Research for submission to Local Government Productivity Inquiry

Australian Local Government Association

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SGS Economics & Planning

Certified B Corporation

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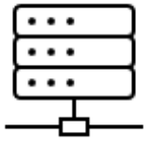
Content

Research for Submission to Local Government Productivity Inquiry

Prepared for: ALGA

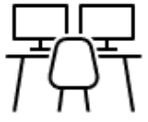
SGS Economics & Planning

Chapter summaries

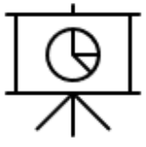


Service Provision: Household, business and property services provided by local government have high efficiency which generate value. This is compared to service provision of Territory, State and Commonwealth productivity.

Financial Sustainability: Local governments face severe financial constraints and cost pressures. Internationally, Australia shares less resources to local government which hinders the sustainability of the sector.



Workforce Skills: Local governments have difficulties in securing the right quantum and mix of skills to support local government service provision which limits sector productivity.



Digital and Data: Technology and digitalisation are crucial to improving productivity in the local government sector. Currently, there are barriers to accelerating the take up of data and digital transformations, one being financial resources.

Market Failure: Local governments are centered on the correction of market failures relating to provision of infrastructure and externalities that arise from land development. By mitigating these gaps, local governments play a persuasive role in underpinning wider economic productivity.

Last Resort: Local governments tend to step in when services are essential and not being delivered efficiently due to lack of coordinated policy by State/Territory or Commonwealth. If councils didn't step in, communities would miss essential services like childcare and health.

Infrastructure and Housing: Local council have custody over a significant portfolio of urban infrastructure and its role in housing supply. This has a much wider impact on the productivity of the Australian economy

Climate Change: Increasingly, local councils are recognising the community demand for adequate climate change adaptation and mitigation.

Productivity and local government

Two perspectives

1) Productivity of local government as a service provider

Including impediments such as financial insecurity, difficulties in securing skilled workers and challenges in digital transformations

Challenges - Local government is held back by poor State & Commonwealth policy settings

Cost Shifting: Local Government NSW estimated that cost shifting and responsibility transfers from state and federal government in the 10-year period before 2021 "imposed a cumulative total burden of $6.2 billion" for local governments in NSW

Inadequate fiscal equalization: FA Grants have declined from 1.2 percent of Commonwealth revenue in 1993-94, to 0.53 percent in 2021/22. In 2014 to 2016, indexation of FA Grants was frozen. Although restored in 2017, the impact of the freeze is still felt on the base level of grants. Meanwhile, States and Commonwealth have been making much greater use of direct grants with no special alignment to demonstrated local government need.

Rate capping: Signifies an inherent level of distrust in local government by State Governments - which belies the trust shown by the wider community. Rate capping also deprives local communities of economic stimulus: The Australian Institute (2021) estimated that rate caps have reduced employment in Victoria (counting both direct local government jobs and indirect private sector positions) by up to 7,425 jobs in 2021-22, with an estimated GDP reduction of up to $890 million in 2021-22.

2) Role of local government in the productivity of the wider economy

Including regulation, service delivery, infrastructure provision and climate change adaptation/ mitigation

Impacts - Financial challenges for councils

Difficulty in maintaining assets: Institute of Public Works Engineering Australia (IPWEA) estimate 1 in 10 of all local government assets across the nation need significant attention, and 3 in every 100 assets may need to be replaced. IPWEA also estimate that replacing poor quality infrastructure will cost $51 billion and replacing infrastructure in fair condition will cost between $106 billion and $138 billion.

Attracting and retaining skilled staff: In a national survey of workforce requirements funded by the Department of Infrastructure, being undertaken by SGS and managed by a steering group of ALGA, 91.4 percent participating councils reported that they were experiencing skills shortages, compared to the 68.9 percent of councils in 2017.

Slow and inconsistent take up of digital and data: In a 2017 survey undertaken by LGAQ, 59 percent of Councils reported prohibitive costs as a key barrier to take up of digital technology business models. A survey conducted by Technology One (2022) found that 83 percent of participating councils rank digital transformation as a high priority, but only 47 percent had the required budget.

Local government - doing more with less

Domestic

Over the past decade, total expenditure per capita by local government has more or less flat-lined. This is despite a period of rapid population growth and escalating demand for volume, quality and reliability in public services.

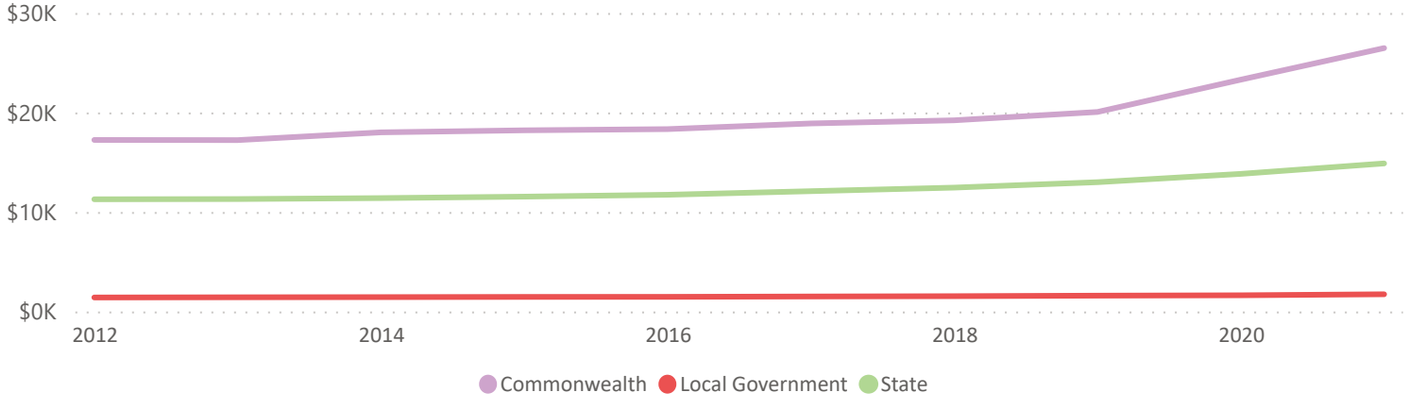
Meanwhile, outlays per capita by the Commonwealth have escalated sharply, and those of State and Territory Governments have grown steadily. These are trends which pre-date the Covid-19 Pandemic.

International

By international standards, investment in Australian local government is small, forcing local councils to operate with very modest resources.

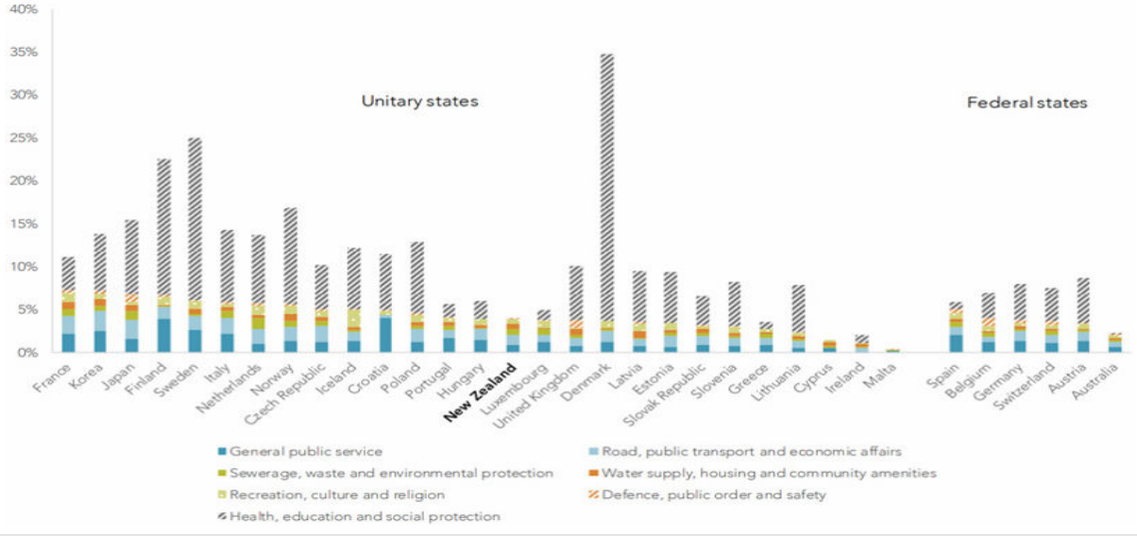
Once you correct for the differing scope of local government across nations, by netting out the provision of health, education and social services, Australian local governments share of GDP ranks amongst the very lowest of comparator nations.

Government expenditure per capita, by Australian government sector (2012-2021)



Source: SGS, 2022

International levels of local government expenditure as a percentage of GDP

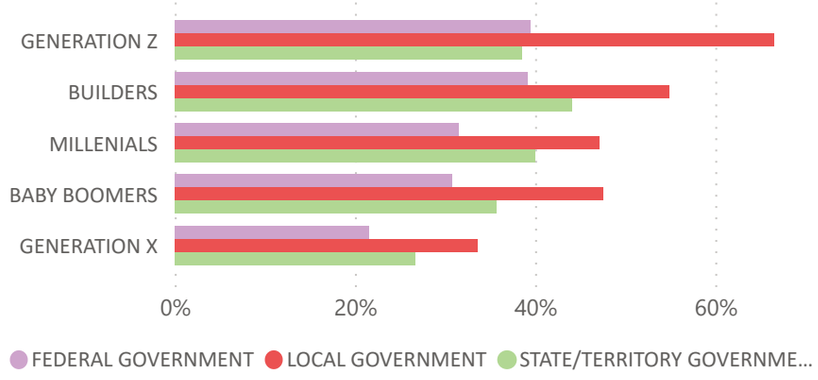


Source: New Zealand Productivity Commission, 2019

Local government is key to building productivity in the wider economy

Local government is the most trusted tier of government

Level of trust in Australian government tiers by generation



Source: SGS, 2022

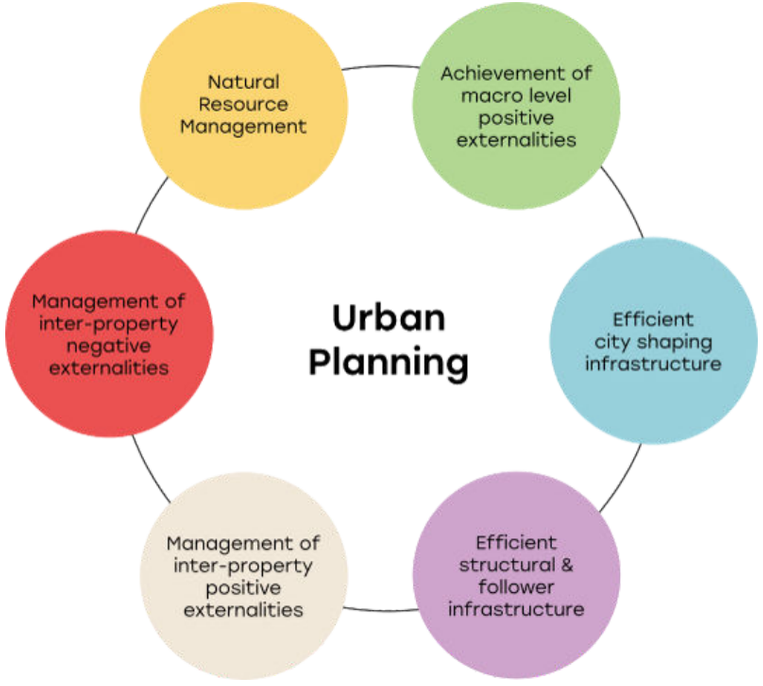
Further evidence of local government's careful and effective stewardship of public resources is found in satisfaction surveys.
Local government regularly outshines the State and Commonwealth in terms of trust.

Trust here is a reflection not only of accountability and accessibility, but also faith in the delivery service.

Stronger trust in local government spans across all demographic groups.

Productivity benefits from planning and building regulations

Contrary to planning being a red tape drag on productivity, it boosts the efficiency of markets in at least 6 ways



Addressing market failure

Local government is regularly called upon to be the provider of last resort, often due to absence of coordinated policy at the State/Federal levels.

Local councils have:
1) Lead the way on climate change mitigation and adaptation.
2) Used planning powers and local leadership to advocate for affordable housing.
3) Addressed gaps in child care and health services.

Myth busting

It is a perpetuated myth that local government uses planning powers to choke off the housing supply, a resource which our country desperately needs.

The truth is that planning schemes are important if developments are to meet community expectations. The real problem lies in inadequate State policy to incentivize the owners of land approved for development to let it be released for development in a timely fashion.

Ironically also, reducing local governments resources which are needed in strategic planning for housing growth and infrastructure provision. This is emphasized in rural and regional areas, further dragging housing supply.

1.0
Introduction

Introduction

1.1 Purpose of the paper

This paper addresses two inter-related but distinct questions:

1. What is the productivity of local government as a service provider, and what is the scope for improvement?
2. What contribution does local government make to the productivity of other sectors in the economy, and what is the scope for improvement?

1.2 Productivity of local government as a service provider

Local government delivers a wide range of services. This is an outworking of community expectations of participatory democracy, the need by other levels of government for local service delivery and the endemic presence of market failures. These services typically include, but are not limited to those on the right.

Ideally, local government's provision of these services should be governed by the subsidiarity principle. That is local governments should have full discretion over the tax / spend trade-offs in genuinely local matters ranging across infrastructure provision, service delivery and execution of regulatory functions.

Relatedly, where local government is delivering services on behalf of other spheres of government because of its superior local knowledge and adaptability, it ought to be treated as an equal partner.

The productivity of local government in delivering the portfolio of functions listed above is impeded by:

• **Lack of adherence to the subsidiarity principle** by State and Commonwealth Governments. For example; local governments are typically denied adequate discretion over local revenue raising to support service delivery in line with local preferences; State and Territory Governments regularly intervene in local planning matters; Commonwealth Governments regularly transgress subsidiarity boundaries and independently invest in local infrastructure confusing accountability for delivery of such services etc. Whilst the investments are often welcome, the process needs to be questioned.

• **Structural change.** Social, demographic, environmental or economic changes that create governance, financial and/or infrastructure and service delivery challenges. For example, Councils may be left with an inadequate tax or skills base to support service delivery due to population decline or a shift in the local economy.

Notwithstanding these challenges, local government is an efficient provider of government services, when compared to other spheres of government.

This paper provides evidence of the current productivity status of local government as a service provider and explores the scope for improvement, including how the sector can be freed up and better resourced to do its job. This is likely to require substantial reform in the way local government is mandated and funded.

1.3 Local government's contribution to productivity of other sectors

A healthy and productive local government sector is clearly important to local communities as 'consumers' of municipal services, such as those listed above.

Local governments are also mandated to boost the productivity of other sectors in the economy. Local government directly impacts broader economic productivity in at least nine ways as described below. The key drivers of a productive economy as articulated by the Productivity Commission include:

- The presence of dynamic firms operating in flexible markets
- A labour force geared to the needs of the future, and
- A widespread capacity to leverage new technologies.

Providing Urban Infrastructure

Arterial roads
Major cycleways
Green space networks
Clean streets

Mitigating externalities in urban development

Development approvals
Building controls
Separation of incompatible uses

Place making & Visitor economy

Tourism infrastructure
Culture and arts
Place quality/attractions
Safe streets

Providing land for housing

Strategic planning for housing development
Infrastructure coordination to support housing development

Better local labour markets

Provision/ facilitation of child care services
Facilitating access to training
Supporting social enterprises as skill accumulators
Supporting key worker housing

Climate mitigation & adaptation

Mapping & management of climate change hazards
Emergency management and recovery
Regulated retreat
Renewable energy networks

Providing land for business

Strategic planning for employment areas
Infrastructure coordination to support employment lands

Business clusters & innovation

Promotion of local business districts
Business incubators
Business angels

Circular economy

Resource recovery and reuse
Management of landfill

The nine local government functions listed above variously impact these drivers. Local government can be a critical agent or key partner in advancing these pre-conditions for productivity, or it can play a broader support role, as illustrated in the chart to the right.

This paper explains *how* local government supports productivity of other sectors. This focusses on local government's role in infrastructure and housing provision, and the mitigation of a range of market failures. The research shows that local government could play a still stronger role in boosting productivity if the issues to do with subsidiarity and structural change which are holding the sector back are successfully addressed in State and Commonwealth legislation and funding arrangements.

1.4 Shifting the dial

Five years ago, the previous Productivity Commission Review titled "Shifting the Dial" was published. Amongst many recommendations, a number had some direct relevance, including:

- Supporting local government performance through improving performance reporting
- Improving inter-governmental relations
- Strengthening internal capabilities within Australian governments
- Acknowledging the mixed outcomes (at best) of local government amalgamations

It is hoped that the next review builds on that momentum for further improvements to the sector.

TABLE 1: HOW LOCAL GOVERNMENT SUPPORTS PRODUCTIVITY

	DYNAMIC FIRMS/ FLEXIBLE MATTERS	FUTURE LABOUR FORCE	LEVERAGING NEW TECHNOLOGIES
PROVIDING URBAN INFRASTRUCTURE	■		■
PROVIDING LAND FOR HOUSING	■		
PROVIDING LAND FOR BUSINESS	■		
MITIGATING EXTERNALITIES IN URBAN DEVELOPMENT	■		
BETTER LOCAL LABOUR MARKETS	■	■	
BUSINESS CLUSTERS & INNOVATION	■	■	■
PLACE MAKING & VISITOR ECONOMY	■		
CLIMATE MITIGATION & ADAPTATION	■		■
CIRCULAR ECONOMY	■		■

■ Local government is a critical agent

■ Local government is a key partner

■ Local government plays a support role

1.5 Structure of the report

Sections 2 to 5 inclusive of the report are concerned with the first of the above questions, that is, the 'productivity of local government as a service provider' theme.

The discussion in these sections traverses comparative indicators of service productivity in local government versus other providers of similar services, including other State, Territory and Commonwealth Governments (Section 2) and the factors that may be impeding productivity in the sector including financial insecurity (Section 3), difficulties in securing skilled workers (Section 4) and challenges in digital transformation (Section 5).

Sections 6 to 8 inclusive address the second of the above questions – the role that local government plays in boosting or sustaining the productivity of other (producer) sectors in the economy. This discussion commences with the regulatory and service delivery functions which local government has because of market failures, and without which regional and national productivity would be dragged down (Section 6). The paper concludes with a deeper dive into three of these functions, namely infrastructure provision and regulation of housing supply (Section 7) and climate change adaptation and mitigation (Section 8).

Note that this report makes a number of assertions and uses live examples to better highlight those points. Many of the core issues are ubiquitous across the country, but given there are numerous state and territory jurisdictions, in some case the examples will only be relevant for some locations.

2.0 Productivity of local government as a service provider

2.0

Productivity of local government as a service provider

THIS SECTION DISCUSSES THE PRODUCTIVITY OF LOCAL GOVERNMENT AS A SERVICE PROVIDER. IT IDENTIFIES THE HOUSEHOLD, BUSINESS AND PROPERTY SERVICES TYPICALLY PROVIDED BY THE SECTOR AND APPRAISES THE EFFICIENCY BY WHICH THIS VALUE IS GENERATED. THE ANALYSIS MAKES COMPARISONS WITH SERVICE PROVISION PRODUCTIVITY IN THE TERRITORY, STATE AND COMMONWEALTH GOVERNMENT SECTORS. WHERE POSSIBLE AND USEFUL, INTERNATIONAL COMPARISONS ARE ALSO DRAWN.

The productivity of local government is ultimately about how effective it is in delivering desired community outcomes including:

- The equity and accessibility of core local government services
- The appropriateness of the services provided
- The technical efficiency and quality of the local government sector

2.1 Overview of local government productivity

Local governments are distinguished by the breadth of services they offer within their relatively small tax bases and administrations. These services generally fall into the following categories:

- Property & infrastructure services, which relate to investment in and maintenance of shared physical assets that hold communities and local economies together. More specifically; local governments maintain the road and active transport network covering all assets other than the relatively few which are designated to be of state and national significance; they are similarly responsible for the bulk of parks and gardens enjoyed by the community; Councils perform key environmental management functions including the drainage and overland flow aspects of the water cycle; and they provide infrastructure cleaning, waste management and resource recovery services.

- Household services, including; operation of neighbourhood and community-specific aged care and disability facilities; investment in arts infrastructure, and orchestration of events, festivals and place designations which celebrate distinctive local culture; provision of community centres, early childhood centres and neighbourhood houses which enable delivery of diverse services of value to families and children, youth and various special needs groups; creation of a network of indoor and outdoor sporting facilities; and registration of pets and animals.

- Business services, which include; supporting local firms – large and small – with training and networking programs; sponsoring high street and seasonal promotions (Christmas and Easter etc.) to boost business; providing facilities and services to support tourism, such as toilets, information centres, caravan parks, wayfinding and so on; and the formation of local economic development strategies which leverage local competitive strengths and assist in community wealth building.

- Regulatory services, which are essential due to market failures and externalities (see Section 6). These cover health & safety (for example, in maintaining hygiene standards in local food outlets); land use planning and development assessment; assurance on the structural sufficiency of approved buildings; and formulation and enforcement of local laws relating to pets, noise, use of public land etc.

- Emergency management, which includes risk management and planning as well as provision of first responder capability in the face of fires, floods and other crises. Many also engage in long term recovery efforts well beyond the event.

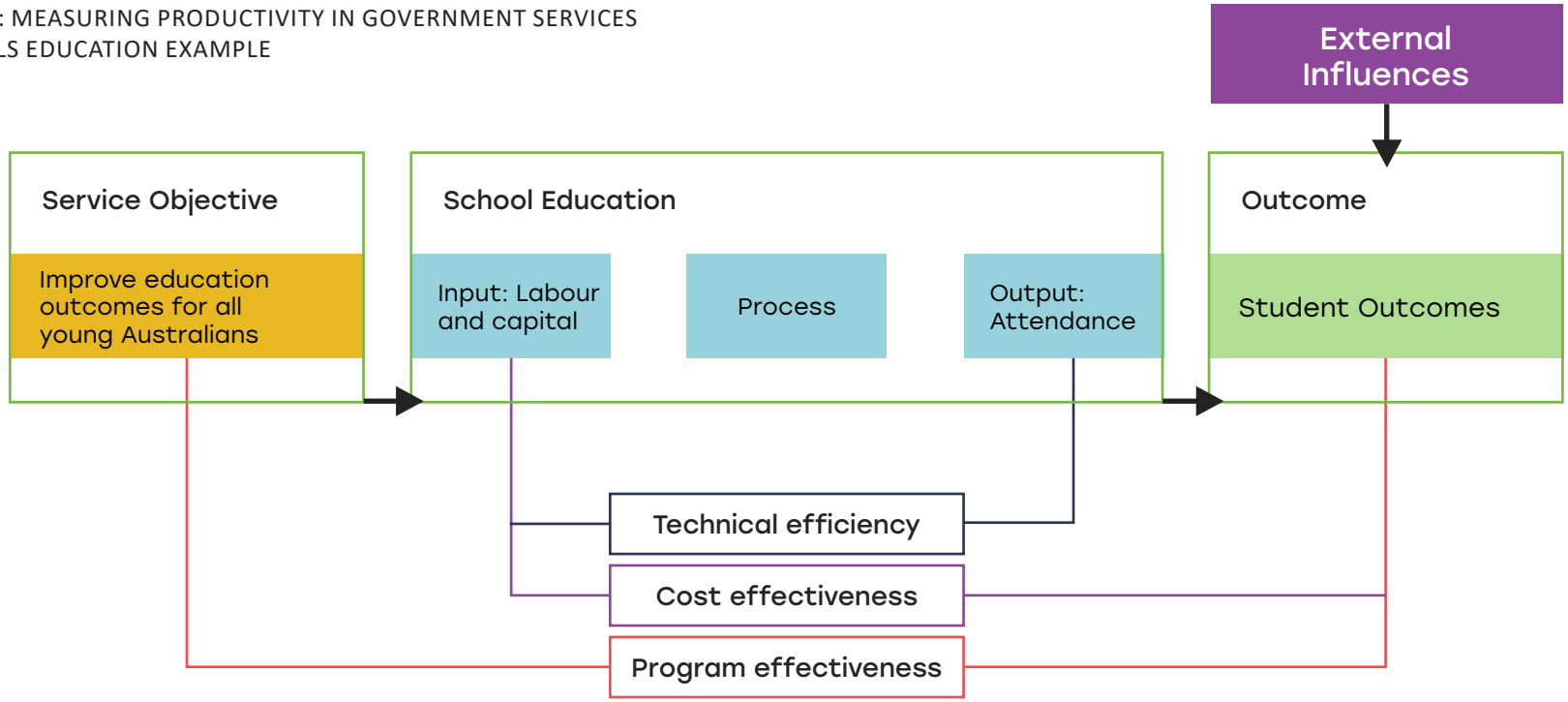
While the Commonwealth Government and State/Territory Government typically set up one or two purpose departments and rely on economies of scale in service delivery, local governments typically do not have this option. Instead, their advantage in service delivery stems from economies of scope; that is, generating more value from available resources by leveraging place based synergies between facilities and programs. For example, open space required for flood management can double as playing fields for most of the time. Similarly, by providing well designed multi-purpose community facilities, local governments can induce otherwise unused volunteer effort in skills development, health maintenance and cultural learning.

2.2 Measuring productivity in government services

As outlined by the Productivity Commission (PC, (2022)), productivity in government is ultimately about how effective it is in delivering desired community outcomes including equity, access, appropriateness, efficiency and quality. Also as discussed by the PC, measurement of productivity in government services is not straightforward. While focussing on the ratio of discrete outputs versus resources expended may be adequate for commercially provided products and services, it will not necessarily provide adequate insight into the outcomes from government programs and how these relate to the objectives set by governments. This challenge is well illustrated by the PC with reference to a 'schools education' example (Figure 1).

Productivity changes can vary significantly across government entities that seem similar, so productivity will vary from council to council (OECD, 2021). Factors that are associated with productivity improvements in government include the specialisation of labour and adoption of technology (OECD, 2021). Barriers to increasing local government productivity may include the struggle to recruit qualified employees, the slow take up of digital and data technologies and operational constraints or funding limitations imposed by other spheres of government.

FIGURE 1: MEASURING PRODUCTIVITY IN GOVERNMENT SERVICES – SCHOOLS EDUCATION EXAMPLE



Source: Productivity Commission (2022)

2.3 Productivity in local government

Measurement of total factor productivity

Notwithstanding the conceptual and data difficulties which affect productivity measurement in local government, the Essential Service Commission undertook a calibration of 'technical efficiency' – as illustrated in Figure 1- for the full set of Victorian Councils in 2017 (ESC (2017)). The Commission sought to measure 'total factor productivity' (TFP), that is, the relationship between the total outputs of local government versus the total inputs.

Inputs were simply defined to include Council expenditure including staff salaries, while outputs were deemed to be represented by three variables for each local government area – the number of households and business serviced, the tonnes of waste collected and the length of roads under management.

TFP was measured statistically rather than by reference to actual service outcomes. That is, the notional productivity performance of individual Councils as reflected in the ratio of outputs versus inputs was compared to a productivity 'frontier' determined, in effect, by those Councils returning 'superior' ratios. Trends in TFP are then determined based on how well Councils might be converging on the productivity frontier over time.

ESC (2017) found that TFP fell between 0.6 to 2.3 per cent from 2010-11 to 2015-16, while TFP increased by 1 per cent in the whole Victorian economy during the same period. The consultants undertaking this research suggested that this decline may have been due to underutilisation of technology or the impacts from rate capping. (Note that this example is Victorian specific, and is somewhat different in other jurisdictions).

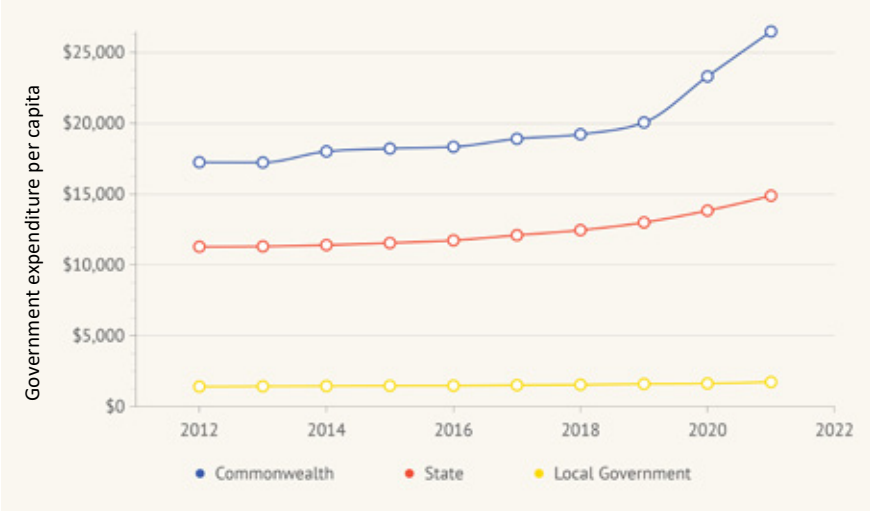
Comparison with other tiers of government

As mentioned, measurement of productivity in local government by comparison of simplified outputs and inputs is fraught, for reasons evident in the PC's conceptualisation of efficiency and effectiveness in government services. For example, the measured TFP of a Council using the ESC's methodology would decline if the local government in question were to successfully reduce the tonnage of waste generated by households and businesses through the institution of better on-site recycling infrastructure.

A sense check may be applied on ESC style investigations of local government productivity by looking at the relationship between inputs and outputs at a still higher level (total resources expended versus total number of people served) and comparing across other providers of government services, namely State and Commonwealth Governments. Figure 2 shows that while government expenditures per capita from State and Commonwealth governments have been gradually and then rapidly increasing over the past decade, local government expenditure per capita has remained.

If the assumption can be made that the rate at which the scope of services demanded by the community is increasing at much the same rate across the three tiers of government, the crude measure in Figure 1 suggests that local government is the best performer in the public sector based on TFP.

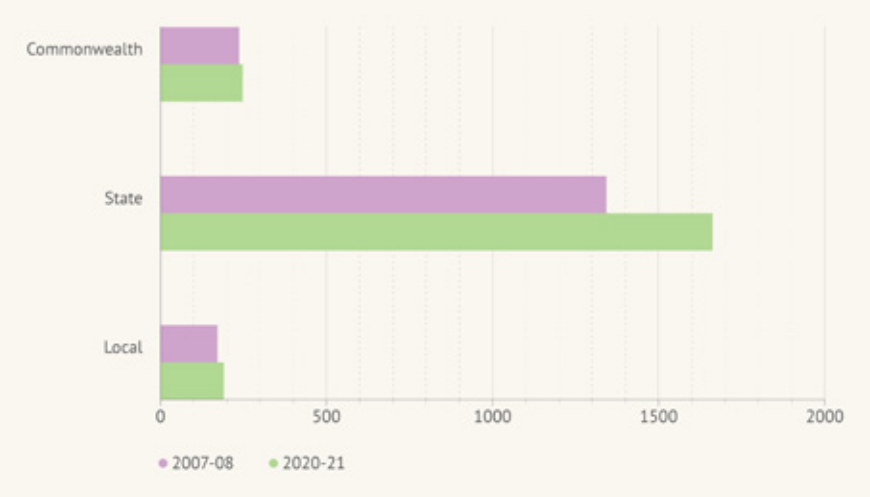
FIGURE 2: GOVERNMENT EXPENDITURE PER CAPITA IN AUSTRALIA BY GOVERNMENT SECTOR (2012-2021)



Source: ABS, 2021

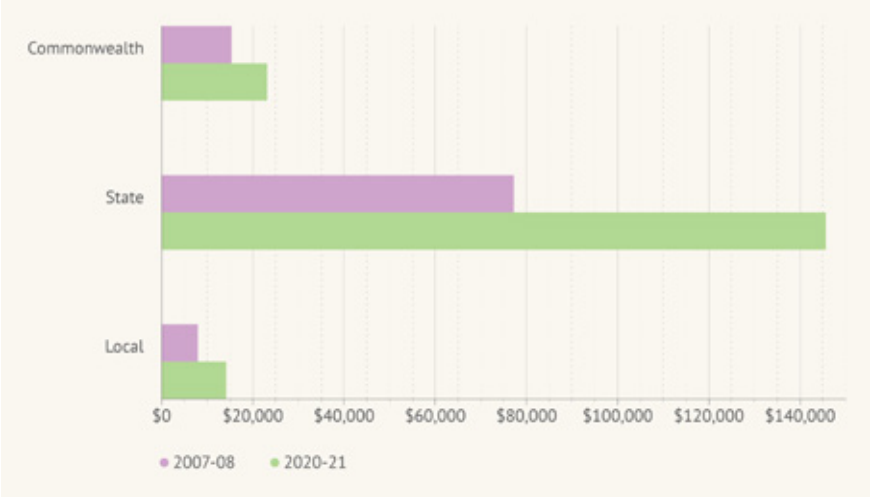
The pandemic does not explain the TFP divergence between the different tiers of government. Between 2007-08 and 2020-21, the number of employees for state/territory government increased the most, by 320,000 employees while that figure increase by 19,000 employees for local government and 11,000 for the Commonwealth government (Figure 3). Measured by value of labour inputs, the growth in State/Territory Government was even greater (Figure 4).

FIGURE 3: NUMBER OF GOVERNMENT EMPLOYEES BY SECTOR (2008-2021)



Source: ABS, 2021

FIGURE 4: CASH AND WAGE SALARIES OF GOVERNMENT EMPLOYEES BY SECTOR IN $M (2008-2021)



Source: ABS, 2021

2.4 Funding and delivery of local government services

Core and partnership services

The local government services outlined in Section 2.1 can be segmented by reference to means of funding. Some form 'core' local government business for which Councils have a relatively high degree of autonomy in determining service levels in conjunction with their communities.

Other services are jointly provided in conjunction with a partner agency or program in State/Territory Government as illustrated in Table 1. In part, these partnerships reflect an inherent limitation in the service delivery model typically found in State/Territory Governments, which, as noted broadly rely on scale economies. For the services listed in the second column of the table, State/Territory Governments need local governments as delivery agents because Councils are in a better position to tailor the offering to local needs, and they are uniquely placed to leverage local synergies including with private sector and community entities. In this way, the productivity of State/Territory Governments is partially contingent on an efficient and effective local government sector.

While local governments may have a degree of autonomy in terms of core services, their productivity in these areas is potentially constrained by statutory limits on their ability to invest in better delivery models. For example, rate capping, may militate against Council engagement with transformative e-government strategies.

Productivity in core local government services, more broadly defined in terms of meeting reasonable community expectations, is also constrained by inadequate fiscal equalisation. Many Councils in rural and remote Australia do not have the capacity within their statutory funds raising limits, to deliver basic infrastructure and services.

TABLE 2: OVERVIEW OF LOCAL GOVERNMENT SERVICES[1]

	Core Local Government Service	Jointly provided with State
Cleaning & waste	■	
Roads & transport	■	
Parks & gardens	■	
Environment	■	
Aged care & disability		■
Arts & culture	■	
Community development	■	
Equality & diversity	■	
Family & children		■
Youth services	■	■
Sports & recreation	■	
Pets & animals	■	
Local economic developement	■	
Tourism	■	■
Planning & building	■	■
Local laws & permits	■	
Health & safety	■	
Emergency response	■	■
Risk management & planning	■	■

Property & Infrastructure | Household Services | Business Services | Regulatory Services | Emergency Management

[1] Note this is intended as an overview – not all these services are not delivered in the same ways across all states and territories.

International comparisons on scope of local government services

While local government is required to offer a very broad spectrum of services, the bulk of resources in this sector flow into property and infrastructure services. This is evident in Figure 5 (bearing in mind that the 'recreation, culture and religion' field is likely dominated by services related to parks and gardens and associated sporting infrastructure).

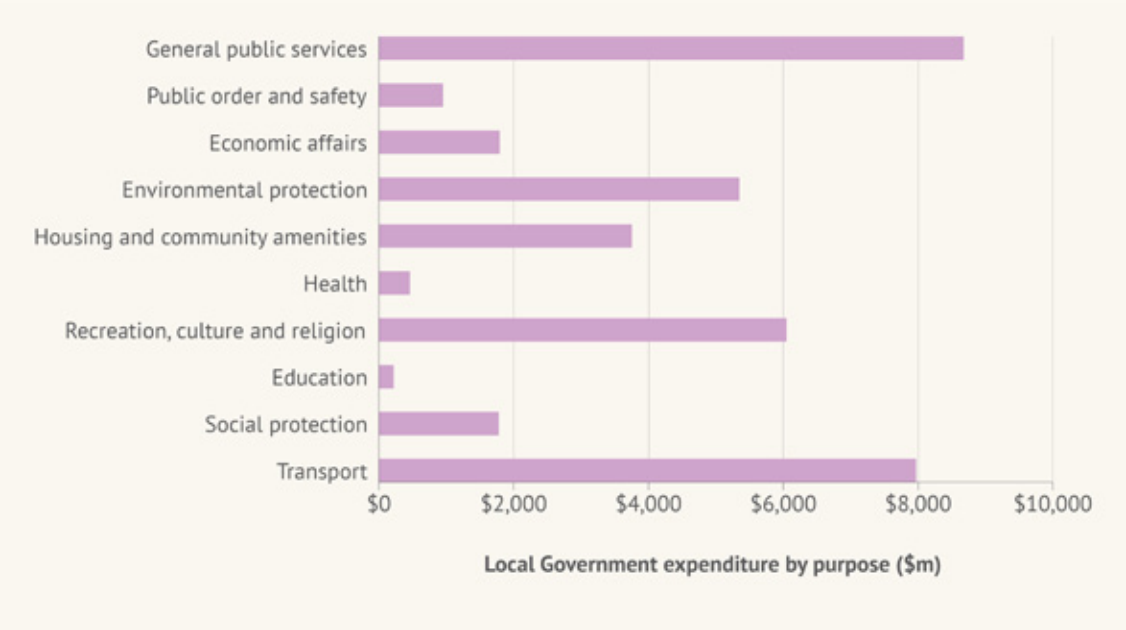
Australia has the second lowest local government expenditure as a percentage of GDP compared to other OECD nations with central, subnational and local levels of government with around 2.4 per cent, while all the other nations apart from Mexico had about 6 per cent. Canada's local government expenditure as a percentage of GDP was 8.8 per cent, over 3.5 times Australia's (Figure 6). Likewise, Australia has the second lowest local government expenditure per capita (Figure 7).

The utility of these comparisons is limited by differences in the scope of local government services across the jurisdictions in question. For example, Councils in Canada may be responsible for police and fire protection, water and sewage services, recreation services and local public transport all of which are typically delivered by State/Territory Governments in most parts of Australia.

A comparison with New Zealand, where the scope of local government services is more aligned to that in Australia, shows that it continues to account for a relatively small share of GDP (Figure 8).

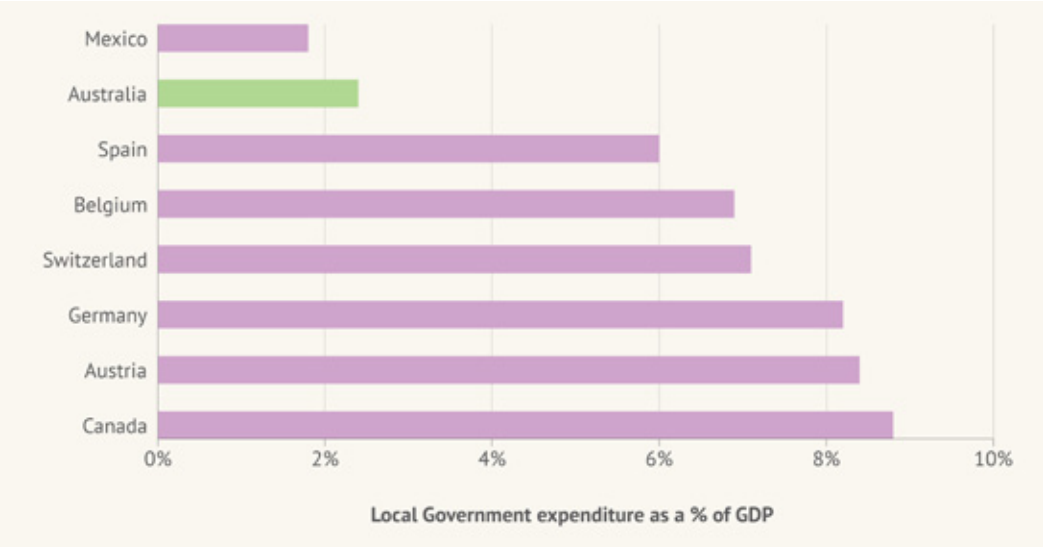
More generally, Figure 8 suggests that Australia's local government sector is relatively small in the context of a broad cross section of moderate and higher income nations, once functions like health, education and social protection are set aside in the comparison. This may be a pointer that Australian local governments are efficient in their use of resources.

FIGURE 5: LOCAL GOVERNMENT EXPENDITURE BY PURPOSE IN 2017-18



Source: ABS, 2019

FIGURE 6: LOCAL GOVERNMENT EXPENDITURE AS A PERCENTAGE OF GDP IN FEDERATIONS AND QUASI-FEDERATION COUNTRIES

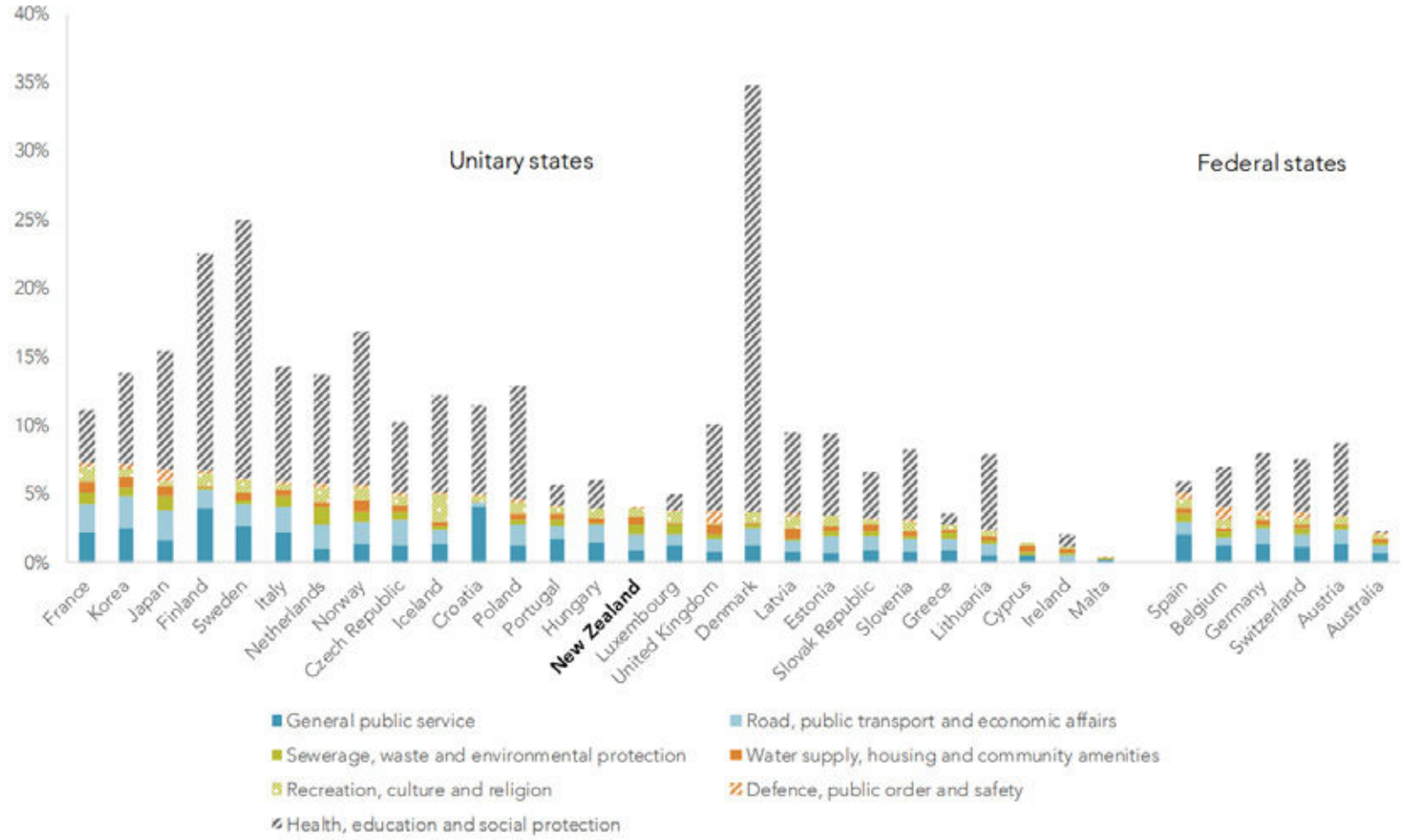


Source: OECD Cities and Regions Statistics (2019)

FIGURE 7: TOTAL LOCAL GOVERNMENT EXPENDITURE PER CAPITA IN FEDERATIONS AND QUASI-FEDERATION COUNTRIES

Source: OECD Cities and Regions Statistics (2019)

FIGURE 8: LOCAL GOVERNMENT EXPENDITURE BY FUNCTION AS A PERCENTAGE OF GDP



Source: Crawford, R. and Shafiee, H. (2019) Scope and funding of local government: an international comparison, Working Paper 2019/2, New Zealand Productivity Commission

3.0
Financial sustainability

3.0

Financial sustainability

HAVING DEMONSTRATED THE KEY SERVICE ROLE OF LOCAL GOVERNMENT, AND ITS RELATIVE PRODUCTIVITY, THIS SECTION DISCUSSES THE FISCAL UNDERPINNINGS AND SUSTAINABILITY OF THE SECTOR.

The local government sector is increasingly facing financial stress through varying cost pressures, impacting its financial sustainability.

These cost pressures include:

- Cost shifting, where responsibilities are passed onto local councils from other levels of government
- Declining and ad-hoc grants from higher levels of government
- Management of an increasing number of depreciating assets
- The implementation of rate capping, where rate rises are limited by state government

3.1 Financial constraints and cost pressures on local government

The local government sector is increasingly facing financial stress as a result of varying cost pressures, impacting their financial sustainability. Councils on average raise over 80 per cent of their revenue independently, with approximately 38 per cent stemming from rates and 25 per cent from user charges (ABS 2022). The remainder is largely from state and federal grants, in addition to other revenue sources such as fines and yields from investments. However, in rural and remote councils, grants often make up over half of council revenue.

Cost shifting

Cost shifting occurs when State and Commonwealth governments transfer responsibilities for programs, services and infrastructure to local government without sufficient funding, or when grants for the provision of these services are allowed to fall below actual costs over time.

Local Government NSW estimated that cost shifting and responsibility transfers from state and federal government in the 10-year period before 2021 "imposed a cumulative total burden of $6.2 billion" for local governments in NSW (Public Accountability Committee, 2021).

The Municipal Association of Victoria (2022) cites a telling example of cost shift with reference to library services in that State. In 1975, Victorian public libraries were equally funded by local and State Government. By 2015/16, state funding had decreased to just 15 per cent of public library operating costs in 2015/16. Local councils were forced to make up the funding shortfall from other sources.

Revenue leakage

Local Governments are able to impose fees and charges on users of specific, often incidental, services. However, in some cases fees are determined by State/Territory Governments through legislation. Fees set in in this manner are a significant revenue leakage because of:

- Lack of indexation,
- Lack of regular review (fees may remain at the same nominal levels for decades), and
- Lack of transparent methodology in setting the fees (fees do not appear to be set with regard to appropriate costs recovery levels).

For example, in Western Australia fees for town planning functions are set by the Planning and Development Regulations 2009, and are not subject to annual indexing or review. These fees have not been increased since 2013 leading to lower resourced local governments and cross subsidisation of these serviced by ratepayers. Over the same period, fees for State/Territory Government led-planning functions have increased by almost 45 percent.

Since Local Governments do not have direct control over the determination of fees set by legislation, this revenue leakage is recovered from rate revenue. This means all ratepayers are subsidising the activities of some ratepayers and developers.

Commonwealth and State/Territory Government grants

In place for nearly half a century, Financial Assistance Grants (FA Grants) from the Commonwealth Government were originally conceived as a base-load mechanism for horizontal fiscal equalisation in local government. That is, the Grants were intended to assist all councils but with a particular bias towards those that must contend with 'exogenous' revenue raising constraints or additional service delivery costs.

FA Grants have declined from 1.2 percent of Commonwealth revenue in 1993-94, to 0.53 percent in 2021/22 (Australian Local Government Association, 2022).

Recurrent government transfers to local government, such as FA Grants, are typically indexed to CPI. This does not accurately reflect movements in input costs for services provided by Councils. These are largely dependent on construction, material and wage costs. In 2014 to 2016, indexation of FA Grants was frozen. Although restored in 2017, the impact of the freeze is still felt on the base level of grants (Australian Local Government Association, 2022).

While base-load financial assistance to Councils has been declining as a share of Commonwealth outlays, governments at both State and federal levels have made greater use of targeted grant programs which give significant discretion to presiding Ministers over where and how funds are delivered. Grants are often awarded in a reactive and ad hoc way.

A NSW Parliamentary inquiry found that the NSW State Government operated a partisan and "brazen pork-barrel scheme", politically misusing $252 million of taxpayers' money with the Stronger Communities Fund grant program (Public Accountability Committee, 2021). The scheme favoured councils in coalition electorates and "punished councils that objected to forced merger proposals". Similar critiques have been made of the Commonwealth's Building Better Regions, Safer Communities, and the Community Sport Infrastructure Grant programs (Twomey, 2021 https://theconversation.com/rorts-scandals-in-politics-are-rife-so-what-exactly-are-the-rules-157411).

Finally from a productivity perspective, the whole practice of having under resourced Councils go through the costly process of grant applications with no guarantees of what they receive is far less productive than having a stable, non-competitive grant process (that is still based on due process and sound rationale).

Stunted revenue growth

Intended to protect residents and businesses from municipal fiscal recklessness, rate capping has instead worked to diminish local living standards according to the Australia Institute (2021). Negative impacts of rate capping include lower levels of service delivery, decreased employment and/or wages within local government, higher user fees for municipal services and lower expenditures flowing back into local private sector businesses. The Institute argues that rate capping in Victoria has disrupted a historical trend whereby local government services have expanded and improved in line with population and economic growth.

The Australia Institute (2021) further estimates that rate caps have reduced employment in Victoria (counting both direct local government jobs and indirect private sector positions) by up to 7,425 jobs in 2021-22, with an estimated GDP reduction of up to $890 million in 2021-22. This figure is expected to grow if the policy is maintained. Currently, fewer than half of Victorian local government workers are permanent, full-time employees.

Additional empirical evidence from Yarram et al (2021) indicates that rate capping in Victoria significantly reduced total expenditure for rural councils. Negative effects of spending cuts were identified for particular program areas such as aged and disabled services in both rural and urban councils, and family and community services in urban councils.

Hence the evidence would suggest that the practice of capping rates speaks more to political expediency exploiting misconceptions in the local government sector than improving efficiency or trust in the sector's performance.

Note that rate capping does not apply in many states/territories. This further highlights the lack of a consistent approach to managing fiscal risks across the country. The management of those risks is warranted, but the current patchy and poorly directed mechanisms need to be addressed in a consistent and sustainable fashion.

Asset management

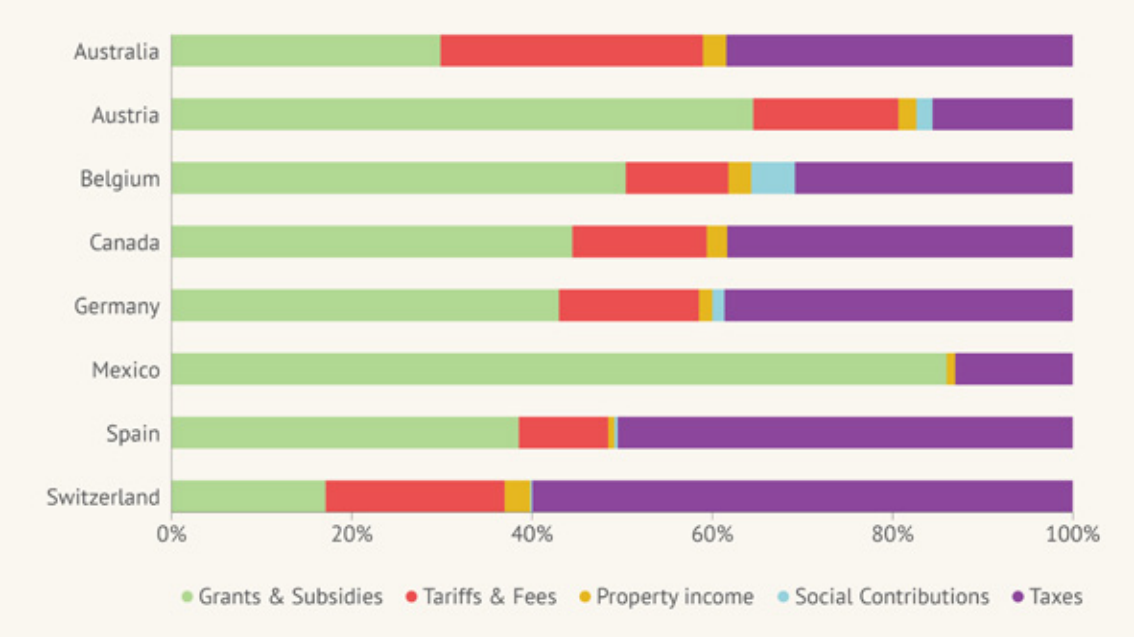
According to the Institute of Public Works Engineering Australia (IPWEA) (refer to ALGA State of the Assets Report by IPWEA), 1 in 10 of all local government assets across the nation need significant attention, and 3 in every 100 assets may need to be replaced. IPWEA also estimates that replacing poor quality infrastructure will cost $51 billion and replacing infrastructure in fair condition will cost between $106 billion and $138 billion. It concludes an "infrastructure renewal gap is prevalent", where assets deteriorate faster than councils can fund maintenance/renewal works.

The IPWEA suggest that revenue constraints will drive local government to reduce asset levels to save on maintenance and depreciation costs, leading to a reduction of community infrastructure. They further observe that capacity and capability deficits can also increase inefficiency and costs

3.2 International comparisons

Figure 9 shows that Australia has the second lowest grant and subsidies revenue share out of their total local government revenue, with almost 30 per cent and the largest share of tariffs and fees as a revenue source, at 29 per cent. The rest of the revenue comes from taxes with a 38.5 per cent share of revenue, and property income with 2.6 per cent, while there are no social contributions. This shows that in other comparable nations, there is a larger reliance on stable funding coming from different layers of government.

FIGURE 9: REVENUE SOURCE AS A SHARE OF TOTAL LOCAL GOVERNMENT REVENUE IN FEDERATIONS AND QUASI-FEDERATION COUNTRIES



Source: OECD Cities and Regions Statistics (2019)

3.3 Remote councils

Remote and regional councils are particularly dependent on grants. They typically have a sparse population meaning a significantly smaller rate base while covering a large geography. This means higher cost per capita in the provision of essential services like roads, sewerage and water.

This issue is compounded by population decline in many remote councils. Seventy per cent of remote councils saw a population decrease from 2014 to 2018 (in comparison to 38 percent of all LGAs).

The shrinkage in ratepayer base significantly impacts financial stability. Through empirical analysis Dollery (2022) found that a major threat to the financial sustainability of remote local councils is the long-term inability to maintain assets to an adequate level. This means that councils will be reliant on state and federal government grants, especially given the inflexibility of municipal fiscal generation and rate capping.

As noted, fiscal constraints for remote councils reverberate through the local economy through foregone output and employment. Additionally, the Australia Institute highlights the stimulatory effect of local government expenditure and employment in regional areas, where the work of local government investment contributes a much greater share of economic activity than in metropolitan areas – this contribution needs to be properly acknowledged as a serious risk if that source of activity then becomes constrained.

3.4 Productivity impacts relating to financial sustainability

According to a literature review by the OECD (2021), there is evidence suggesting decentralisation of local governments can foster policy innovation through policy competition, leading to increased participation and accountability.

Multiple studies (OECD 2021, Drew 2014, Emmanuel Brunet-Jailly 2010) show that fiscal decentralisation through better funding of local governments can reduce regional inequality.

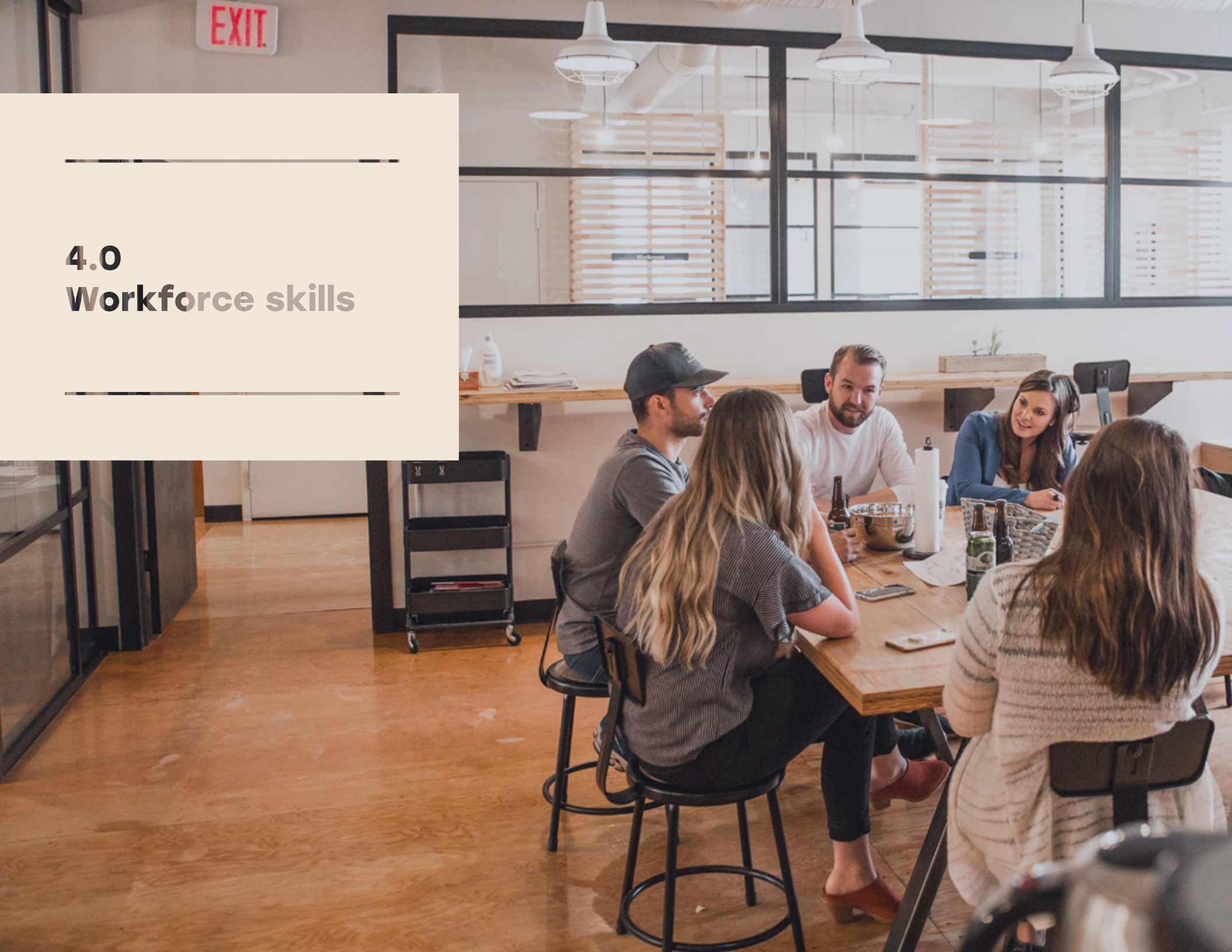
Council amalgamations have been a standard feature of State/Territory Government 'solutions' to the fiscal unsustainability of local governments. However, evidence of the efficacy of such strategies is sparse. Given the multi-portfolio nature of local government business (see Section 2), there appear to be significant limits on economies of scale in this sector. Indeed, increasing scale in local government can engender additional costs in co-ordination and could put at risk place based synergies in service delivery which are the hallmark of municipal operations at their best.

Under local government reforms instituted in Queensland in 2007, 157 local authorities were required by the Queensland Government to amalgamate into 73 local authorities. An evaluation undertaken (Drew J. K., 2014) indicated that these amalgamations increased the proportion of Queensland residents in councils operating with diseconomies of scale to 84 per cent, compared to 64 per cent prior to the amalgamation.

A later study by Drew et al showed that amalgamating councils could in some cases be relied upon to improve the efficiency of local government. Unit costs were empirically shown to rise (2021).

Academics also argue that larger local councils tend to be less democratic and accountable and are not an effective way to strengthen local governments (Emmanuel Brunet-Jailly, 2010).

However, resource sharing initiatives between councils have been shown to be effective, especially for local councils (South Australian Productivity Commission, 2019). These range from informal information sharing arrangements to formal legal structures including regional subsidiaries.



4.0
Workforce skills

4.0

Workforce skills

DIFFICULTIES IN SECURING THE RIGHT QUANTUM AND MIX OF SKILLS TO SUPPORT LOCAL GOVERNMENT SERVICE PROVISION ARE LIMITING THE PRODUCTIVITY OF THE SECTOR. THIS SECTION DEFINES AND MEASURES THIS PROBLEM.

Local governments have an important role in workforce development, both for their own productivity and that of their host regions. Challenges to delivery are discussed.

- Skill shortages in private and public organisations have been exacerbated by the COVID-19 Pandemic
- Employee attrition and an ageing workforce are on ongoing and escalating difficulty
- Barriers to Workforce Planning and Management include a shortage of resources within councils, a lack of skilled workers and the loss of corporate knowledge as employees retire or resign.
- Council plays an important role as an anchor organisation and in increasing productivity through utilising endogenous talent and innovation.
- The workforce issue has now become inextricably linked to the housing issue, with the attraction of key workers limited for many communities if there is no housing available.
-

4.1 Workforce needs & skill shortages

SGS Economics and Planning was commissioned by WALGA and LGAQ on behalf of the Australian Local Government Association (ALGA) to undertake the 2022 Australian Local Government Workforce Skills and Capability Survey (hereafter referred to as the 2022 Survey). The project was funded by the Commonwealth Department of Infrastructure, Transport, Regional development, Communications and the Arts, but is being oversighted by the Local Government Workforce Development Group.

The 2022 survey seeks to gather contemporary insights into the national workforce profile of the local government sector. By understanding the Australian Local Government sector's workforce and organisational capability, this work will enable the sector to determine current and future workforce needs and priorities.

The Final Report on the 2022 survey is unpublished at the time of writing.

As a snapshot, the chart below shows a national breakdown of local government skills shortages. A majority of Councils in each State and Territory are experiencing significant skills shortages, although the extent and occupational areas impacted differ by jurisdiction.

192 of the 210 (91.4 percent) participating councils reported that they were experiencing skills shortages in 2021-22, compared to the 68.9 percent of councils in 2017.

FIGURE 10: PERCENTAGE OF COUNCILS WITH SKILLS SHORTAGES, 2022

Source: (SGS Economics and Planning, 2022)

The following table summarises the most common occupational skills shortages experienced during 2020/21. Similar to past survey results, engineers have been identified as the top professional skill shortage occupation, followed by urban and town planners, building surveyors, and environmental health officers. Many of these were also identified in a 2017 survey.

Human resource professionals were not identified in the top ten Professional and Technical skill shortage occupations in 2017 but was the fifth most commonly identified in 2022 by 60 responding councils. This may be due to changing regulatory requirements, increasing levels of governance and compliance, or an increased focus on workforce planning.

Among operational and trade occupations, supervisors and team leaders remain the most common skills shortage area, affecting 96 councils. This was followed by labourers, IT and ICT technicians, and truck drivers – an emerging skills shortage area which was not identified in the top ten in the previous survey.

As a result of these skills shortages, councils said that they resorted to recruiting less skilled applicants for engineering, urban and town planning, building surveying, and supervisor and team leader roles. Inevitably, this has had adverse implications for local government productivity.

4.2 Workforce attraction & retention issues

An increase in unplanned staff departures[2], as shown in Figure 11 below may be partly attributable to the shift from general purpose to specific funding by state/ territory and Commonwealth governments.

Impacts of the COVID-19 pandemic have been felt differently across the country. Many councils reported that the COVID vaccine mandates had been a challenge and they had lost staff as a result.

Some councils in Western Australia felt the impact of the pandemic's border closures on their ability to attract staff externally from elsewhere in Australia (as well as internally), which increased competition for the existing workforce. In contrast, some councils in South Australia experienced more interstate applicants and provided financial assistance to assist with relocation.

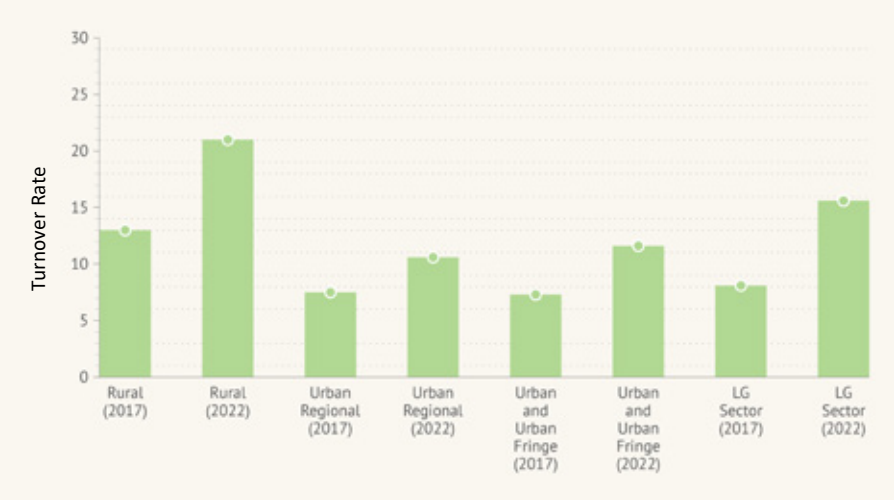
[2] This excludes retiring, redundant, casual and limited tenure workers

TABLE 3: COMMON OCCUPATIONAL SKILL SHORTAGES

CATEGORY	OCCUPATION	# RESPONDING COUNCILS	% RESPONDING COUNCILS
PROFESSIONAL AND TECHNICAL	Engineers	96	46%
	Urban & town planners	83	40%
	Building surveyors	71	34%
	Environmental health officers	62	30%
	Human resource professionals	60	29%
OPERATIONAL AND TRADE	Supervisors/ team leaders	52	25%
	Labourers	45	21%
	IT/ICT Technicians	43	20%
	Truck drivers	40	19%
	Accounts/payroll clerks	37	18%

Source: (SGS Economics and Planning, 2022)

FIGURE 11: TURNOVER RATE BY ACLG CATEGORY IN AUSTRALIA, 2017 AND 2022



Source: (SGS Economics and Planning, 2022)

The pandemic has also highlighted the range of functions performed by councils, and some local government workers are considering leaving the sector due to the additional demands placed on delivering face to face services.

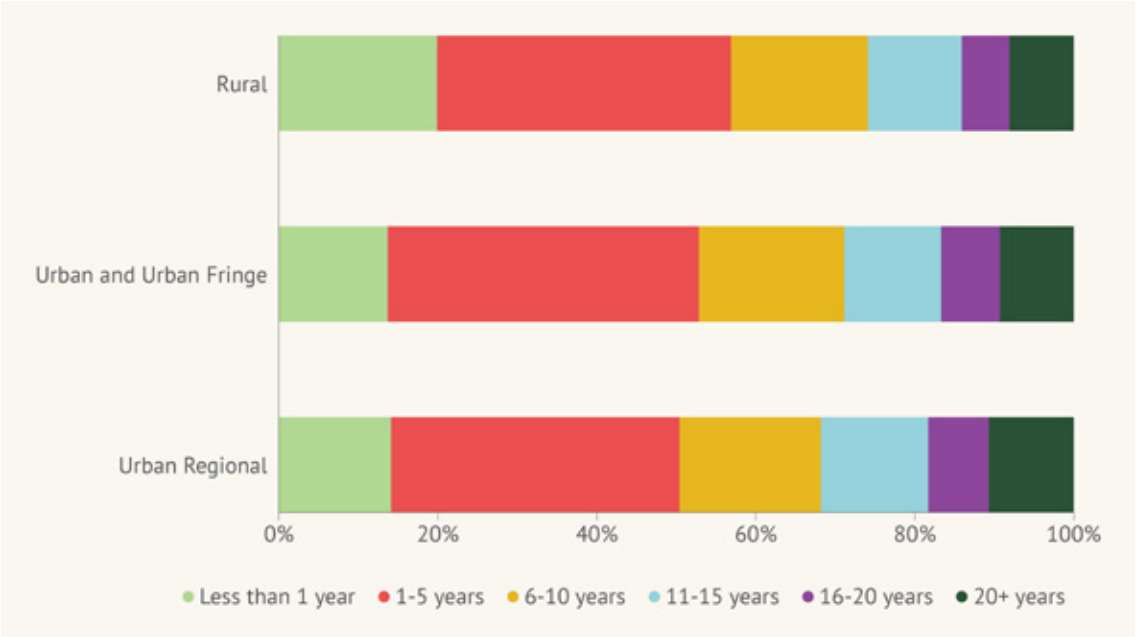
The following chart shows that rural councils experienced the highest rates of employee turnover in both 2017 and 2022. At the same time, rural councils face the greatest challenges in attracting replacements due to distance, remoteness and the depth of skills, qualifications and educational opportunity in remote areas.

Overall, employees' length of service by was similar across rural and urban classifications. The main difference was that Urban Regional councils had the greatest proportion of workers exceeding 20 years of service, while Rural councils had the greatest proportion of newer (less than 1 year) workers (Figure 12).

Increasing turnover, and reduced retention of long-standing employees works against local government productivity. It erodes 'corporate memory' and diverts scarce resources to training and induction processes.

Local governments have a considerably older workforce with a declining participation level of workers under the age of thirty. Low apprentice and trainee numbers, combined with existing skills shortages, have led some Councils to upskill or reskill existing workers. However, this will depend on resourcing, and there is a view that training costs, lack of suitable local trainers, and competing workloads may be prohibitive. (Department of Local Government, 2012).

FIGURE 12: AUSTRALIAN LG EMPLOYEE LENGTH OF SERVICE BY ACLG BROAD CATEGORY



Source: (SGS Economics and Planning, 2022)

4.3 Workforce strategic planning

New South Wales, Victoria and Western Australia local governments have explicit legislative requirements to prepare workforce plans, workforce management strategies, and/or strategic resource plans. It will be important to support some councils in preparing these plans, to consider whether such requirements are logical for smaller councils, how these plans maintain currency over the longer term and in light of changing local and regional contexts.

Other states and territories have less explicit requirements but are still expected, if not required, to address workforce planning matters in their community strategic plans or operational plans.

4.4 Barriers to workforce planning

The 2022 survey identified many risks which may prevent delivery of effective workforce planning including:

- Insufficient workforce data limiting the ability to plan fully and effectively
- Workforce not reflecting sufficient diversity
- Reputation risk associated with the quality and quantity of staff
- Inability to achieve strategic goals
- Inability to achieve operational goals
- Inefficient, ineffective management of human resources
- A workforce that is inflexible and does not have the necessary capabilities to deliver future services necessary for the organisation to achieve its goals

- An inability to attract and retain high quality staff
- Learning and development resources being allocated to activities which do not support the strategic goals of the organisation
- Under-utilisation of staff
- Increased staffing costs
- Loss of corporate knowledge as a result of key staff departures
- Increased reliance on a contingent work force
- Uncompetitive remuneration structures
- Inability to meet community and/or government expectations regarding provision of services
- Lack of preparedness for operating contingencies
- Inability to plan (adequately) for associated capital and operational expenditure
- Inability to adapt to new or changing conditions
- Inability to match staff with changing work requirements

4.5 Future workforce skills

The 2022 survey identified that an ageing workforce, increasing levels of governance and compliance, and major council or external infrastructure projects were among the factors that would most impact future skilling needs. In terms of how councils are responding to a changing workforce environment, less than half who participated in the 2022 survey said they analysed future roles and requirements. Quality data that reports on the whole of sector workforce profile will be critical evidence to support relevant initiatives.

Importantly, skill transfers need to occur from more experienced local government employees to early-career employees. High staff attrition limits the transfer of knowledge, and the increase in remote/hybrid working may impact knowledge transfers.

Capturing the latest innovations, or remaining current with best practice, requires both digital capability and digital infrastructure. Digital capability refers to the human skills required within an organisation to utilise digital infrastructure, while digital infrastructure is the technology underpinning the organisations. With an aging workforce and existing skill shortages, how can councils ensure they are on the rising tide of tech innovation, how can tech assist in knowledge transfer/ capture?

As technological enhancements enable more routine technical tasks to be automated, workplaces will increasingly rely on non-technical skills such as critical thinking, emotional judgement and problem solving skills. Soft skills contribute to higher revenue, productivity and profitability across industries and countries. Soft skills are transferrable and provide more resilience for both workforce participants and organisations or businesses. Soft skills are now being included in education curriculums and being assessed across year groups in a similar style to NAPLAN testing (see Figure 13) (Deloitte Access Economics, 2017). In order to capture the benefits of such skills, councils will increasingly need to be able to attract and retain younger staff.

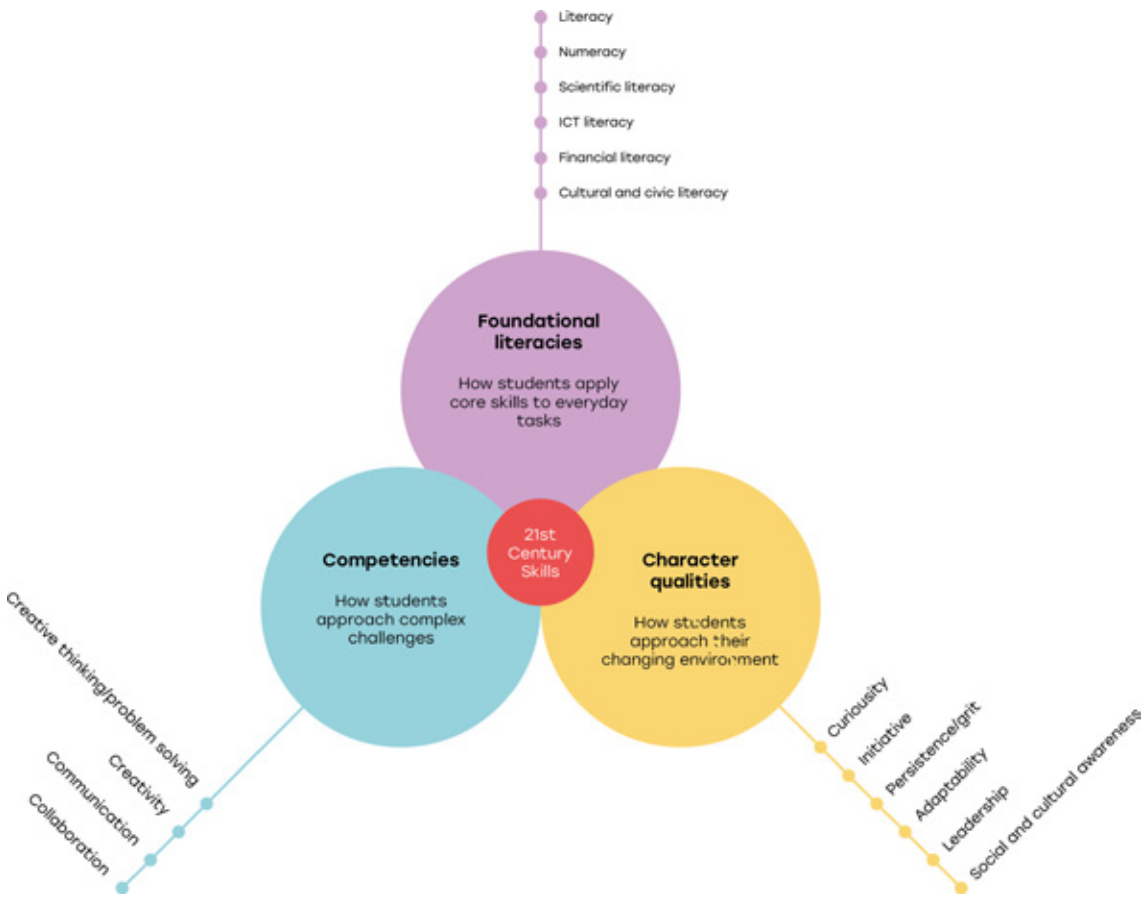
4.6 Skills generation for the host region

As the level of government closest to constituents, Councils are well placed to act as an anchor organisation in the community, supporting the economic benefits of harnessing talent and facilitating community cohesion. Councils are a major employer in many regional and rural areas. Under a Regional Learning Systems approach, councils are positioned among a broader network of local authorities, businesses, educational institutions and training providers to establish cooperative partnerships, not just for training purposes but for job stimulus and regeneration.

Place-based employment in areas which are subject to outflows of skilled workers is an important means of capturing endogenous growth. Drawing on existing, often untapped human capital and innovative capacities within the region allows for economic growth in a sustainable manner. Underutilised demographics may include underemployed young people, women and men with caring responsibilities and culturally or linguistically diverse members of the communities.

When equipped with the necessary resources to plan for and maintain their workforce, councils can play a critical role in retaining, attracting and developing a skilled, inclusive and committed workforce.

FIGURE 13: NON-TECHNICAL SKILLS



Source: (Deloitte Access Economics, 2017) p.04

5.0
Digital & data

5.0

Digital & data

DIGITAL TECHNOLOGIES ARE CRUCIAL TO IMPROVING PRODUCTIVITY IN THE LOCAL GOVERNMENT SECTOR. THIS SECTION DISCUSSES HOW, AND THE EXTENT TO WHICH, THESE TECHNOLOGIES ARE BEING APPLIED IN LOCAL GOVERNMENT. THE BARRIERS TO ACCELERATED TAKE UP ARE IDENTIFIED.

The local government sector faces opportunities and limitations for innovation.

- Innovative technology is becoming more broadly available, and has the ability to boost productivity and economic growth
- Many councils lack basic technological infrastructure and have a shortage of necessary skills and resources
- Local governments can play a critical role in supporting and modelling technological innovation and developing best-practices in the evolving digital economy
- There are still many councils which do not have high quality broadband width. They do not have enough broadband to access e-health, e-education, let alone even send their rates notices out electronically.

5.1 What are the digital/IT & data needs of LGs in the 21st century

Information Communication technology (ICT) is a foundational enabler of modern government and is no longer only the domain of technical staff managing the systems; rather, it has become a core skillset required for all public servants. Roles, responsibilities and training to increase ICT capability within organisations has become necessary not only to maintain the function of public service, but also to attract and retain skilled, diverse staff through flexible working arrangements.

COVID-19 accelerated the need for digital services and remote working capabilities, as councils and communities rapidly adapted to lockdowns and restrictions. Communities reasonably expect to be able to access council services online to pay rates or fines, apply for permits, book waste collection and access other council services. This is reflected in 76 per cent of councils ranking customer satisfaction as a high priority for digital transformation, with council employee productivity playing a key role in delivering satisfactory outcomes for customers.

In addition to technology and ICT requirements, several new or emerging technologies have been identified in the 2021 Australian Infrastructure Plan to increase productivity.

Table 4 highlights some of the most disruptive digital technologies that have the potential to impact urban and regional places – and so by extension the governments that have some jurisdiction over these places will likely have some degree of engagement with these technologies. Smart vehicles, roads and traffic management will allow vehicles to communicate with each other, traffic signals and roadside infrastructure to share real-time safety-related warnings.

Smart agriculture allows for automation of machinery, livestock sensors, soil monitors and water controls. The use of sensors and machine learning in agribusiness allows for precision farming which optimises irrigation and maximises yields. The 2021 Australian Infrastructure plan highlights the benefit to all levels of government in adopting IoT technology and emphasises the critical role of government in modelling the applications of this technology. Government is one of the biggest consumers and collectors of data and are well-positioned to lead by example with demonstration projects, educational outreach, developing best-practices and facilitating open data programs.

TABLE 4: TECHNOLOGY INNOVATIONS AND APPLICATIONS

TECHNOLOGY	APPLICATION
ULTRA-RELIABLE LOW-LATENCY COMMUNICATION (URLLC)	URLLC uses the low latency and high reliability of 5G networks to support sectors such as remote surgery, robotics, remote emergency response management and self-driving vehicles
MASSIVE MACHINE-TO-MACHINE COMMUNICATIONS (MMMC)	Associated with IoC (below), mMMC refers to the low-cost sensors, meters, actuators, trackers and wearables which collectively generate enormous amounts of data via small, infrequent transfers.
MACHINE LEARNING	Machine learning is the application of algorithms which allow systems to self-learn, improving accuracy over time. It trains large amounts of data through predictive models which enable the prediction of future outcomes.
DIGITAL TWIN	Digital twins are digital manifestations of potential or existing physical assets, allowing for technological innovations and troubleshooting both before assets are built and while operating.
INTERNET OF THINGS (IOT)	IoT is the intersection of mMMC, machine learning and digital twins, where sensors, processing ability, software and other technologies connect and exchange data. The detailed and real-time data informs investment decisions and supports the automation of processes, reduces waste, improves service delivery and enhances employee productivity.

Source: (Infrastructure Australia, 2021)

5.2 Barriers to effective take-up

In a 2017 survey conducted by the Local Government Association of Queensland, councils in that State cited poor internet coverage (66 percent) and speed (62 percent), alongside high costs (59 percent), as key barriers to successful execution of digital technology initiatives. Smaller sized councils face bigger barriers to effective take up digital technologies, including lack of available funding and constrained access to skilled resources. Access to quality network infrastructure has an especially large impact for the connectivity and technology take up of rural and regional councils.

Twenty per cent of Councils responding to the 2022 workforce survey identified skill shortages in IT/ICT areas (SGS Economics and Planning, 2022), while 55 percent of respondents to the digital transformation index reported insufficient resources, including a lack of IT skills within the organisation.

Technology One (2022) found that 83 percent of participating councils rank digital transformation as a high priority, but only 47 percent had the budget required. Additionally, only 45 percent of respondents believed the broader council understood the impacts of transforming digital capabilities, which raised concerns about the effectiveness if implemented.

Given the basic constraints in network quality or reliability, skill shortages and lack of resources to dedicate to innovative technologies, local governments are not currently well equipped to facilitate technological innovation to support economic growth.

5.3 Impacts on local government productivity

Regional and rural areas face disproportionate constraints in accessing and using digital services and solutions. Technology-led economic development policies have widened the digital divide between urban and regional communities, where the latter lack the resources, human capital or even internet access to benefit from such policies. Market distortions and inequitable gains in economic growth commonly result from the differences in network availability and other technological infrastructure. Existing telecommunication services, for example, provide coverage to 99 percent of the population but only one-quarter of Australia's land area. The low population density and high building costs in some regional areas means digital infrastructure is not commercially viable and requires market intervention. Local governments in such regions are impacted by the lack of digital infrastructure available to the council, reduced productivity through limited scope for online service provision, and inadequate data or other digital tools to inform investment decisions.

The Victorian Government has identified further barriers to effective technology use. Inconsistent or incompatible networks prevent cross-agency connectivity, resulting in unnecessary barriers to common services such as document management, email, HR and administrative functions. Different networks or systems across departments or agencies result in disconnections or disruptions for staff and service provision, while also exposing organisations to increased security risks.

While some councils are successfully utilising Smart City technology and promoting economic growth in their region, only 58 per cent of councils in Queensland reported their community has access to high quality internet in their local areas, up from 47 per cent in 2013.

5.4 Productivity gains as a result of digital innovation

Digital activity contributed over $109 Billion or 5.9 percent of domestic total economy value added in 2019-20. While Digital Economy is a smaller part of the economy than more traditional industries such as mining or construction, as shown in Figure 14, it is a significant component of the Australian economy. Not only is the digital economy growing at a faster rate than the broader economy, it creates an uplift in the productivity of other sectors.

Relevant datasets will enhance investment decisions for councils and businesses, as demonstrated by the experience of the Gold Coast City Council. As part of the Smart City innovations, Gold Coast City Council collects, analyses and uses data to monitor trends in employment, visitation frequency and tourism expenditure. Emerging trends, such as the prevalence of home-based work or use of co-working facilities, can be identified and analysed to allow councils and businesses to anticipate and proactively adjust to changing trends. Analysing industrial clustering, land suitability, land use changes and growth prospects allows key challenges and opportunities to be identified, and for investment decisions and the City Plan to be amended to better support economic growth.

Smart Cities use innovative technologies to enhance the quality and performance of urban services, reduce costs and resource consumption and to engage more effectively and actively with its citizens. Existing infrastructure is equipped with smart devices, sensors and software to allow more efficient and effective monitoring and control of key government services such as energy and water systems, transport networks, human services and public safety. Gold Coast City Council collects data about itself through sensors and other devices or systems, communicates that data through wired or wireless networks, then analyses the data to understand current and emerging trends. Fast and reliable internet connections have become an essential infrastructure for Australian cities.

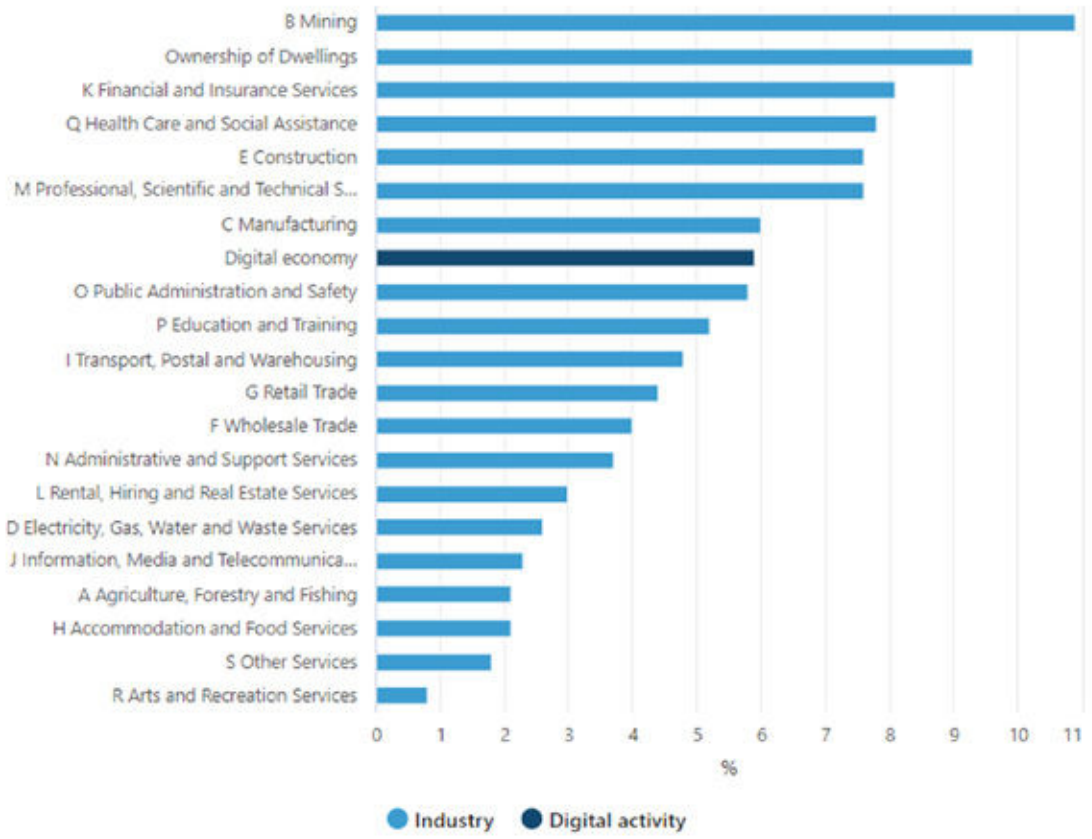
Smart Cities case studies have demonstrated positive impacts for people living in smart cities, including:

- New markets, export opportunities and capabilities
- New, higher-paying jobs
- Greater productivity in design and construction process
- More effective delivery of public infrastructure and services
- Reduced greenhouse gas emissions
- Operational savings on assets
- More effective disaster management
- Greater resilience to disaster and change

Many communities, businesses and local communities within Australia are already benefiting from emerging technologies, including 5G rollouts and smart cities innovations but many areas face constraints.

Increased digitalisation has enabled councils to pool resources. Over 90 percent of Queensland councils said that they would use technology like enterprise software to pool resources with neighbouring councils, up 10 per cent from 2015. Councils have rejected a proprietary approach to information and data, instead freely sharing information to help deliver improved community outcomes.

FIGURE 14: INDUSTRY SHARE IN AGGREGATE VALUE ADDED 2019-20



Source: (ABS, 2021)

6.0
Market failure

6.0

Market failure

LOCAL GOVERNMENT IS, IN PART, PREMISED ON THE CORRECTION OF MARKET FAILURES RELATING TO NATURAL MONOPOLY IN THE PROVISION OF INFRASTRUCTURE AND EXTERNALITIES ASSOCIATED WITH LAND DEVELOPMENT. BY MITIGATING THESE GAPS IN THE ALLOCATIVE PROCESSES OF MARKETS, LOCAL GOVERNMENTS PLAY A PERVASIVE ROLE IN UNDERPINNING PRODUCTIVITY IN THE WIDER ECONOMY. THIS ROLE IS DISCUSSED IN THIS SECTION.

Market failure is an inefficient allocation of goods or services in the free market, lowering overall productivity in a service. Local governments are often left to be the providers of last resort, filling the gaps from State and Federal government. As a result the Local Government sector provides over 150 services to its community, many of which are not well known or explicitly funded for.

This includes:

- Connecting individuals to services that are available in monopoly territory
- Fostering services that are comparable in the monopoly territory at accessible rates
- Offering public goods and services not provided for by other levels of Government
- Assuring a resilient environment that can withstand evolving gaps in the market.

6.1 Key concepts

What is market failure?

Market failure is a situation defined by an inefficient distribution of goods and services in the free market. In market failure, the individual incentives for rational behaviour do not lead to rational outcomes for the group.

This can arise from imperfect market conditions. Perfect markets can be relied on to channel land, labour, financial and intellectual capital into uses which provide the best returns for the community as a whole. However, markets are often not sufficiently competitive. This can arise when goods and services have a public character, that is the good or service is non-excludable and/or nondepletable and/or externalities exist and/or there is a natural monopoly.

Natural monopoly

Natural monopoly applies when the market of users is only large enough to support one (or a small number) of efficient suppliers, thereby ruling out competitive tension and innovation. The remedy for natural monopoly is either regulation of market suppliers of these goods, potentially entailing government price setting and independent supervision of service standards, or public sector provision.

Local infrastructure, including roads and water cycle management, are classic examples of goods which are prone to natural monopoly. Some urban infrastructure assets can be feasibly delivered by the private sector under an elaborate regulatory and supervisory regime. Freeways, regional water treatment plants, hospitals and other major infrastructure items have been created under these models over the past 4 decades. However, the smaller scale and distributed nature of road, drainage and other ***local*** infrastructure means that these models are not practical or cost effective.

If local government were not to provide these services, local communities and businesses would be either forced to go without these services or acquire them at great cost. This would be a drag on productivity in the local and wider economy.

Public goods and services

Pure public goods have two key features; they are non-rival and non-excludable.

- Non-excludable goods means individuals cannot be prevented from consuming the good and as such there is no incentive to pay.

- For non-rival goods consumption by one party does not reduce consumption opportunities for others (as in provision of a park, for example).

Private sector provision of public goods is beset by the “free-rider” problem; that is, consumers who would otherwise be willing to pay have no incentive to do so because they can access the offering at zero out of pocket expense. Under such conditions, private markets will routinely underprovide the services in question, if they are provided at all. It is often the role of government to intervene via incentives or subsidies to enable organisations to be willing to supply the good. More commonly, governments directly provide these goods which include parkland, as noted, and local road networks.

Local authorities are best positioned to deliver public goods when local knowledge and understanding is required, where a range of services need to be ‘joined-up’ to effectively deliver the service and when cost and benefits accrue locally and the appropriate incentives apply. In addition, the principle of subsidiarity also suggests that services are to be provided at the lowest possible level.

In many countries, including the Netherlands for instance, local councils provide social security services and effectively join these up with local training and employment services.

Some examples include the provision of open space, shared amenities and increasingly disaster preparedness and disaster response. The latter is addressed separately in Section 8 on Climate Change.

Externalities

Externalities are unpriced effects arising from market transactions. They affect welfare – either negatively or positively – but are not factored into the decisions of buyers and sellers. Accordingly, markets cannot be relied on to generate a welfare optimising allocation of resources in the presence of significant externalities.

Land use and urban development are rife with externalities. These range from industrial uses impacting neighbouring uses through noise, traffic or air pollution to many positive externalities including agglomeration economies in clustering business and commercial uses.

Regulation is the conventional means by which market allocation is optimised in the face of externalities. This is the primary rationale for land use regulation via 'town planning systems'. Done well, these systems correct for negative externalities, reinforce existing positive externalities and create opportunities for new positive externalities, including more efficient provision of infrastructure.

More specifically, effective urban planning would be expected to deliver, or contribute to, the following benefits;

Avoidance of inter-property negative externalities: these typically include overshadowing, overlooking, noise intrusion and air pollution and other emissions which might unreasonably compromise the utility of neighbouring properties were a land use or development proposal for another property to proceed.

Creation and protection of positive externalities at the inter-property / precinct / neighbourhood scale: this pertains to neighbourhood character, heritage values, cultural values and other distinctive and appreciated features of a place that might be vulnerable to 'inappropriate' development.

Creation and protection of positive externalities at the suburb, town, metropolitan and regional scales: these externalities relate to the welfare gained by communities through a 'designed' versus a laissez faire urban future. Examples include saved congestion and vehicular emissions through the creation of public transport friendly and active transport friendly urban forms, generation of productivity gains by building clusters of related firms and production of vibrant town centres by managing retail and related flows into hierarchies of activity nodes.

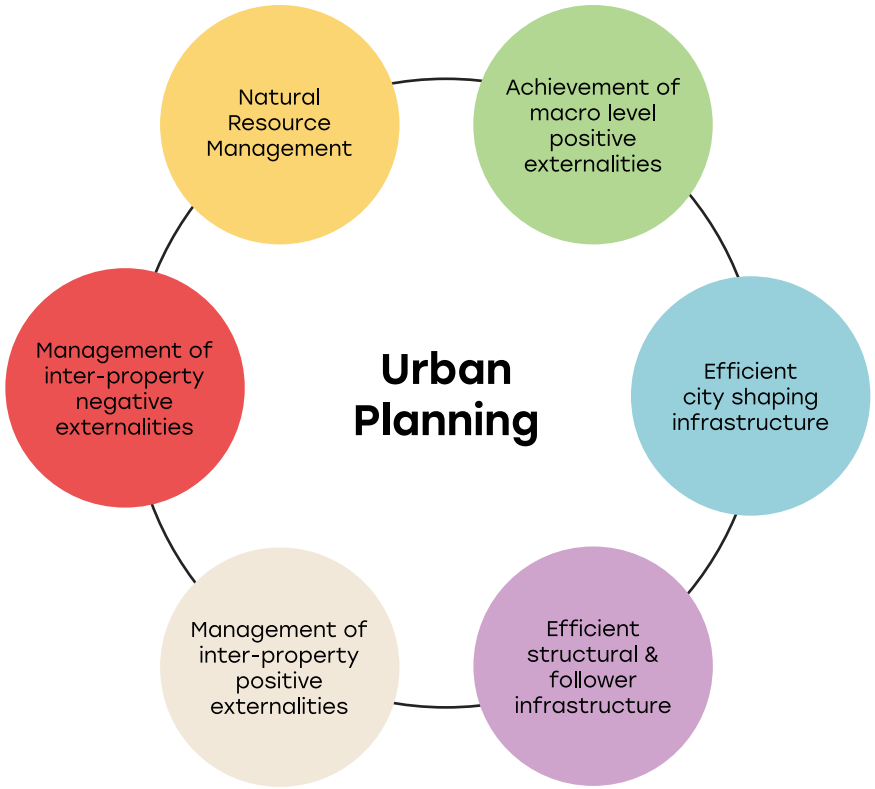
Beneficial deployment of the 'city shaping' power of major infrastructure investments (such inter-urban freeways and metropolitan rail), thereby increasing the flow of Wider Economic Benefits (WEBs) from such projects, including agglomeration linked productivity gains.

Cost savings in the provision of lower order - 'structural' and 'follower' - urban infrastructure[3]. These benefits include avoidance of wasted infrastructure capacity, or failure to provide infrastructure, when development takes an ad-hoc rather than orderly sequence in a given service corridor.

Conservation of natural resources / protection from inappropriate development.

[3] Spiller, M., Thakur, P. and Wellman, K. (2012) Principles and Systems for Coordination of Infrastructure Investment across Portfolios, Chapter 9 in Wellman, K. and Spiller, M. (2012) Urban Infrastructure Finance and Management, Wiley Blackwell

FIGURE 15: WELFARE GAINS FROM PLANNING[4]



Source: SGS Economics & Planning Pty Ltd

Because of its role in land use regulation, local government again constitutes a pillar of productivity in the wider economy. Without effective planning and land use regulation undertaken via local government, multiple productivity sapping or boosting externalities would go unattended in the Australian economy.

There is scope for debate and improvement regarding how the planning system is configured and operated. Nevertheless, it is clear this function is critical to efficient markets and productivity, and local government is best positioned to manage at least those parts of the regulatory system which require granular understanding of local externalities.

Subsidiarity

Natural monopoly, public goods and externalities make government service provision and a degree of regulation of markets essential if productivity is to be optimised. The question arises as to which sphere of government is best suited to deliver the interventions required.

A foundation principle in this regard is subsidiarity. This asserts that a central authority should perform only those tasks which cannot be satisfactorily performed at a 'subsidiary' or more local level. By this principle, local governments should have full discretion over the tax / spend trade-offs in genuinely local matters ranging across infrastructure provision, service delivery and execution of regulatory functions.

State and Commonwealth Governments failure to adhere to this principle results in over centralisation of power, limiting access to decision making and interference with the core democratic principle of self-determination. Moreover, it damages productivity because investment and regulatory functions are less likely to be optimally designed.

Examples of this are seen in limited discretion of local revenue for local governments, State intervention in local planning matters and direct investment from Commonwealth for local infrastructure that confuses the accountability for service delivery (Deem, 2021).

[4] Note that town planning does not apply in the same ways in the Northern Territory as it does in other states.

Competitive neutrality

In correcting for market failure, policy can theoretically distinguish between the 'funding' and 'provider' roles of government. For example, Councils might fund the development and maintenance of parkland but outsource these functions to private contractors.

The idea behind separating the funder and provider roles is that private sector efficiencies and ingenuity can be harnessed in the provision of public services. While the services in question may not be deliverable in competitive markets, there may be opportunities to create competition for the right to serve these markets.

Local government reform in Victoria prosecuted by the Kennett Government in Victoria in the 1990s was premised on these concepts. A Compulsory Competitive Tendering (CCT) program was rolled out requiring Councils to identify all services, from development assessment systems to parks maintenance, that could be put out to tender. In house teams already providing these services were allowed to bid for this work, but had to ensure 'competitive neutrality'. This involved elaborate measures to replicate the profit drivers, tax environments and cost structures which apply in the private sector.

While the CCT program delivered some important benefits, including a sharper business focus in the planning and delivery of public services, the original vision for it has all but disappeared. In part, this was due to the heavy transaction costs involved in maintaining competitive neutrality.

6.2 Local Councils as the provider of last resort

Councils tend to step in as a provider of last resort when other levels of government or the market do not deliver a service efficiently to the community. This occurs when the service is essential or very important to the sustainability of the community or the functioning of the local economy. In regional areas one may therefore observe council offering childcare services, thereby enabling more people, especially women, to participate in the workforce. Increasingly councils are concerned with the delivery of primary health and wellbeing services.

There are instances where councils are providers of the last resort due to a lack of coordinated policy at the State/Territory or national level. This is for instance the case in relation to climate change adaptation (see Section 8) and housing affordability with councils increasingly intervening to provide better outcomes for key workers and other households.

Typically, councils do not receive (sufficient) funding to deliver such services and sometimes struggle to maintain continuity in these areas.
Note also that market failure occurs disproportionally in rural, regional and remote areas, where those councils have least financial capacity to fill the market failure gap, due to the different/patchy economies of scale that apply in those areas for many markets.

The following examples illustrate the productivity gains from local governments correcting for market failures and/or stepping up as provider of last resort.

Parks and open space

Provision of parkland and other 'open access' or shared amenities are classic examples of public goods. Markets would only provide these services if their open access nature was curtailed, for example, by fencing off open space and charging an entry fee. While this might be feasible for the odd tourist attraction or gated community, it is not a practical or, indeed, acceptable, solution to the provision of parkland networks.

Parkland networks are a key service output of local government. They are known to generate multiple benefits, including boosting productivity. Table 5 contextualizes the benefits of open space, reviewing studies which monetise the consumer surplus generated per visit. Applying these values to the population of individuals who participate in recreational walking (Figure 16) indicates the enormous value generated by local governments in their provision and management of open spaces and public realm. This has been calculated in Table 5: Estimated annual value of recreational walking giving an annual value of NSW recreational walking of $19 billion.

As the principal provider of open space and other local public goods, local government again plays an indispensable role in building productivity in the wider Australian economy.

The health and wellbeing benefits of recreation in open space are now well understood. It is also known how better health and wellbeing contribute to the productivity of the workforce.

TABLE 5: ESTIMATED ANNUAL VALUE OF CONSUMER SURPLUS PER VISIT - PUBLIC SPACE EXAMPLES[5]

SOURCE	DESCRIPTION	VALUE PER VISIT
SYDNEY ROYAL BOTANIC GARDEN STUDIES		
Mwebaze & Bennett (2012)	Estimation of consumer surplus per visit to the Royal Botanic Garden using a Travel Cost Model.	$20 if part of a multiple site trip $50 if a single trip
Mwebaze & Bennett (2012)	Estimation of consumer surplus per visit to the Royal Botanic Garden using a Contingent Valuation Method.	Willingness to pay of around $5 per visit
OTHER AUSTRALIAN STUDIES		
Mwebaze & Bennett (2012)	Estimation of consumer surplus per visit to the Australian National Botanical Garden using a Travel Cost Model.	$18 if part of a multiple site trip $30 if a single trip
Mwebaze & Bennett (2012)	Estimation of consumer surplus per visit to the Royal Botanic Garden Melbourne using a Travel Cost Model.	$21 if part of a multiple site trip $47 if a single trip
Varcoe et al. (2015)	Estimation of the indicative recreation value per visit to metropolitan park in Melbourne using Travel Cost Models.	$9
UK STUDIES[6]		
Demir (2012)	Estimation of visitor willingness to pay to visit to the Royal Botanic, Kew, London using the Contingent Valuation Method.	$11
Demir (2012)	Estimation of consumer surplus per visit to the Royal Botanic Garden, Kew, London using the Individual Travel Cost Model.	$94

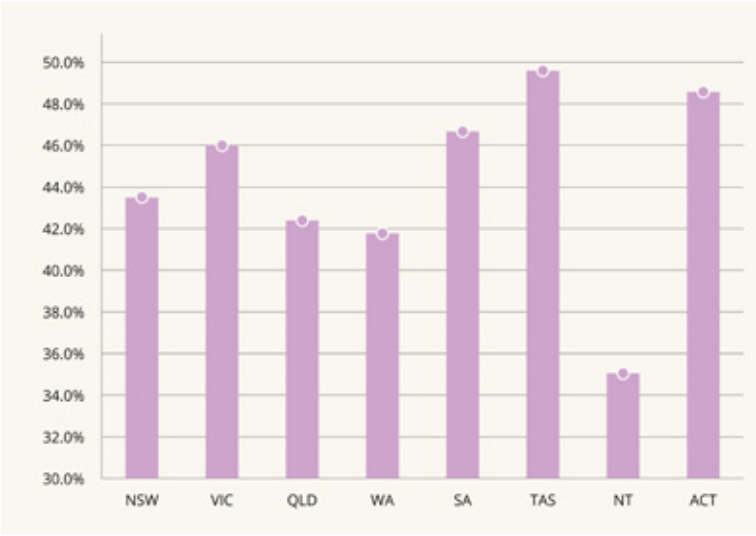
[5]The Centre for International Economics for the Royal Botanic Gardens and Domain Trust, June 2020
[6]Values have been inflated using 2017 quarter 4 UK inflation data specific to 'Recreation and Culture', (the most recent data available) and then converted to Australian dollars using a conversion rate of 0.55.
Note. Values have been converted to 2017$ (Quarter 4) using the CPI for all groups for Australian capital cities.

TABLE 6: ESTIMATED ANNUAL VALUE OF RECREATIONAL WALKING - NSW

DESCRIPTION	METRIC
NSW participation rate (% of population >15yo)	43.40%
NSW participants (number of people >15yo)	2,801,787
Sessions per year per participant	212
Average duration of session (hours)	1
Total sessions per year	593,978,844
Recreational value per session	$18
Health related benefit per session	$14
Recreational plus health benefits per session	$32
Total value generated per year	$19 billion

Sources: Ausplay data, ATAP and SGS calculations

FIGURE 16: POPULATION ENGAGED IN RECREATIONAL WALKING



Source: https://www.clearinghouseforsport.gov.au/research/ausplay/results

Health services in rural and regional NSW (Council, 2022)

Local governments in New South Wales do not have a formal role in health care provision but are often involved in providing environmental health services and some community-based health and home-care support services. Additionally, some local councils proactively seek to attract doctors to their regions and support them by offering accommodation, financial incentives, equipment, and facilities.

Recognising a lack of publicly available transport options as a barrier for community members to access services, some local councils and private providers are offering community transport services.

In Narrandera Shire Council this includes a transport service;

- Providing over 10,400 trips,
- 85 per cent attributable to traveling outside of town for medical services,
- Utilised by over 20 percent of the whole community,
- Saving individuals excessive transport expenses, and,
- Increasing access to public health.

Funding for these services are dependent on the provision of grants which are administered by different government agencies in the state and federal level. Local councils do not have the revenue generating ability to fund this service and as a result there is inequitable access with some residents being able to qualify while others are excluded on the terms of the grant.

If this service were not offered by local government;

- Private providers could set the price and exclude more community members,
- Absenteeism in the labour force would increase due to sick leave, and,
- Proactive health care would be diminished causing additional government health costs later on

Early Childhood Education and Care (ECEC)

Extensive research indicates the long-term benefits of participation in preschool and early education. Local council are active members in the planning, funding, and delivery of ECEC services. This involvement varies depending on the needs and priorities determined by the community. In rural and regional areas, there are additional challenges often resulting in market failure which necessitates that local government provide services that would normally be provided by other levels of government or private sector.

Rural and regional areas particularly struggle to maintain adequate staffing, which then will have the potential to compromise quality of service.

In Croydon Shire, for example, the implementation of the NQF meant council run centres could not replace or recruit staff with the required qualification, forcing the closure of programs for childcare and after-school care. The community is now without adequate childcare, straining individuals ability to participate in the labour force and reducing productive outcomes of education systems.

For the local council run ECEC providers there is the additional issue of meeting costs. Local councils traditionally have assisted not-for-profit childcare providers, predominantly in the form of free or subsidised rent and access to facilities. However, the ability of local governments to assist in any manner is dependent on their own fiscal sustainability which is primarily derived from local government rates and State and Commonwealth grants. The capacity for local government to maintain and upgrade ageing infrastructure in keeping with quality and regulatory requirements, without considerable government financial support, is a major issue for councils.

Local councils in regional/remote areas are having to manage service provision within fiscal constraints which in some cases has led to reviewing involvement in provision/support of ECEC as these are generally ‘non-statutory’ commitments. This can make ECEC inaccessible. NSW Councils have been forced to tender existing buildings. This is adding $1-$2 per hour to student fees to attend ECEC.

Finally, note that Councils’ ECEC services consistently outperform other for-profit services in quality and standards. Where council provides ECEC services, they do it at a much more competitive price and take children with difficulties and from low socioeconomic backgrounds, who cannot obtain places in mainstream childcare. So there is a social and economic benefit inherently in those services. Again it is usually in rural, regional and remote areas that Councils come in to the market to deal with market failure.

Huon Valley Council childcare economic study

Continued growth in the Huon Valley is resulting in increasing demand for childcare services and contributing to families being unable to find childcare that meets their needs. Council has plans to fill this gap by increasing capacity at the Huonville centre through redevelopment. This will allow for the expansion of long day care, after school care as well as allowing for individual programs to operate after hours, during closure periods. The project will also create several local employment opportunities, including for qualified educators, and trainee positions.

The cost benefit analysis of the proposed expansion identified a range of positive impacts including;

- Childcare cost savings
- Parents ability to return to work
- Increased quality of life for carers from respite care, and
- Improved training and employment outcomes.

The actions, if implemented by the local council, are expected to have a present value of $2.07 million and a benefit cost ratio of 1.21. This means that for every $1 invested on the centre, economic and social benefits equivalent to $1.21 will accrue to the local population. The greatest benefit of this case was quantified to be the economic productivity gains from parents being able to go back to work, at a present value of $7,795,000 or 82 percent of all the benefits.

Often councils, like this one, depend on external funding through irregular grants rounds to enable investments. The insecurity and inconsistency in funding rounds is an important hurdle to councils to achieve optimal productivity outcomes for their communities.

7.0
Infrastructure & housing

7.0

Infrastructure & housing

THIS SECTION TAKES A CLOSER LOOK AT TWO ASPECTS OF LOCAL GOVERNMENTS' IMPACT ON THE PRODUCTIVITY OF THE WIDER AUSTRALIAN ECONOMY – ITS CUSTODY OF SIGNIFICANT PORTFOLIO OF URBAN INFRASTRUCTURE AND ITS ROLE IN HOUSING SUPPLY.

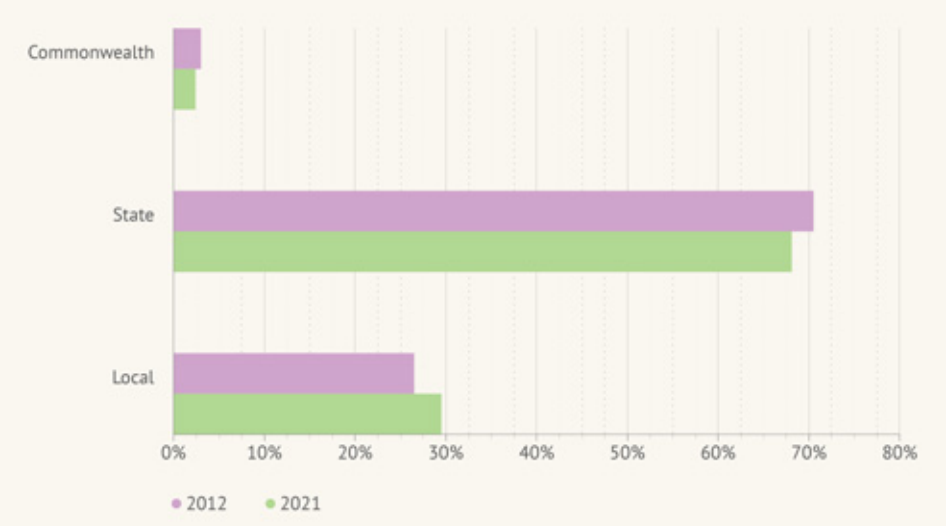
The level of infrastructure local government is responsible for has been increasing at a higher pace than the level of resources made available to them. This local government-controlled infrastructure has large productive impacts on the wider economy including:

- Libraries and community centres promoting social cohesion and knowledge gaining
- Resource recovery and circular economy services stimulating the local economy, improving material efficiency and increasing sustainability efforts
- The local road network, which is crucial to the effective function of society and economy in regional and rural areas in particular, accounts for 77 per cent of total road length in Australia.

7.1 Overview of local government infrastructure

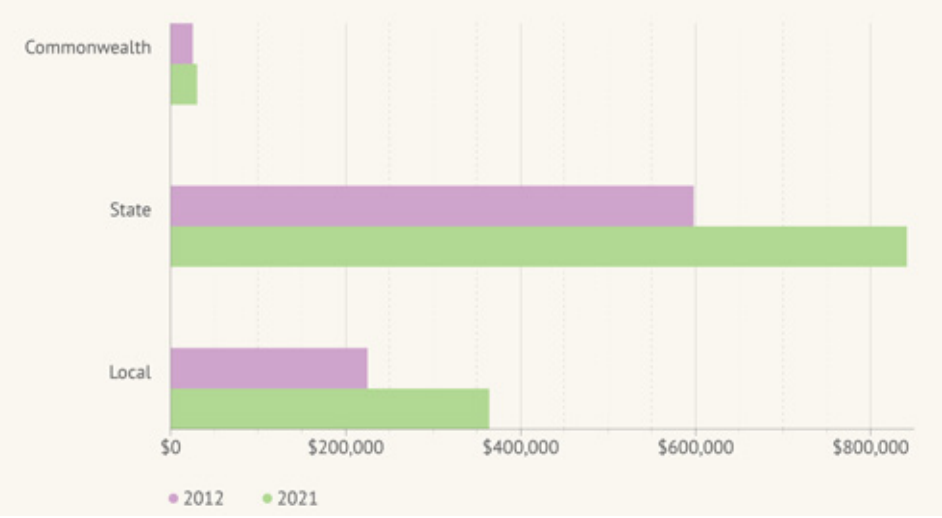
ALGA estimates that local governments are responsible for approximately a third of Australian public infrastructure assets. As Figure 17 shows, between 2012-2021, local government's share of building and structural assets increased from 26.5 per cent to almost 30 per cent while the shares for both State and Commonwealth governments declined. Figure 18 shows that in that time frame, the value of building and structural assets held by local governments increased from $225,100 million to $364,200 million, a 62 per cent increase. Comparatively, state government had a 41 per cent increase and the Commonwealth government had a 20 per cent increase.

FIGURE 17: SHARE OF BUILDING AND STRUCTURE ASSETS BY GOVERNMENT SECTOR



Source: ABS, 2022

FIGURE 18: VALUE OF BUILDING AND STRUCTURE ASSETS BY GOVERNMENT SECTOR IN 2012 AND 2021, IN $M



Source: ABS, 2022

Table 7 shows the total value of infrastructure assets that held by local government- an estimated $532,700 million – by category of assets and depreciation assets.

These charts and tables show that the value of infrastructure assets held across all tiers of government is increasing. In the local government sector in particular, this has begun to pose serious challenges when it comes to asset maintenance and the ability of councils to fund asset operations through the lifecycle of the assets. There have already been examples where councils that cannot foot the bill eventually collapse under the weight of those requirements. If this trend continues, there will be more pressure on councils' financial sustainability – posing serious risks to the productivity of those bodies and their productivity in serving the needs of the community.

Earlier in this paper, we discussed the need for greater funding at the local government level. But what also needs to be looked at here is the extent to which grant funding from federal and state bodies results in more asset acquisitions – for which there is no plan for funding their operations and maintenance.

In essence, Councils are 'gifted' assets by other levels of government and are then expected to maintain them with no financial assistance provided.

TABLE 7: LOCAL GOVERNMENT INFRASTRUCTURE VALUATIONS BY ASSET CLASS, JUNE 2020

ASSET CLASS	REPLACEMENT COST ($M)	DEPRECIABLE AMOUNT ($M)	CURRENT REPLACEMENT COST ($M)	ANNUAL DEPRECIATION ($M)
ROADS	$204,164	$162,848	$132,998	$2,863
BRIDGES	$25,472	$23,409	$15,343	$256
BUILDINGS	$90,845	$87,492	$55,849	$1,601
PARKS	$16,279	$15,076	$10,113	$524
STORMWATER	$94,298	$89,873	$65,242	$918
WATER/WASTEWATER	$98,512	$97,908	$60,461	$1,461
AIRPORT/AERODROMES	$3,084	$2,928	$1,831	$64
TOTAL	$532,655	$479,535	$341,837	$7,687

Source: ALGA, State of the Assets (2021)

TABLE 8: LOCAL GOVERNMENT INFRASTRUCTURE VALUATIONS BY ASSET CLASS, JUNE 2020

INFRASTRUCTURE TYPE	INTRA-LOCAL GOVERNMENT PRODUCTIVITY IMPROVEMENTS	EXTRA-LOCAL GOVERNMENT PRODUCTIVITY IMPROVEMENTS	EXAMPLES OF QUANTIFIED PRODUCTIVITY UPLIFTS RELATED TO INFRASTRUCTURE[7]
ROADS	Local roads are a vital component in connecting the local community to the neighbouring region.	Local roads are important for all industries, particularly for freight and transport services.	For every $1 million invested in road construction in Australia, the economic impacts are $2.9 million of output to the economy and 1.3 million of value is added to Australia's GDP (BIS Oxford Economics and Roads Australia, 2021)
RECREATION FACILITIES, PARKS AND OPEN SPACES	Well-designed public spaces improve the mental and physical health of a local community and improves cohesiveness.	These public spaces have flow on impacts to local businesses and increases private investment. They are also often used for events like sporting events and may increase tourism.	The Florida Recreation and Parks Impact Calculator was developed to calculate the individual and societal benefits of using parks, using a combination of health and environmental benefits. This was calculated to be $2,406 USD annually for each park user over 65 and $1,230 USD annually for each park user under age 65 and is primarily driven by health savings (Cohen, Burrowes, & Gwam, 2022).
LIBRARIES AND COMMUNITY CENTRES	Promotes community cohesion	Fosters knowledge gaining and helps create an inclusive society	Every dollar invested in public libraries generates $4.30 worth of benefits to the local community (SGS Economics and Planning, 2018) Government run programs for adult and community education has an annual value add of $1.1-1.5 billion NZD in New Zealand, with a return of $16- $22 NZD per dollar invested (PricewaterhouseCoopers, 2008).
HOUSING	While local councils largely do not manage housing, they can influence local housing supply through the planning system.	Policy for workers accommodation directly facilitates employment.	Housing prices can cause a suboptimal allocation of labour, as rising housing costs can cause spatial disparities, with low-skilled/low-wage workers pushed out of areas because of housing costs, causing a shortage of necessary low-skilled/low-wage workers (Maclennan, Long, & Leishman, 2021).
CIRCULAR ECONOMY AND RESOURCE RECOVERY	Garbage, recycling, organic matter collection services for households and small businesses	Flow on economic effects to private waste management companies The move towards a circular economy allows waste to be reused in other industries (i.e recycling, fertiliser)	Increasing the waste recovery rate by 5 per cent increases Australia's GDP by an estimated $1 billion or 0.07 per cent (The Centre for International Economics, 2017).

[7] These estimations are further explained in the following sections. They also are not strictly quantified at the local government level, as they are broad literature reviews that give an estimate of the infrastructure category, that may include infrastructure spending or management by the private sector or other levels of government.

7.2 Local Government infrastructure and productivity

There are productivity implications for investment in the local government owned assets listed in Table 8, including core infrastructure and transport infrastructure. The stock of public capital can be used in the productive process of an economy. These productivity impacts include the effect of infrastructure investment on long-run economic output (or use as a factor of production) but could also include the short-run effects that are directly stimulated by the investment (e.g. spending on construction)[8]. It is also important to note that the nature of the investment will influence the impact on productivity. Some infrastructure assets, such as roads which are used by firms, will have immediate productivity benefits, while others, such as community, social and educational infrastructure, will have delayed impacts. Infrastructure can improve productivity by reducing input costs. This is especially true for transport infrastructure: reducing congestion increases productivity by reducing the cost and travel time of people and goods.

The OECD (2021) states the public sector influences productivity through efficiency and effectiveness, the latter of which fits with infrastructure productivity.

Shanks and Zheng (2006) explain that there are three ways in which public infrastructure can affect productivity:

- Public infrastructure, which is not subject to user charges, is a free input into production, and therefore directly affects private-sector output and productivity
- Public or private infrastructure can have other spillover effects or externalities – it can, for example, be an enabler for innovation, allowing firms to do what they do now in a better way or to do new things
- Public or private infrastructure can have an indirect effect through its effect on other inputs – it can be a complement to or substitute for these other inputs and affect their productivity

Table 7 gives examples of some ways productivity has been estimated based on infrastructure type, which is further expanded on in the later sections. These are broad estimations that are not strictly quantified at the local government level, and vary in their quantification methods, and may include infrastructure spending or management by the private sector or other levels of government. They provide some examples of the link between local government infrastructure and investment.

Libraries and community centres

Within Victoria, public libraries (local government owned) receive more than 30 million visits annually, with visitation increasing but funding stagnant or decreasing. Funding is primarily provided by local government; State/Territory Government only contributed to 15 per cent of total library funding in 2016-17 (SGS Economics and Planning, 2018). Within the wider community in Victoria, economic activity generated by public libraries equates to $328 million in gross regional product per year based on direct and indirect employment.

SGS Economics and Planning modelling has shown that every dollar invested in Victorian public libraries generates $4.30 worth of benefits to the local community. This estimation was based on direct user benefits comprising of: the access of knowledge, indirect user benefits generated from library programs and services such as literacy programs and job search activities and non-user benefits: through the contingent valuation of libraries from non-users who do not use public libraries services but can fell their quantifiable loss based on other community remembers appreciation of community libraries.

Ultimately, additional funding per capita allows libraries to generate greater net benefits, without diminishing returns. Every dollar invested in public libraries generates benefits to the economy, and these do not appear to have a cap or begin to decrease after a threshold is reaches, showing the benefits of library funding.

Meanwhile, community centres also contribute to productivity gains through education, volunteering and social cohesion. A report from PWC suggests that government run programs for adult and community education has an annual value add of $1.1-1.5 billion NZD in New Zealand, with a return of $16- $22 NZD per dollar invested (2008). This figure is high as these programs are largely focussed on improving people's productive lives and future paid employment.

[8] The concept of 'roads to nowhere' refers to infrastructure projects which will stimulate an economy during the construction phase, but add no value thereafter

Roads

Local government-controlled roads account for 77 per cent of total road length in Australia, with the National Transport Commission estimating that 36 per cent of total kilometres travelled in Australia are on local roads. The Australian Government's National Heavy Vehicle Regulator highlights how critical the "first and last mile" on local roads is for the freight industry, with local roads often not at the same standard as the wider network, and unable to handle freight (2015). Additionally, the regulators say that "local government through the use of their road networks plays a key role in boosting national productivity", highlighting in particular the growth opportunities for regional economies (2015). Given that freight is expected to double by 2050, the maintenance and improvement of the local road network is an integral part of economic growth. BIS Oxford Economics estimates that for every $1 million invested in road construction in Australia, the economic impacts are $2.9 million of output to the economy and 1.3 million of value is added to Australia's GDP (2021). Inadequate transport infrastructure can also disrupt productivity, with studies showing that traffic congestion can slow job growth, higher levels of congestion are associated with slower productivity growth per worker and traffic congestion growth negatively affects income growth and employment growth in 86 US metropolitan areas (Maclennan, Long, & Leishman, 2021).

Funding for the road system is complicated and underappreciated, with a heavy reliance on Commonwealth funding as state and local government related expenditure on roads is approximately double the revenues they are able to raise. (Productivity Commission, 2017). The Productivity Commission's Productivity Review titled "Funding and investment for better Roads" found that the primary grants used by local governments to fund their roads include the Financial Assistant Grant program which has an untied, general-purpose component and another untied local roads component (2017). There is currently no standardised review of roads or national condition assessment, unlike other types of infrastructure meaning that maintenance needs across the board are difficult to assess and compare, thereby contributing to a pattern where asset maintenance is currently more reactive than proactive. The Productivity Commission finds that creating local road standards and clearer grant processes will result in a more efficient and proactive use of taxpayer money (2017).

Recreation facilities, parks and open spaces

Davern et al notes that well-designed public spaces improve the mental and physical health of a local community, improves cohesiveness and social cohesion (2016). Thus, open space reduces the strain on the public health system and reduces government expenditure.

The Melbourne Sustainable Society Institute summarises that local green infrastructure can significantly impact the productivity of the economy through environmental benefits like regulating the urban heat island effect (tree covers reducing it by 1 to 8 ºC), reducing energy use in adjacent buildings; reducing stormwater run-off; improve air quality via the absorption of air; improving property value and increasing private investment and reducing maintenance costs of footpaths and other structures (2019).

The Trust for Public Land (2013) looked at the environmental benefits of natural land in Massachusetts and found that every $1 invested in conservation of green space/parks results in $4 of benefits in natural goods and services. Meanwhile, in Florida, the Florida Recreation and Parks Impact Calculator was developed to calculate the individual and societal benefits of using parks, using a combination of health and environmental benefits (Cohen, Burrowes, & Gwam, 2022). This was calculated to be worth $3,481 USD annually for each park user over 65 and $1,779 USD annually for each park user under age 65 and is primarily driven by health savings (Cohen, Burrowes, & Gwam, 2022).

Circular economy and resource recovery

A circular economy and efficient resource recovery can create jobs and contribute to economic growth. Local councils are often responsible for waste management along with recycling programs. Specific recycling programmes vary between councils, with one waste bin and one commingled recycling bin being the standard. More recently, some councils have been experimenting with resource recovery using organic matter bins for food and garden waste that can be turned into compost that the council then uses in public parks and green spaces. Other council initiatives include glass-only recycling bins that lower contamination and improve quality and hard rubbish collection. Victoria is aiming to standardise household recycling to create a circular economy, ensuring that every household has access to glass, food organics and garden

Local government accounts for 20 per cent of waste activity in Australia, meaning local government is a significant figure in the waste sector's move towards a circular economy and increased resource recovery that will increase Australia's productivity. In South Australia, implementing a circular economy was associated with materials efficiency improvements, with the potential to create an additional 21,000 full time equivalent jobs by 2039.

Australian Government modelling hints to further potential gains in the waste and resource recovery sector, estimating that 9.2 full time jobs are created for every 10,000 tonnes of material recycled while there were only 2.8 jobs created for every 10,000 tonnes of landfill waste (Victorian Department of Environment, Land, Water and Planning, 2019).

A study by Ernst and Young has found that Australia wastes more than $324 million of resources that could be used productively by sectors such as manufacturing, construction and agriculture (2019). Increasing the recovery rate by 5 per cent increases Australia's GDP by an estimated $1 billion or 0.07 per cent, primarily impacting the waste sector (The Centre for International Economics, 2017). Increasing material efficiency by 5 per cent is estimated to increase Australia's GDP even more significantly, by $24 billion or 1.5 per cent. This is because it is expected to impact the whole economy, providing a significant productivity uplift, showing the potential for local government to improve the productivity of Australia's economy.

Housing

Housing affordability can have a large impact on productivity in a region, with a study from New Zealand showing that rising house price diverted labour away from high-productivity regions (in particular Auckland and Wellington), to move to other New Zealand cities and Australia with more affordable housing (Maclennan, Long, & Leishman, 2021). Additionally, it can cause a suboptimal allocation of labour, as rising housing costs can cause spatial disparities, with low-skilled/low-wage workers pushed out of areas because of housing costs, causing a shortage of necessary low-skilled/low-wage workers. A study by Glaeser and Gyourko concludes that the costs of labour misallocation caused by land use restrictions in metropolitan cities has a negative impact on the local economy of 4 per cent, while Hsieh and Moretti estimate that housing inaffordability decreased the economy by 9 per cent, through construction shortages from a lack of workers in the nearby regions (Maclennan, Long, & Leishman, 2021).

However, local government does not have a large influence in the housing supply system and on the housing affordability issue, despite the common perception that planning controls[9] have a large influence on land supply constraints and on housing affordability. Site or landowners have a large impact on housing supply: after their land is rezoned or given discretionary approval for housings, they have a large incentive to keep their land which will only increase in price with development and a growing scarcity premium.

Local councils can influence the supply of affordable housing through the planning system, including through inclusionary zoning and voluntary planning incentives (Australian Housing and Urban Research Institute, 2020). An example of this is the City of Parramatta's Affordable Rental Housing Policy 2019 which 'nominates that 10 per cent of land value uplift in all areas outside the Parramatta CBD will be captured by Council for the purpose of providing affordable rental housing', facilitating local council into buying/building affordable housing.

Other more indirect ways local government can influence housing include advocating to other tiers of government for improved social and affordable housing initiatives in their localities. An example of local council initiatives that explicitly improves productivity is facilitating workers accommodation including seasonal accommodation for temporary workers and below local market rates to key workers like teachers and healthcare workers. This is especially important in rural and regional areas.

[9] Note that the Northern Territory does not have planning controls.

Local Government, Urban Planning & House Prices

- There is an inherent scarcity premium in Australian capital cities. Unlike the British, European and American economies where employment opportunities are scattered across hundreds of cities, Australia's leading capital cities hold a much greater proportion of jobs – particularly in the inner cities. Access to employment opportunities then, has depended upon families' ability to find housing in close proximity to those inner city locations – creating a disproportionate level of demand for what is a finite type of housing stock (large, often detached dwellings suitable for families). House prices beyond these cities are far more affordable.

- Land banking is not discouraged. Land owners in these locations can sit on large developable sites for indefinite periods of time. Whenever planning regulations are relaxed slightly to permit apartment or townhouse development, there are huge windfalls to be gained. The underdevelopment and underutilisation of these lands in turn generates more impetus for 'up-zoning' (which in turn generates windfalls). This behaviour needs to be discouraged, because land banking is what ultimately delays and denies Australian families from having greater access to what is already a scarce housing and land resource- whether it be through an underutilisation tax or an outright ban of holding onto property and not developing it.

- The complexity of planning regulations reflect the rising complexity of more complex urban environments in Australian capital cities, along with citizens' expectations of higher quality outcomes. The problem has always been in place on the edges of our cities with greenfield developments. But it's in the inner cities where the development of higher density apartment/townhouse infill stock is met with even greater challenges associated with building into an existing urban fabric (and associated high expectations of the cultured, discerning and vocal local communities) where the costs of planning and development become even worse for the end buyers in the market. Just as the community has expectations for a multi-billion dollar infrastructure project such as Melbourne Metro or Western Sydney Airport, do not underestimate the high expectations of the existing and future community in these urban environments for quality housing and built form outcomes.

- Finally, there have been assumptions about the structure of the local property market industry – that it is either perfectly competitive or monopolistically competitive. It is neither. The local housing market is an oligopoly whereby asymmetric information in the process of land acquisitions (remember land is extremely finite given Australia's major hubs of employment are concentrated around a few capital cities) means there are only a few major players that have the greatest impact on both quantity of supply and price. Under an oligopoly, the price is set by suppliers at a level where they can maximise producer surplus – if you can have 100 buyers paying $200,000 for a house (that is only $20m), you would rather have 50 buyers paying $800,000 (that is $40m) – a totally different outcome to the common assumption that the local property market is incentivised to deliver as much stock as possible.

7.3 The productivity impacts of public infrastructure spending

The examples of productivity impacts given so far are broad because despite the recognised importance of infrastructure in determining economic growth, there is a lack of broadly accepted and validated general models to account for its specific contribution to productivity.

According to Thoung et al. (2015): "the relative paucity of research in this important area must partly reflect the conceptual and measurement problems associated with identifying the relationship between economic growth and infrastructure".

The main problems that can occur when estimating the productivity of infrastructure investment include:

1. the double direction of causality among productivity and growth;
2. estimating the optimal level of infrastructure investment, possibly accounting for spillover and congestion effects;
3. defining and measuring infrastructure (in physical or monetary terms);
4. distinguishing between public and private investments (and accounting for the complementarity effect of such).

Existing models account for some, but not all of these concerns. These include the Aggregate production function, the Cost-function approach, the use of Vector Autoregression Models, and Cross-Section Studies. Each of them present specific shortcomings, and none of them is a priori preferable. The results vary extensively depending on the existent level of infrastructure (thus on the period under analysis), on the type of infrastructure, on the sector under analysis, and on other regional fixed effects.

The elasticity of public investment and economic output

The relationship between investment in public capital and economic output has been widely studied, with considerable variation in results. This relationship is typically expressed as an elasticity, defined as the percentage change in economic output that is induced by a percentage change in the level of public capital. As alluded to in the preceding section, this elasticity will be influenced by a variety of factors, including:

- The nature of the infrastructure investment, and the industries present in an economy
- The relationship observed in data may suffer from reverse causation – that is, investment in public capital may be seen to follow periods of economic prosperity (and healthier public finances), and
- Negative elasticities can be observed as many public infrastructure investments will have non-monetary benefits, which are not within the scope of these studies

Quantifying this elasticity has been a topic of interest to economists for the past three decades. However, the results of studies vary considerably, both in the magnitude of the elasticity as well as the direction of the effect (i.e. positive or negative impact). In addition, the scarcity of studies in an Australian context, means that using the findings of any single international study should be treated with caution. Therefore, a more appropriate solution is to consider the findings of meta-analyses. A meta-analysis is a study of studies. It is a "statistical analysis of a large collection of results from individual studies for the purpose of integrating the findings" (Florax et al., 2002). The section below details the findings of three meta-analyses reviewed by SGS to obtain a range of elasticities.

Meta-analysis elasticity estimates

Nunez-Serrano and Velazquez (2016) conducted a meta-analysis which considered almost 2,000 elasticities, obtained from 145 studies[10]. They identify a mean elasticity of 0.16 for the long-run, and conclude that 'the results of the meta-regression analysis again confirmed the undeniable, positive effect of public infrastructures on productivity'.

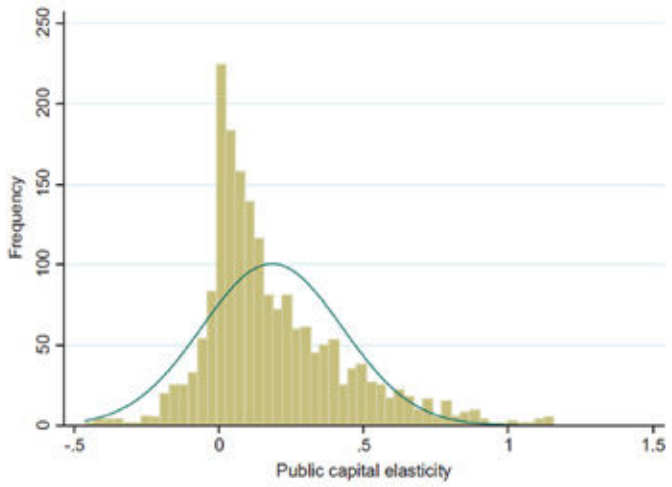
Variation between studies is largely driven by the estimation strategy, country of origin, differences in definitions and publication bias. The distribution of estimated elasticities is presented in Figure 19.

Makhloufi (2017) conducts a meta-analysis on a sample of 208 studies and finds that estimated elasticities vary from-1.48 to 2.06. The reported mean and median elasticities are 0.22 and 0.16 respectively. Consistent with Nunez-Serrano and Velazquez (2016), the variation is found to be primarily driven by:

- Differences in the type of data used (e.g. definition and measurement of public capital)
- The spatial level and country of origin, and
- The estimation strategy and analytical approach.

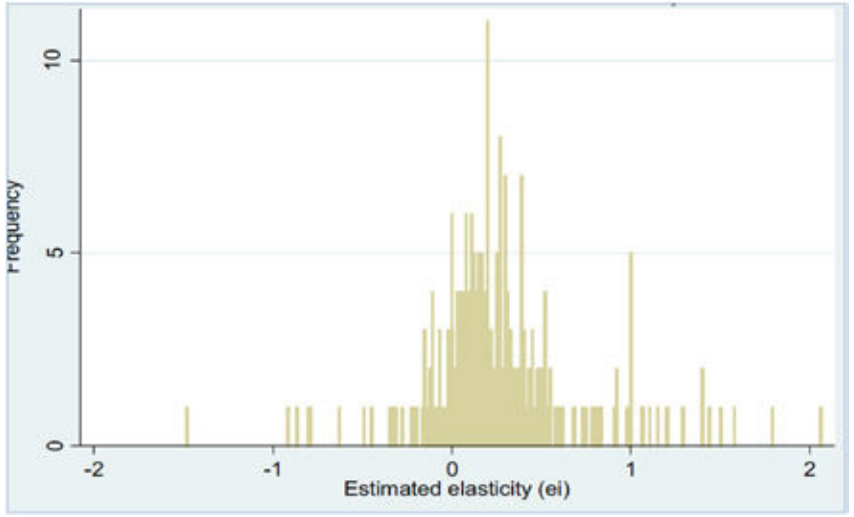
[10] Research partially supported by the Spanish Ministry of Economy and Competitiveness, and co-financed by the European Social Fund

FIGURE 19: DISTRIBUTION OF THE ESTIMATED ELASTICITY OF PUBLIC CAPITAL (NUNEZ-SERRANO AND VELAZQUEZ)



Source: Nunez-Serrano and Velazquez (2016)

FIGURE 20: DISTRIBUTION OF THE ESTIMATED ELASTICITY OF PUBLIC CAPITAL (MAKHLOUFI)



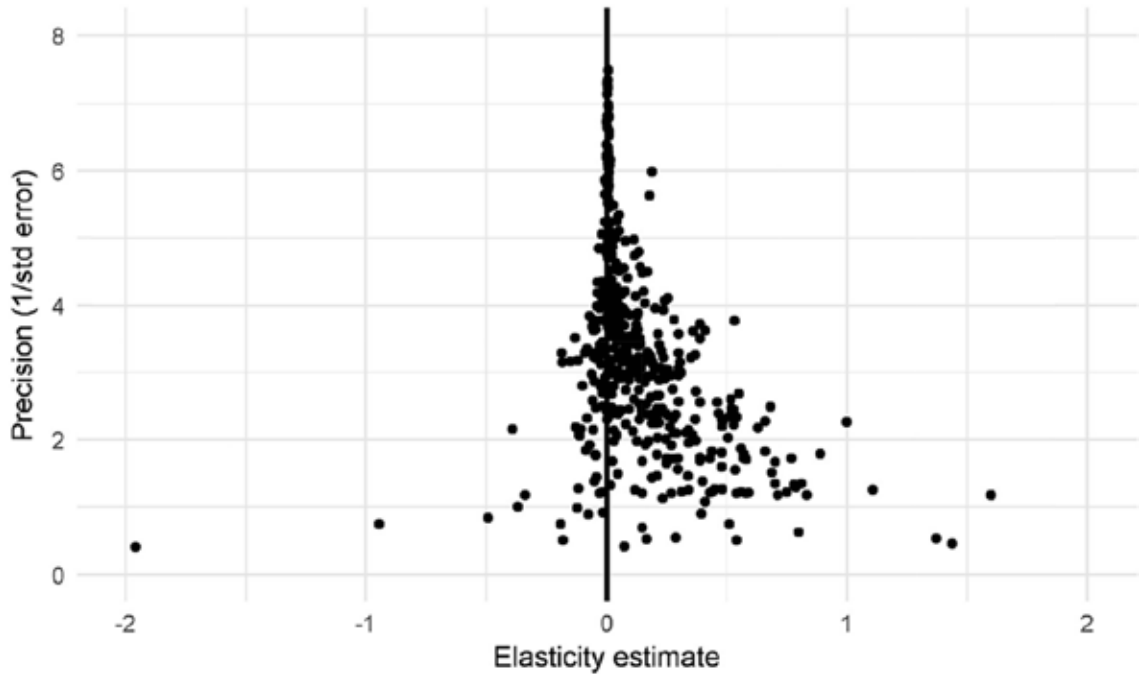
Source: Makhloufi (2017)

Holmgren & Merkel (2017) find similar results, using 776 observations originating from 78 studies. While their study has a narrower focus, primarily around transport infrastructure, an important finding is that 'estimates exhibiting the highest precision are all found to be very close to zero' as seen to the right

The studies discussed above include Australian analysis conducted by Otto and Voss (1994, 1996, 1998). The mean estimates from each study are 0.428, 0.232, and 0.060 respectively. It should be noted that the 1998 study was concerned with the efficiency of public capital provision, and this output elasticity is estimated under the assumption of efficient capital allocation (other studies do not impose this restriction).

Ultimately the analysis in this section finds that investment in public infrastructure (many of which are under the jurisdiction or responsibility of local governments in Australia) generates positive and significant economic/ productivity impacts.

FIGURE 21: PRECISION OF ELASTICITY ESTIMATES



Source: Holmgren & Merkel (2017)

8.0
Climate change

8.0

Climate change

INCREASINGLY, LOCAL GOVERNMENT IN AUSTRALIA IS RECOGNISING THE COMMUNITIES' CALLS TO RESPOND TO CLIMATE CHANGE. FIRSTLY, BY REDUCING EMISSIONS AND SHOW LOCAL LEADERSHIP IN DEMONSTRATING AND UNDERTAKING ACTION. SECONDLY, BY ADAPTING TO THE MYRIAD OF CHANGE THAT ARE ALREADY LOCKED IN. THIS INCLUDES BUILDING RESILIENCE AND DISASTER PREPAREDNESS, AND DISASTER RESPONSE AND RECOVERY AFTER NATURAL HAZARD EVENTS.

During recent natural hazard events (floods/storms, fires, droughts, coastal erosion), local communities responded quickly when they needed to, while State/Territory and national support generated momentum slowly.
Local governments tend to operate in a national policy vacuum as there is no national climate adaptation and risk mitigation strategy, and State/Territory plans – whilst they exist – are seriously lacking in funding and therefore action. It is then often left to local councils to meaningfully respond.

In addition, local government is well positioned to drive climate adaptation locally, as it is able to 'join up' emergency and recovery services and provide a one-stop-shop to the community. Local government has local knowledge and is best placed to respond.

Lack of funding is a hurdle to invest in resilience and disaster preparedness, as national funding continues to be directed to disaster recovery primarily, while there remains underinvestment in preparedness. The lack of preparedness could (and usually does) induce additional costs and issues to local government once disaster does strike.

8.1 Local councils as key facilitators in climate change adaptation and mitigation

Councils are at the forefront of responding to climate change. As their local communities are increasingly affected by bushfires, floods and storms, they are the first port of call for community members. The recent bushfires and floods have shown the importance of local councils' roles in preparing, responding and recovering from extreme events.

Councils are increasingly required to invest in building community resilience, disaster preparedness, disaster response and recovery. In doing so, councils are facing the following obstacles:

- Capacity constraints,
- Financial constraints, and
- Lack of guidance and coordination

Coastal regions have become a particular and well publicised area of concern and many councils within Sydney for example, argue that the diversity of networks and the complexity of existing governance arrangements hinder attempts to draw clear lines of responsibility and limits the freedom-of-movement of individual organisations (Pierre Mukheibir, 2013).

8.2 Benefits of adequate climate change management

Research shows that if climate change and its impacts remain unaddressed, further consequences are potentially inevitable (Philip, 2020).

This includes:

- Australia's whole economy will be 6 percent smaller
- 880,000 fewer jobs by 2070
- $3.4 trillion present value lost opportunity cost over the next century

Deloitte Economics has modelled the impacts of Australians not addressing the existential threat and found the benefits of response.

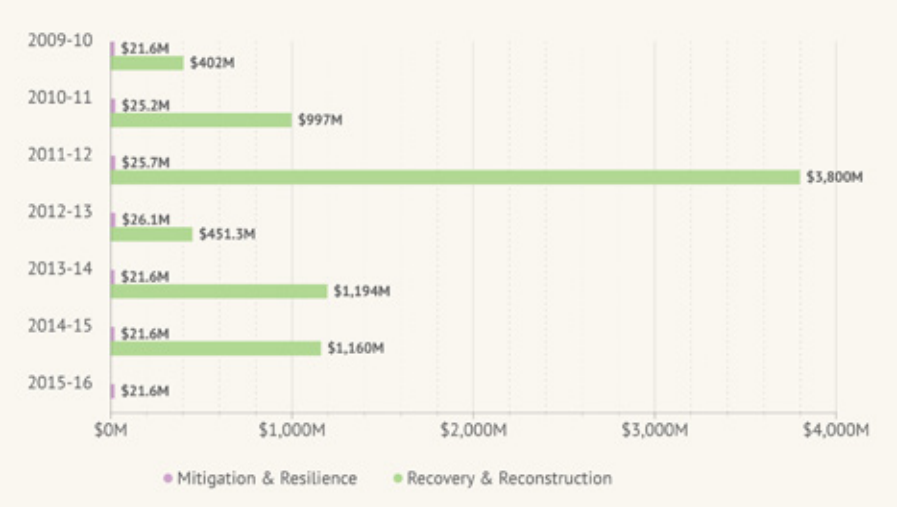
Keeping global warming to 1.5 degrees Celsius, in line with net zero of 2050, would generate:

- $680 billion in present value to the economy
- Grow the economy by 2.6 percent in 2070
- Increase available jobs by more than 250,000

Investing in disaster preparedness and response is sound economic policy. Nonetheless, councils are often underfunded, especially when it comes to disaster preparedness and resilience building. It has been confirmed over the years, that preparedness and resilience building are key to preparing for a future with more extreme and more frequent extreme events. From a productivity perspective there is all the reason to take a more strategic and better funded approach to resilience building and disaster preparedness for every dollar spent on mitigation can save at least $2 in recovery costs (McClelland, 2011).

It was noted by the Productivity Commission Inquiry Report (2014) that "Governments overinvest in post-disaster reconstruction and underinvest in mitigation that would limit the impact of natural disasters in the first place. As such, natural disaster costs have become a growing, unfunded liability for government". The business community confirmed this stance and indicated that the Australian Government spending on mitigation initiatives is currently only around three percent of what it spends on post-disaster recovery and reconstruction (Australian Business Roundtable for Disaster Resilience and Safer Communities, 2016). A visual representation of this is shown in Figure 22 below.

FIGURE 22: MITIGATION COSTS COMPARED TO RECOVERY COSTS IN AUSTRALIA, 2010-2016



Source: Australian Business Roundtable, 2022

FIGURE 23: AMERICAS NATIONAL AVERAGE BCR FOR MITIGATION AND PERILS, 2019

National Institute of BUILDING SCIENCES	ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
Overall Benefit-Cost Ratio	11:1	4:1	4:1	4:1	6:1
Cost ($ billion)	$1/year	$4/year	$520	$0.6	$27
Benefit ($ billion)	$13/year	$16/year	$2200	$2.5	$160
Riverine Flood	6:1	5:1	6:1	8:1	7:1
Hurricane Surge	not applicable	7:1	not applicable	not applicable	not applicable
Wind	10:1	5:1	6:1	7:1	5:1
Earthquake	12:1	4:1	13:1	3:1	3:1
Wildland-Urban Interface Fire	not applicable	4:1	2:1	not applicable	3:1

Source: NIBS, 2019

8.3 Limiting factors on productive actions

Australia's 537 councils are responsible for community infrastructure and assets valued at nearly half a trillion dollars, including land, buildings, and 75 percent of the nation's roads. Critical council infrastructure including roads, drainage, and coastal defences are being damaged by more frequent and severe extreme weather events. In addition, the communities of the councils are increasingly exposed to natural hazards, and communities sometimes struggle to recover, especially if several extreme events follow each other up, as has been the case in recent years. The State and Federal assistance is falling short of what's required to maintain and protect these community assets.

Some councils, often regional councils with limited resources and capacity, are exposed to particular high levels of risk. Extreme heat, bushfires, drought, floods, coastal risks and storms all can have devastating impacts.

Coastal councils are sometimes forced to choose between competing interests in deciding how to protect their coastlines and communities from rising sea levels and worsening erosion. The estimated bill for local governments to fix eroding beaches or protect beachside property or infrastructure commonly goes into the millions and could reach as high as $54 million per year. A council in the North West of Western Australia is an example of local government having to bear the costs of being in vulnerable location to the impacts of climate change when in 2019 the Tropical Cyclone Veronica caused $23.2 million in damage to natural coastal and built assets (Inc., 2022). These disasters are not 'rare', with over 90 percent of all coastal councils have confirmed that they have faced varied impacts by coastal hazards within the past five years (Inc., 2022).

Without streamlined processes for how these events are managed there will continue to be inefficiencies around funding, responsibilities and actions. This is a problem due to the lack of consistent policy and clear guidance of decision-making power from higher tiers of government to local government actions. Without the clear directives from state, territory, and federal government, councils are left to independently determine the scale and nature of the risks that they face which can lead to inconsistent approaches between councils, and insufficient internal council capacity to be aware of and respond to the scale of the risk (Lesley Hughes, 2021).

Funding needed vs funding received

Repeatedly, local councils are constrained by budgeting allocations of state and territory Governments. In the case of grants specific to climate change these are regularly oversubscribed, making them inaccessible to smaller councils who don't have the resources to deliver large scale projects which generate high economic appraisals.

One example of the competition for climate change funding is the New South Wales Government's Resilience to Climate Change program which offered funding to councils to encourage a variety of adaptation and climate risk assessment projects. Across three grant rounds, there were 92 applications requesting over $11 million in funding. In total, the Climate Change Fund was able to award 31 grants totalling $2.8 million, representing ***a third of the total applications and 25 percent of the requested funds.***

Another such example occurred in 2017 when the Victorian State Government established the Victorian Climate Change Innovation Partnerships Grant Scheme. Over 240 applications represented a request of up to $72 million, yet the $4.3 million scheme could only support 24 projects – ***meaning 9 out of 10 applicants missed out on funding.***

In Queensland, the 2017-18 Natural Disaster Resilience Program and 2019 Queensland Disaster Relief Fund were ***oversubscribed eightfold.***

This highlights the extent to which councils are then forced to rely on ad-hoc funding which is inconsistent and cyclical, generally only available after a disaster has caused harm rather than before the event. Again, this is at odds with substantial evidence on the benefit of investing in prevention over recovery.

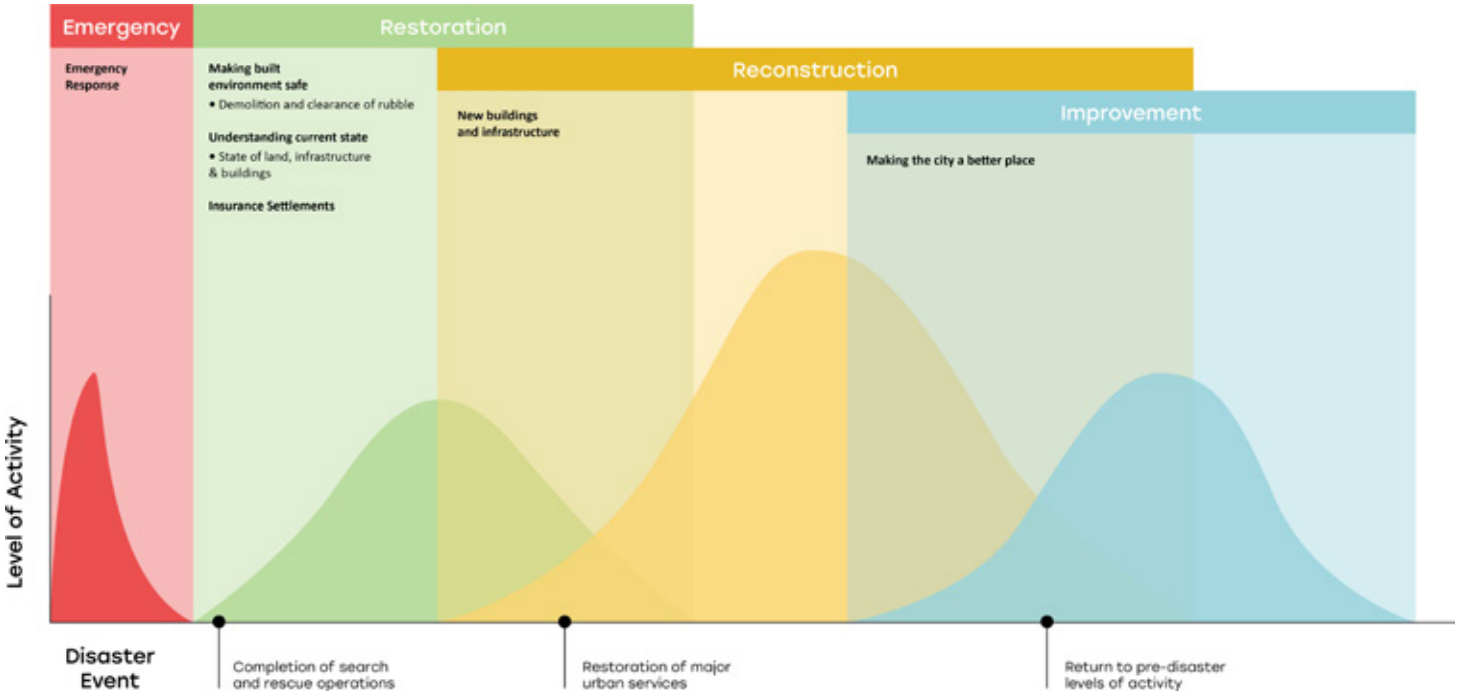
8.4 Case studies of local council intervention

Productivity increases from these actions primarily stem from reduction in future resource loss and/or additional expenses which would have resulted in suboptimal market outcomes.

Cities for Climate Protection (Council C. , 2017)

Local councils have often been at the forefront, continuing effort during periods of instability and inaction at state and federal policy levels. Between 1997 and 2009, 233 councils across Australia who made up 84 percent of the population joined the Cities for Climate Protection group. This involved local councils planning and implementing actions to reduce greenhouse gas emissions across council operations, households, and business. It has been estimated that actions implemented by the program **reduced carbon dioxide emissions by 18 million tonnes in Australia and saved councils and communities $95 million via reduced energy costs.** While this is a commendable effort, the emission reductions are still small in context to Australia's overall level of emissions.

FIGURE 24: PHASES OF RECOVERY AFTER DISASTER STRIKES



Source: SGS Economics and Planning on Kates (2006)

Adelaide as carbon neutral

Adelaide aims to be carbon neutral by 2025. This is based on the strategy of reducing emissions by encouraging greater uptake of renewable energy, installation of battery storage as well as signing up business and community partnerships with shared aspirations. The council is also offering grants for installing solar PV (photo-voltaic) and battery storage systems, electric vehicle or bicycle charging and energy efficiency/ water saving upgrades. Investment in infrastructure has included smart LED CBD public lighting that dim on detection of movement. ***These efforts have delivered significant energy and maintenance savings. It also reduced real time monitoring and maintenance turn around times for fault detections.***

Tweed Shire flood protection

Following the floods of March and April 2017 in Murwillumbah, Tweed Shire Council realized that the higher flood risks expected because of climate change rendered an existing industrial area unviable over the long term.

It proposed a land swap plan, in which the Council would swap the most flood prone industrial land for newly released industrial land on higher ground, leaving the flood prone land for flood mitigation. The grant application was successful and Tweed Shire Council received funding for the land swap and flood mitigation. ***This local Council action generated a benefit-cost-ratio of 2.1, meaning every $1 invested more than doubled in benefits. It also protected 140 local jobs*** (Council T. S., 2020).

8.5 Moving Forward

There is a need for a national adaptation strategy, supporting State and Federal adaptation plans. Under these councils could nest their local adaptation plans which should at a minimum cover:

- Community resilience
- Disaster preparedness

And the four stages of recovery

- Emergency response, local coordination
- Restoration
- Reconstruction, and
- Improvement – building back better

Underneath that broader strategy, Councils are then ideally positioned to provide local coordination of services and to identify the needs and key stakeholders in the local community. For example, during the latest floods, the Queensland Government supported the setup of local community recovery hubs. Councils can play a key role in identifying the local needs and issues so that recovery can be tailored.

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