Resident-Information-Pack.pdf>
- Dantia (2014). *Lake Macquarie City Economic Development Operational Plan 2014-2015*.
- Dantia (2018). *Lake Macquarie City Economic Development Strategy 2018-2038*.
- Dantia (2022a). *Economic development strategy 2022-32*. <https://dantia.com.au/wp-content/uploads/2023/07/Dantia-EDS-Brochure-Update-July23.pdf#:~:text=ECONOMIC%20DEVELOPMENT%20STRATEGY%202022%20-%202032%20DANTIA%20%7C,Visitor%20economy%20growth%20%E2%80%A2%20Land%20use%20planning%20OPPORTUNITIES>
- Dantia (2022b). *Operational plan 2022-32*. https://dantia.com.au/wp-content/uploads/2023/07/DANTIA-Operational-Plan-FY2024_FINAL.pdf
- Delta Electricity (2021). *Chain valley colliery consolidation project*. Community Information Sheet. August 2021.
- Delta Electricity (2023). *Vales point power station technical life assessment*. Media Release. 23 July 2023.
- DPIE (2020). *The NSW public legacy spaces program – program guidelines*. <https://www.planning.nsw.gov.au/sites/default/files/2023-03/the-nsw-public-spaces-legacy-program-guidelines.pdf>

DPIE (2022a). *Mandalong southern extension project modification 10 additional longwall state significant development modification assessment (SSD 5144-MOD 10)*. New South Wales Department of Planning and Environment.

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-5144-MOD-10%2120220311T004249.808%20GMT>

DPIE (2022b). *Hunter regional plan 2041*. <https://www.planning.nsw.gov.au/sites/default/files/2023-03/hunter-regional-plan-2041.pdf>

DPIE (2022c). *Central Coast regional plan 2041*. <https://www.planning.nsw.gov.au/plans-for-your-area/regional-plans/central-coast/central-coast-regional-plan-2041>

Dunn Jr, E. S. (1960). A statistical and analytical technique for regional analysis. *Papers in Regional Science*, 6(1), 97-112.

Glaeser, E. L., & Gottlieb, J. D. (2009). The wealth of cities: Agglomeration economies and spatial equilibrium in the United States. *Journal of economic literature*, 47(4), 983-1028.

Hewings G.J.D., Sonis M., Guo J., Israilevich P.R., and Schindler G.R. (1998). The hollowing out process in the Chicago economy: 1975-2011, *Geographical Analysis*, 30(3):217-233.

Hobor, G. (2013). Surviving the era of deindustrialization: The new economic geography of the urban rust belt. *Journal of Urban Affairs*, 35(4), 417-434.

IGCC (2020). Coal, carbon and the community: Investing in a just transition. Investor Group on Climate Change. https://igcc.org.au/wp-content/uploads/2020/06/Coal-Carbon-and-Community_FINAL.pdf

Institute for Regional Futures (2023). *The Geography of Jobs*. Hunter Insight Series, [Hunter Insight Series / Institute for Regional Futures / Institutes and centres / Research / The University of Newcastle, Australia](https://www.ifrfutures.com.au/research/hunter-insight-series/)

Jobs and Skills Australia (2023). *Nowcast of employment by region and occupation (NERO)*. September 2023. <https://www.jobsandskills.gov.au/work/nero>

Kline, P., & Moretti, E. (2014). People, places, and public policy: Some simple welfare economics of local economic development programs. *Annu. Rev. Econ.*, 6(1), 629-662.

Lee, N., & Clarke, S. (2019). Do low-skilled workers gain from high-tech employment growth? High-technology multipliers, employment and wages in Britain. *Research Policy*, 48(9), 103803.

LMCC and Strategy Hunter Consulting (2010). *Lifestyle 2020 Review Discussion Paper – Version 05 October 2010 – F2008/02086*.

LMCC (2013) *Draft lifestyle 2030 strategy – version 4 post exhibition*.

LMCC (2019b) *Lake Macquarie event and festival strategy and action plan 2019-2024*.

LMCC (2019b) *Lake Macquarie night-time economy action plan 2019-2024*.

LMCC (2021a). *Lake Macquarie City housing strategy 2021*.

LMCC (2021b). *Lake activation strategy 2020-2030*.

LMCC (2022a). *Draft destination management plan 2022 – 2027*.

LMCC (2022b). *Lake Arts Precinct Strategic Plan 2022-2027*.

LMCC (2022c). 2022-23 Federal Pre-Budget Submission. 29 January 2022.

Loveridge, S., & Selting, A. C. (1998). A review and comparison of shift-share identities. *International Regional Science Review*, 21(1), 37-58.

Martin, R., Sunley, P., Gardiner, B., & Tyler, P. (2016). How regions react to recessions: Resilience and the role of economic structure. *Regional studies*, 50(4), 561-585.

Moretti, E. (2012). *The new geography of jobs*. Houghton Mifflin Harcourt.

National Cabinet (2022). *National Transformation Principles*, 9 December 2022, <https://federation.gov.au/nationalcabinet/media/2022-12-09-national-transformationprinciples>

NSW Government (2023). *Regionally significant Development*. <https://www.planning.nsw.gov.au/assess-and-regulate/development-assessment/planning-approval-pathways/regionally-significant-development>

NSW Minerals Council (2023). NSWMC - Lake Macquarie Mining Employment Statistics. Supplied.

Productivity Commission. (2017). *Transitioning Regional Economies*, Productivity Commission Study Report, December 2017, <https://www.pc.gov.au/inquiries/completed/transitioning-regions/report/transitioning-regions-report.pdf>

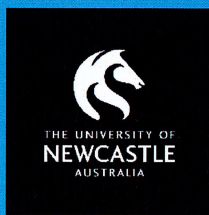
REMPPLAN (2011) *Lake Macquarie economic profile 2011*.

REMPPLAN (2022) *Lake Macquarie economic profile 2022*.

REMPPLAN (2023). *Lake Macquarie City 2041 Forecast*. <https://app.rempplan.com.au/lakemacquarie/forecast/population/drivers-of-population-change?state=a6vnHmBpYiNpQkifEjnQbF9h4lGm4f2qNiYswO7ATMIgljQg>

Schafran, A., McDonald, C., Lopez Morales, E., Akyelken, N., & Acuto, M. (2018). Replacing the services sector and three-sector theory: urbanization and control as economic sectors. *Regional Studies*, 52(12), 1708-1719.

Thakur, S. K. (2011). Fundamental economic structure and structural change in regional economies: A methodological approach. *Région et développement*, 33, 9-38.



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