

*Submission to the Parliamentary Select Committee on  
Regional Development and Decentralisation*

**Bus Industry Confederation**



**March 2018**

## Growing new and transitioning regional cities and towns

The following comments in this submission are from BIC Policy Paper 10 that is yet to be released titled "The Value of Getting There - Mobility for Stronger Australian Regions".

The BIC submission focusses on the importance of regional connectivity between villages, towns and cities and the importance of accessibility for transport disadvantaged living in regional areas. Intra - regional and Inter regional connectivity are both important contributory mechanisms for the development of regional centres, investment in regional centres and regional infrastructure and the promotion of the competitive advantage of regional locations for business as well as supporting social inclusion.

About 20 per cent of the Australian population live in cities and towns of between 30,000 and 85,000, or in smaller rural towns and remote settlements (DIRD 2015).<sup>1</sup> Mobility/accessibility as it relates to these smaller towns/cities and their hinterlands, is the main focus of this submission.

This submission addresses most of the Terms of Reference of the Inquiry by looking at regional mobility/accessibility through two main lenses. First, it looks at the potential for wider economic benefits, such as regional agglomeration (productivity) economies, resulting from improved regional mobility levels. If such opportunities exist, as research indicates they do in larger cities, they might form a significant new economic benefit from improving regional mobility, additional to traditional user benefits, and would further support efforts to deliver such mobility improvements. In this regard, the main themes in the submission are concerned with how mobility/accessibility improvements might help to strengthen regional integration, such as through expanding regional labour market catchments. Second, it builds on extensive Bus Industry Confederation work on the connections between mobility and social inclusion. Mobility improvements support social and economic participation, thereby helping to foster strong regional communities.

### Population trends

Australia's population growth rate has been high over the past decade, with 3.7 million people added, a compound growth rate through this period of 1.65 per cent per annum. Looking at the location of this growth, Table 1.1 shows that growth rates tended to decrease with increased regional remoteness, with the major cities becoming increasingly dominant. Between 1996 and 2006, Major Cities accounted for 86.5% of population growth and this share was only slightly lower at 80.2% from 2006 to 2016 (preliminary estimate for 2016). The population growth rate over this latter period for Major Cities exceeded the national growth rate, confirming increasing concentration in these locations. The growth in population numbers in Inner Regional locations between 2006 and 2016 shows the draw of the hinterland of Major Cities.

Outer Regional and Remote/Very Remote Areas are losing population share, as reflected in their population growth rates compared to the national rate, but still growing in absolute population numbers (over the 2006-16 decade). However, hidden within the numbers shown in Table 1.1 for the 2006-16 period is a decline in population numbers in Remote + Very Remote Australia in the last few years of the decade, numbers falling by 10,000 between June 2013 and June 2016. The major part of this decline was in Very Remote Australia. Within regions, there has been a tendency for population growth in larger centres (RAI 2015).

The Regional Australian Institute (RAI 2015a) reports that, in regional Australia. There is a clear pattern of growth in coastal areas, areas around major regional cities and in mining regions: conversely, areas that have seen population decline tend to be inland (RAI 2015a, p. 8). The mining effect would have reduced in recent years but the other trends remain important.

More broadly, population ageing will be a major demographic challenge for Australian regions in coming years, with the numbers aged 65 years or older expected to double nationally (RAI 2015b). This will be a particular challenge for what RAI (2015b) calls Heartland Regions and Connected Lifestyle Regions, which have relatively high proportions of seniors, particularly those aged 65-74. RAI (2015a) notes that *there is a strong pattern of migration of people in their 80s and 70s from regional to capital cities* (RAI 2015a, p. 91). At the other end of the age scale, relatively high young dependency rates (young children under 15 years) also tend to characterise Australia's regions, the regional rate of 31.9% exceeding that of 26.1% in metropolitan Australia. Outmigration of young adults is a further notable regional demographic trend, being adverse for regional development potential (and also tending to increase the *share* of the regional population that is aged over 50). RAI (2015b) suggests a good response strategy to loss of young adults is to seek to attract the slightly older 30-40 year old age groups at the early stage of family formation.

Discussion of the population groups most likely to be at risk of social exclusion due to relatively poor mobility opportunities, in both urban and regional settings, typically highlights older people, youth, people with a disability, people with language difficulties (e.g. recent arrivals), those on low incomes and those with little or no car access, with women and single parents also sometimes included (Clifton and Lucas (2004), Currie and Delbosc (2011)). The higher proportions of older people and the young in regional areas suggests, *ceteris paribus*, relatively greater transport disadvantage challenges in the regions than in metropolitan areas. It is also suggested in this submission that pre-school children and their carers should also be added to this list of potentially transport disadvantaged groups, particularly in regional areas, because of the demonstrated high lifetime costs for children experiencing disadvantage, which are associated with being unable to attend pre-school.

<sup>1</sup> The proportion of the population living in smaller rural towns and remote settlements, in particular, has declined continually over the past century but the proportion living in towns of 30,000-85,000, after a small increase, has remained stable (albeit small) over the last two decades.

Table 1.1: Regional population numbers and growth in Australia by remoteness index

Remoteness Area	Population change 1996-2006 (000)	2006 Population (000)	2016p Population (000)	Increase 2006-2016 (000)	Compound growth rate 2006-16 % p.a.
Major Cities	2069.2	14209.1	17159.0	2949.9	1.87
Inner Regional	330.2	3828.0	4357.6	529.6	1.3
Outer Regional	9.3	1927.1	2090.6	163.5	0.85
Remote + Very Remote	-17.9	486.8	521.7	34.9	0.83
AUSTRALIA	2390.8	20451.0	24128.9	3677.9	1.65

Sources: Derived from RAI (2015a), Table 2.3 and ABS 2017, Table 1.

## **NIEIR work on access to services**

The National Institute of Economic and Industry Research (NIEIR 2009) examined access to services in Australia. A summary of the mobility challenge of regional Australia is provided in Figure 1,1, derived from data assembled by NIEIR on representative distances a resident of metropolitan Australia, other urban Australia and rural/township Australia, would need to travel to access a core range of essential services. These are defined as:

- Education: From child care and pre-school through the various levels of schooling to TAFE and Universities.
- Health: the range of services from general practitioners through local hospitals to major hospitals, medical specialists and allied health services such as dentistry and optometry.
- Welfare and related services: including Centrelink (welfare payments), aged and other residential care, and police services.

Recreational services are not included in this list, an important and common omission in much transport work. NIEIR estimates that a typical rural resident in Australia would have to travel over 30 kilometres a day to access essential services which a typical metropolitan resident can reach by travelling an average of 1.4 kilometres a day. The tyranny of rural/regional distance is immediately apparent, with distances for residents of some regions obviously being much greater than the representative picture shown.

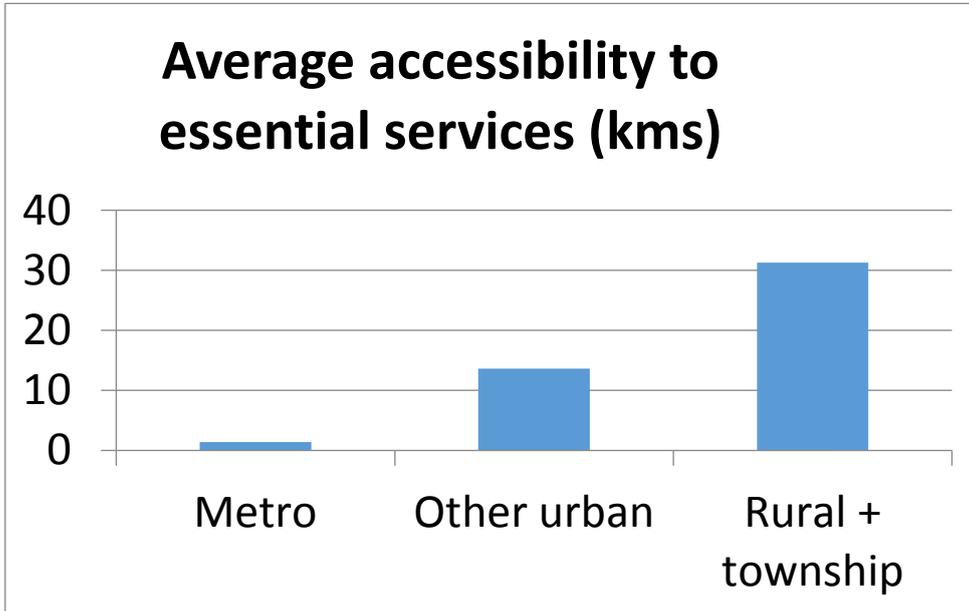
Essential services can be divided into 'widespread services',

such as a pharmacy, GP services, child care; and 'centralised services', such as specialised medical treatment and a university, which need a larger urban centre. People living in country towns are likely to have access to widespread services but are likely to have poor accessibility to centralised services. People living in townships under 1,000 people are likely to have poor access to both types of services.

When services, such as doctors, schools, hospitals, or pharmacies move away from small towns, becoming centralised, cost shifting takes place. The cost of transport is moved from the supplier of the service to the user of the service. This cost shifting is happening across many rural and regional communities. It is not so much a problem for those with a higher income who have mobility options, except for time loss; however, it can be a considerable problem for those on lower incomes without good mobility options. What it does is 'force' car ownership on those who are able to drive, at times creating financial stress (Currie and Delbosc 2013).<sup>2</sup> This financial stress is not always obvious, thus leading to less transparency about unmet transport needs. Those who are struggling to meet car costs tend to save on operational expenses by travelling less. Those who are 'forced' to buy a car tend to use it even when an alternative means of transport becomes available; while they may be struggling to pay for a car, they don't wish to add additional transport costs through public transport.

<sup>2</sup> The annual cost of owning an average car that travels 15,000 kilometres in a year is \$8,698 (AAA 2016).

Figure 1.1: Average Australian access distances for a core set of essential services



Source: NIEIR (2009)

## Economic benefits of mobility for regional growth

Transport improvement initiatives are usually assessed, from the benefit side, in terms of expected benefits to current and future users (Stopher and Stanley (2014); Laird and Venables (2017)). Thus, for example, regional road improvements may lower road freight costs and directly improve the productivity of the freight transport task. Faster inter-regional public transport services will benefit users, including both private and business travellers. It is acknowledged, however, that in circumstances of market failure, there may be additional benefits generated by transport improvements, beyond the traditional *user benefits*. The body of work on *wider economic benefits* has evolved in recent years to address this issue. Laird and Venables (2017) discuss this topic in terms of how transport might affect proximity and productivity due to agglomeration, induced investment and land use change and employment. They summarise the potential benefits as follows:

*... transport can raise productivity by fostering intense economic interaction; this can occur in clusters within narrowly defined areas or more widely by linking areas; transport shapes the level and location of private investment, unlocking development and triggering large scale redevelopment of urban and other areas; and transport impacts the labour market, potentially enabling more workers to access jobs. These impacts can yield real income gains, particularly where transport induced investments interact with market failures associated with increasing returns to scale, obstacles to efficient land use, and labour market imperfections (Laird and Venables 2012, pp. 9-10).*

In similar vein, DfT (2012) categorises potential wider economic benefits as agglomeration benefits, output change in imperfectly competitive markets labour supply impacts

and move to more productive jobs. In an Australian regional setting, we focus here mainly on potential agglomeration economies, which typically add substantially to the benefits from major urban transport projects, and to a lesser extent on land use changes and employment impacts that might be associated with regional transport improvements, particularly public transport improvements. Potential benefit opportunities in any of these areas would strengthen the case for investing in improved regional transport services, beyond the traditional (and significant) user benefit argument.

## Agglomeration economies

BIC Policy Paper 9 (Stanley et al. 2017) pointed out that an extensive body of research has emerged over the past three or so decades on cities and productivity growth, achieved via agglomeration economies, arising from economic density, and building on ideas that extend back to Marshall (1890) and even Adam Smith (1776). The origins of such productivity gains have been understood for some time, summarized by Puga (2010) as sharing, matching and learning. Sources of agglomeration economies include improved access to inter-industry information flows (information spillovers), thick labour markets, better access to specialized services (for example, legal services, design and testing, financial services) and to locally transmitted ideas, together with improved access to public infrastructure. Economies of scale may also accrue to individual firms. Agglomeration economies are a case of market failure because the benefits from agglomeration arise through system interactions, being unable to be fully captured by the individual firms that might drive change.

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In urban settings, productivity increases (agglomeration externalities) of 3-8 per cent from doubling city size<sup>3</sup> (Rosenthal and Strange 2004) and 4.5-6 percent from doubling employment density in a city (Ciccone and Hall 1996; Ciccone 2002) are widely cited. Ciccone and Hall (1996) suggest that density is more important than size for determining urban productivity advantages, which is important for thinking about the possible role of urban clusters. The meta-analysis by Melo et al. (2009), drawing on 729 elasticity estimates from 34 studies, suggests a mean elasticity value of 3 per cent across all its reviewed studies, with considerable variation between studies. More recent research has tended to strengthen support for the lower end of the elasticity range, as issues such as firm selection and sorting have been recognized (see, for example, Behrens et al. 2014). Relative output increases in service industries, particularly knowledge-intensive industries, many of which tend to concentrate in CBDs and other urban hubs, are typically at the high end of the elasticity range. Melo et al. (2009) for example, report an elasticity of urban agglomeration for service industries of about 8 per cent.

In terms of the subject matter of the current submission, a key question in relation to productivity is how far the concept of urban agglomeration economies might extend to regional/rural areas, related (for example) to labour catchments that depend partly on mobility opportunities. A relevant research base in this regard concerns productivity growth in a polycentric (or multi-centred) regional development setting. This is a relatively small research base, with some of the research focused on the potential productivity benefits of networked centres within a polycentric regional setting, as distinct from agglomeration economies that arise in a single city. Meijers and Burger (2010) examined this question in a US setting and found that, other things being equal, polycentricity seems to be beneficial for productivity, particularly in smaller metropolitan areas, *but a collection of cities does not provide a substitute for the urbanization externalities [agglomeration economies] of a single large city, even though the size of the population in both may be similar* (Meijers and Burger 2010, p. 16).

An important question is whether individual cities within a polycentric region might 'borrow' from each other's sizes to capture some scale benefits, sometimes described as network economies or network externalities (Boix and Trullén 2007). Agglomeration economies are generally thought to decay with distance whereas network externalities are thought to be dependent on the strength of functional relationships and less distance dependent. At interest is whether network externalities might be a source of regional agglomeration economies. Meijers, Burger and Hoogerbrugge (2016) examined this question of borrowed size in a European setting, noting that over half of the EU 15 urban population live in small and medium-sized towns and cities of 5,000-100,000 population. Using metropolitan level functions as a proxy for agglomeration economies, the first three of their findings were that:

1. *both size and connectivity in (inter)national networks positively contribute to the presence of metropolitan functions;*
2. *while cities borrow size through being well embedded in (inter)national networks, being well embedded in regional networks generally does not translate into a higher level of metropolitan functions;*
3. *the effect of local size on the presence of metropolitan functions is generally substantially larger (roughly 2.5 times) than the effect of network connectivity* (Meijers et al. 2016, p. 195).

Meijers et al. (2016) also pointed out that competition between cities for some metropolitan functions may mean agglomeration losses in some places, not compensated by benefits from borrowed size. Importantly for an Australian context, they found *that small cities gain metropolitan functions from an increase in size, whereas larger cities profit more from an increase in regional and (inter)national network connectivity* (Meijers et al. 2016, p. 195).

Veneri and Burglassi (2011) examine how spatial structure affects labour productivity in Italian provinces. They found that larger regions perform better than smaller ones in productivity terms and regional agglomeration economies do not replace single-centre agglomeration effects: doubling the centralization of activities increased labour productivity by 2.7 per cent. They found no support for the idea that borrowed size was a source of agglomeration economies in Italian regions.

These studies are not encouraging in terms of the possibility of regional agglomeration economies being realizable in small (in population terms) Australian regions. However, the evidence base to support the existence of network/agglomeration economies, which might help to inform Australian regional development policy, is sparse. As Burger and Meijers (2016) state, in reviewing this literature:

*This discussion not only suggests that the embeddedness of cities in regional, national and international networks is important for their performance but also that small- and medium-sized cities could potentially internalize the benefits of larger cities by being well-positioned in urban networks. Unfortunately, relatively little is known about the relative importance of urban network economies vis-à-vis agglomeration externalities or which types of cities would benefit from urban network externalities* (Burger and Meijers 2016 p. 6).

More broadly, the findings of Thissen et al. (2016) are important. They found that 80% of regional growth in European regions is explained by demand-led growth in export markets. If Australian regions are to play a larger role in coming years, as we believe they should, a focus on export expansion must remain central (as it has long been). Intra-regional and inter-regional connectivity are both important contributory mechanisms here, as well as being supportive of social inclusion.

<sup>3</sup> This elasticity range implies that the elasticity of productivity with respect to city size is in the range of 0.05 to 0.11.

## Land use changes

The potential for major transport projects, both public transport and road, to substantially change land uses in the project vicinity is well recognized (e.g. Canary Wharf in London) and is integral to much of the current discussion of value capture opportunities associated with major transport improvements. Laird and Venables (2017) distinguish here between land use changes that increase the variety of retail and service choices available to consumers, which might be thought of as *agglomeration economies in consumption*, and changes that increase the presence of office type activities, which may be an example of *agglomeration economies in production*. The submission focus here is on agglomeration economies in consumption, discussion in the preceding section having dealt with agglomeration economies in production.

Stopher and Stanley (2014) note that:

*Agglomeration effects in consumption, an important element of liveability, are a relatively new area of quantitative research. However, recent German analysis (for example) indicates clear evidence of agglomeration externalities in consumption, with bigger cities (in population terms) showing benefits for residents from a larger range of service choices, across areas like restaurants and bars, concerts, dancing, theatres and museums (Borck 2007) (Stopher and Stanley 2014, p. 208).*

The tendency for people to move from rural areas and smaller towns to larger Australian regional towns is a reflection, inter alia, of such influences.

In terms of generating potential external benefits in regional Australia, this issue is most likely to be clear cut in a policy context of deliberately seeking to promote stronger growth of regional centres, with initiating projects like high speed rail (HSR) and complementary networked trunk bus services as key ingredients. Hensher et al. (2012) have looked at HSR in Australia and query whether the substantial 'social agglomeration' benefits they identify are additional to the traditional user benefits attributable to generated traffic or are just another way of measuring those benefits. They do not answer this question. High end regional development initiatives like HSR, of course, involve much more than just transport improvements and need to be assessed accordingly, in the HSR case as a major alternative population settlement strategy (to continued heavy concentration of growth in the main capital cities). The potential for agglomeration economies in both production and consumption arising from a major regional re-development initiative, driven by high end public transport upgrades, should be acknowledged.

In terms of the more usual small road and public transport improvements that might be found in regional Australia, such as highway upgrades and trunk public transport service enhancements, what are the prospects for consumption benefits over and above traditional transport user benefits? If there are substantial transport bottlenecks acting as a barrier to regional development, then there may be an

opportunity for land use change benefits. This would need to be identified on a case by case basis and the transport impact teased out from other structural factors influencing regional change. Part of the assessment involved needs to focus on whether land use changes are creating additional economic value or simply shifting development from one location to another.

More broadly on the topic of land use changes, the downside of large cities producing agglomeration economies is that they also generate diseconomies of size, such as congestion, crime and air pollution, an example of market failure. In terms of regional policy development, increasing population numbers in Australian regions of (say) 50,000 people, or more, would be one way to mitigate the growth in such diseconomies of large city size, with accelerated growth in the more medium sized non-metropolitan cities (e.g. 200,000 population) also providing some opportunities for agglomeration economies in production and consumption. For smaller cities, there may be opportunities for agglomeration economies in consumption. In line with this approach, and recognising the lack of empirical evidence supporting agglomeration /network externalities in small cities/regions, Burger and Meijers (2016) support stimulating integration between nearby places, as part of a no-regrets strategy to strengthen regional urban systems, which should be particularly beneficial for medium-sized cities but also supportive of smaller places and of reduced social exclusion risks across small to medium sized cities/regions.

## Labour market impacts

In terms of the more usual day to day operation of public transport in most regional areas, and upgrading service standards thereof, perhaps the most interesting wider economic benefit opportunity might arise in the labour market space. Laird and Venables (2017) discuss this in terms of supply side and demand side perspectives. If a public transport service improvement, for example, encourages a person to enter the labour market, who would otherwise have been unemployed, or an underemployed person to extend their working hours, then there is a potential wider economic benefit from increased regional (and national) output and associated gain in government tax receipts. Laird and Venables (2017 p. 6) note that *These effects are important in developing economies, as well as in regions of developed economies that have significant structural un- (or under-) employment.*

To illustrate this point, market failures may entrench unemployment or underemployment in some regional locations, with current Australian housing markets relevant to the current discussion. Case studies by BIC and research undertaken by the Australian Research Council and NIEIR report people moving to regional areas in search of cheaper housing. A lack of transport choice is one reason for cheaper regional housing, a circumstance that may discourage job seeking. Improved public transport opportunities, in this situation, may encourage improved employment and lead to increased value of regional output, beyond traditional user benefit calculations. As with land use changes, this needs case by case consideration but the BIC case studies suggest there is likely to be a benefit

opportunity here, in the current Australian economic setting.

The case studies and research identifies high monetary values from additional trip making by regional people at risk of social exclusion and high value from building bridging social capital, which is likely (inter alia) to promote employability. It is suspected that the high monetary values are partly picking up this potential regional employment support function flowing from good mobility. This is a very new and under-researched area but the BIC case studies support the idea that there may be regional wider economic labour market (employment) benefits from improved mobility opportunities.

## Implications

The concept of polycentric regional development is particularly strong in Europe, where the European Spatial Development Perspective lists *Strengthening a polycentric and more balanced system of metropolitan regions* among its primary goals, recognizing the importance of international/national and regional/local transport networks in achievement (EC 1999). The practical relevance of this approach is reflected in regions like Skåne County Sweden (population 1.3m), where a polycentric regional development strategy is firmly in place. This links across the Øresund Bridge to neighbouring Copenhagen in Denmark, with the wider Øresund Region having a total population of about 4 million. Quality intra- and inter-regional connectivity, including public transport systems, provide a foundation for regional integration and the expectation of productivity growth, through (for example) expanded labour catchments. The UK is taking a similar approach to developing the north of England, with High Speed Rail playing an important role within a polycentric framework. Successful implementation of such a polycentric strategy seems likely to support wider economic benefits of all the types discussed herein in these regional settings.

Seeking to extend this regional thinking to Australian regional settings is complicated by the population size gap between our biggest cities and the next tier, and by the distances between most major Australian cities. Given population size and geography, Australia generally does not have the density and diversity of mid-sized cities, located close to large cities, which are common in US and Europe. South Australia, for example has Adelaide at 1.3m, with Mt Gambier the second largest town at only 25,000, some distance away. In terms of seeking productivity benefits through agglomeration economies, linking Mt Gambier and surrounding towns to each other (with about 50,000 people in the total regional catchment) and then linking the region to Adelaide and Melbourne would have much lower expectations of what is possible from networking/agglomeration than from linking (say) Malmö (320,000) and Lund (120,000) to the wider Øresund Region, including Copenhagen, in a commutable polycentric region

of 4 million people.

Notwithstanding these concerns about scale and population dispersion, the idea that a networked region is likely to have higher productivity than the same region without networking seems plausible, provided there is a reasonable base size. Just what that reasonable base size might be, however, lacks a solid empirical foundation, since there has been little analysis of the geographical scale of agglomeration externalities and urban network externalities. Most studies on agglomeration economies and network economies focus on large and medium sized cities, rather than small cities, and studies of network economies often have a global network focus.

The Regional Australia Institute (2016) observes that, beyond the 5 major capital cities, there are 31 regional cities in Australia, each with over 50,000 people. Adding labour catchment populations might increase this number, such as by bringing in Mount Gambier (which is not one of the 31 cities listed by RAI). RAI (2016) reports that output levels of the 31 small Australian cities grew faster than for the five major metropolitan areas between 2002 and 2010, even if absolute productivity levels are less than in the major capitals (reported as being at 88% of metropolitan city productivity by RAI 2016). This is a positive regional growth story. However, there is no solid evidence to suggest a city/region of 50,000 will be of sufficient size to generate agglomeration economies in production.<sup>4</sup> For larger Australian cities/regions, such as Newcastle, Geelong and the Gold Coast, the concept of agglomeration/network economies in production is much more likely to be relevant, given size and proximity/connectivity to a major capital city. Industry mix and scale, however, suggests that such agglomeration economies will tend to be smaller than for the main metropolitan capitals, since the relative employment intensity in high-tech knowledge-based sectors, which typically have the highest agglomeration elasticities, is usually lower in these smaller to medium sized cities than in the large mainland capitals and the evidence from Meijers and Burger (2010) is that networking will not make up the difference.

More optimistically, the fact that many small to medium sized Australian regional towns are growing in size supports the idea that there are agglomeration benefits in consumption available in such locations, which probably extends down to towns of perhaps 15-20,000 population, large enough to support a range of services and activities. Transport improvements to support such centres can potentially enhance these consumption agglomeration benefits but at a possible risk of further de-population of smaller centres. However, improving trunk public transport services between smaller towns and regional centres may enable people to remain in the smaller location, while accessing services in the regional centre. This is a win-win situation, which may promote agglomeration economies in consumption in the regional centre, while improving life opportunities for those in smaller centres.

<sup>4</sup> The 50,000 threshold size in RAI (2016) seems to be based on the minimum city size designated by Uchida and Nelson (2010) in the development of an agglomeration index. That index was developed more as a way to measure

city size across countries than as a way to imply threshold population numbers for agglomeration economies to be relevant.

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## Conclusions

This short review on regional economic development suggests that medium to large sized cities/regions might realistically pursue agglomeration benefits in production and consumption and smaller towns/regions might be a source of agglomeration economies in consumption. In more disadvantaged regions, opportunities for net employment gains are a further potential wider economic benefit opportunity as identified in the BIC case studies. Improving intra-regional mobility choices can support these wider economic benefit opportunities, while providing the more traditional benefits to users. Improvements in regional social participation are likely to support stronger regional economic participation. The connections between mobility, social inclusion and wellbeing are important here, having both social and economic benefits for regions.

More generally, as a market failure argument to support stronger Australian regional development, regions need to highlight the benefits they provide as an alternative to the external costs of large metropolitan city size (e.g. congestion, crime, air pollution, etc). These external costs are large and growing. They should be accounted in regional policy decision-making.

## Regional mobility and social inclusion

### Some concepts and definitions

This part of the submission examines how mobility/accessibility impacts a person's risk of social exclusion in a regional Australian setting. The broad literature base on which this builds is characterised by a host of concepts that may readily confuse or even mislead a reader. These concepts include: mobility, accessibility, social capital, community, transport disadvantage, social exclusion and wellbeing. BIC's shorthand definitions of these concepts and understanding of their significance follow.

**Mobility** = the capacity to move around by any means, including walking, cycling, private vehicles, public transport and other mobility devices. Mobility is a pre-requisite for being able to undertake activities anywhere other than where a person is currently located.

**Accessibility** = the ability to get to activities or opportunities, such as work, education, playing sport, visiting friends, etc.

**Social capital** = 'Social capital consists of networks of social relations which are characterised by norms of trust and reciprocity' (Stone 2001 p.4). Stone *et al.* (2003) identify three types of social capital:

- *Bonding social capital* describes closed networks, such as the family and perhaps work. Bonding generates closer, denser ties.
- *Bridging social capital* spreads resources between networks, allowing people to access multiple

networks and therefore resources and opportunities.

- *Linking SC* is created through networks with those in authority or who have power and who are useful for obtaining resources. They are commonly institutional connections.

Commonly, bridging and linking social capital are considered together.

**Community Strengthening** = occurs where a sense of neighbourhood develops between individuals, families and organisations. It happens when people become actively engaged in the community. They feel socially connected, may become volunteers or leaders, and a sense of community pride is established (Vinson 2004).

**Transport disadvantage** = this is perhaps the most confused concept of this group, with different researchers having different conceptions of transport disadvantage (TD). As Currie and Delbosc (2011) point out, some analysts talk of TD in terms of (for example) characteristics of the transport system and urban form which make it difficult for people to undertake transport for the purpose of engaging in activities, while others focus instead on the characteristics of the groups of people who are considered most likely to have difficulties with transport (groups such as older people, youth, etc, as listed above). In their own research, Currie and Delbosc (2011) add another way of looking at transport disadvantage, based on self-reported sub-scales of perceived difficulty people have in undertaking transport. Our definition is simple: transport disadvantage occurs where people experience a shortage of transport options which restricts their mobility and hence their access to goods, services and relationships.

**Social exclusion** = Refers to individuals or groups of individuals at risk of not being able to participate in mainstream society as a result of policy failures.

**Wellbeing** = This term commonly refers to notions of happiness, life satisfaction, fulfillment and human flourishing (Sen 2000, Vella-Brodrick and Stanley 2013).

## Literature on regional transport and social inclusion

Most of the literature on connections between mobility and social exclusion is primarily urban-based. The following summary explores research that has been reported on rural mobility and where it draws from major urban research.

The concept of social exclusion arose during the 1970s in France, to describe people who were excluded from the social insurance scheme, evolving to encompass a broader understanding during the 1990s (Lenoir 1974, Levitas 2000). In policy terms, the focus on connections between transport and social exclusion, and responses thereto, probably began in earnest with the work of the UK Social Exclusion Unit (SEU 2003). Links were drawn between the exclusion of people who do not have access to a car, and their needs for education, employment, access to health and other services and to food shops, as well as to sporting, leisure

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and cultural activities. Findings from the SEU's transport study were organized into five groups of barriers which need to be addressed in order to improve transport-based accessibility to key services considered by the SEU authors to be central to social inclusion. These are:

1. the availability and physical accessibility of transport
2. the cost of transport
3. services are located in inaccessible places
4. safety and security – fear of crime
5. travel horizons – people on low incomes were found to be less willing to travel to access work than those on higher incomes.

The SEU argued that to remove these barriers, and reduce social exclusion through transport improvements, there is a need to understand how people access key activities and link this with planning to improve such accessibility (accessibility planning), as well as undertaking key strategic policy initiatives, such as:

- reviewing regulations governing the provision of bus services. This point is especially relevant in the UK context, where de-regulation of bus service provision outside London took place in 1985-86, with major adverse impacts on mobility opportunities for many people. Bus patronage outside London was 37% lower in 2015-16 than it had been in 1985-86, whereas it increased by 105% in London, where there was no deregulation (DfT 2015)
- integration of transport planning into planning for services provision (e.g. education), to enhance accessibility
- a range of initiatives to make transport more accessible, such as reducing cost and addressing the fear of crime associated with public transport
- the formation of partnerships between transport providers, local authorities and local service providers, such as education and health, to work on transport solutions.

More recently, and in similar vein, the UK Passenger Transport Executive Group, which represents the regional passenger transport entities outside London, summarized public transport service qualities that are required to respond to social exclusion as availability, accessibility, affordability and acceptability (PTEG 2010).

Hine and colleagues undertook research on transport and social exclusion in regional areas in the UK from the 2000s, finding considerable accessibility difficulties for the groups of people at risk of social exclusion, compounded by an absence of, or poor quality, public transport (for example, Mackey and Hine 2004; Kamruzzaman and Hine 2012). The results indicate that individuals from rural areas with a higher level of accessibility are more integrated within their local community and, as a result, are potentially less at risk of

being excluded from society due to immobility. Differences, however, were also found between different groups within an area (e.g. non-car owning individuals who were more reliant on walking, and low-income individuals who made trips of a shorter distance). Reliance of older people on lifts from family/friends was found in a Canadian study of rural transport, but 34% of study participants had to forgo a desired trip due to lack of transport (Hanson and Hildebrand 2011).

To a large degree, the work on transport and social exclusion at that time was a conversation about accessibility in a narrow sense, about the need for people to obtain goods and services and get to work, school, recreation, etc. There was no systematic attempt to go further and examine how reducing transport disadvantage, and social exclusion related thereto, can impact on the wellbeing of those who benefit from transport improvements, nor to the subsequent benefits to society. The European Mobilate project changed this by examining connections between transport, the built environment and a number of personal characteristics and beliefs on the quality of life (wellbeing) of older people (Mollenkopf et al. 2005). The research found rural older people in the five European countries examined were particularly disadvantaged in relation to mobility, a situation requiring 'immediate intervention' (p.293).

Much early Australian research on mobility and social exclusion is set out or summarized in Currie, Stanley and Stanley (2007). Many of the chapters in that book discuss how transport can affect the life chances of particular groups, such as youth, older people, indigenous people, people with a disability, people living in disadvantaged areas and young single mothers with children. Currie (2007), for example, draws attention to the reliance on car travel in rural and regional areas and the associated dependence of young people on others for many transport needs, in conflict with their increasing desire for independence as they grow to adulthood. He emphasizes the important role that public transport can play in meeting travel needs and needs for independence of young people. He also notes the reduced trip making of young rural people, compared to those in larger regional towns, also found by Stanley and Stanley (2004, 2007). Stanley and Stanley (2004) suggested that, in Warrnambool region, young people coming from families with low incomes and living on farms were perhaps the single most transport disadvantaged population cohort in that region. Currie (2007) notes particular concerns about access to education and employment opportunities for young people, with Stanley and Stanley (2007) agreeing and adding the importance of access to entertainment and recreational opportunities.

Hensher (2007) looks at the important role of the car in meeting travel needs of older Australians, particularly in areas with low public transport availability, such as rural and regional areas. Browning and Sims (2007) also recognize the importance of the car in providing mobility and accessibility for older Australians and point to the growing significance of the over 85 cohort, whose numbers are increasing, with a requirement for suitable travel opportunities. Betts (2007) sees the growing importance of providing travel opportunities for older Australians in rural/regional settings, a need that is being accentuated by declining populations and services in many communities, with an associated requirement for longer trips. He argues that this means inter-regional public transport service levels

need to improve.

The language of social exclusion has not been part of US transport conversations, but as Rosenbloom (2007) points out, US legislation about Civil Rights (1964), Environmental Justice and Americans with Disabilities (1990) all bear social inclusion footprints, with transport elements. She argues that:

*... social exclusion in transportation, as in many governmental services, can arise because some groups do not benefit from a range of publicly provided programs, pay an unfair price for the services they do receive, are unintentionally harmed by otherwise appropriate public or private actions, and/or are excluded from the planning processes in which important transportation decisions are made. In addition, social exclusion can arise in the planning, financing, delivery, and operation of transportation services... (Rosenbloom 2007, pp 3.6-3.7)*

Social exclusion has also not traditionally been part of the conversation in the developing world, except that there is a recent interest by international aid related organisations, the World Bank and the United Nations Sustainable Development Goals in the concept of social exclusion (see for example SDSN (Sustainable Development Solutions Network) 2016). However, transport is not mentioned in this context.

Much of the small amount of research on rural transport and social exclusion has concentrated on older people. For example, an overview of rural transport in the UK found that 37% of older people living in rural areas in the Republic of Ireland have a need for transport that is not being met by public or private means, while in Northern Ireland, 71% of people regard lack of access to public transport as a key disadvantage for older people living in a rural community (Centre for Aging Research and Development in Ireland 2010). Mobility for older people in Japan living in more rural areas and new towns (newly established townships) was recently explored (Chikaraishi et al. 2017). As with the studies in Ireland, it was found that an absence of access to a car reduced the range of accessible options and number of trips taken. People were more dependent on lift-seeking, with those without such contacts experiencing greater isolation.

## Implications

The links between social exclusion and transport in rural/regional settings has been neglected, the small amount of research undertaken having mainly focused on older people, although a little Australian research has drawn attention to mobility challenges facing young people. Overlooking younger age groups experiencing social exclusion is an issue that has strong social justice implications, as well as a more profound regional economic impact and, longer term, on the wider society. Examining ways in which young people can be provided with improved regional mobility choices is one important way in which regional economic and social participation can be supported.

## Societal cost of social exclusion

McDonald et al. (2013) undertook analysis of NIEIR data to examine regional towns in Victoria that were enjoying higher and lower rates of economic growth. They found four broad categories of growth-supportive factors (p. 6):

- Industry and employment (industry mix, employment and innovation)
- Human capital (education and skills)
- Infrastructure and connectivity and connectivity (transport, communications technology, agglomeration)
- Liveability (amenity and housing).

A couple of points have particular relevance to this submission. Those regional cities with higher growth had fewer youth (aged 15 to 19 years) not engaged in work or further education (6.8% versus 8.2%), more people living near public transport (73% versus 64%) and a lower share of the population who experienced transport limitations (22% versus 27%). This submission concludes that improved transport infrastructure supports regional economic growth through improving accessibility to social opportunities and services and opportunities for social participation, and access to clients and suppliers for business.

The reduction of risk of social exclusion through the improvement of the provision of public transport is important on the grounds of social justice and equity, but it also has been shown to improve the wellbeing of other members of the community. Mobility enables individuals to explore the world, accumulating social resources and obtaining skills, thus gaining a sense of satisfaction and positive emotions. This creates an upward spiral of positive affect that promotes more sustained wellbeing and mobility is a means of improving mental health. (Vella-Brodrick and Stanley 2013). Having a community with good health and wellbeing also increases the region's economic and business opportunities. This point was confirmed by the OECD (2006), who found that the growth of regional cities is constrained by social costs of unemployment and poor human capital. Vella-Brodrick and Stanley note that 'more attention needs to be devoted to these less direct pathways, particularly those that are amenable to change through policy, as is the case with transport mobility' (2013, p. 241).

Thus the personal costs of social exclusion are reinforced by broad societal costs of failing to reduce severe disadvantage. This can also result in a lack of social cohesion. For example, when the barriers to work become frequent and high, such as when there is a lack of transport to get to work, a learned helplessness evolves and people stop trying (Seligman 1975). Evidence for this association between mobility and positive affect has been empirically shown, the influence being mediated by the role of mobility in forming social capital and connections with the community (Vella-Brodrick and Stanley 2013).

## Conclusions

A strong case is building in this field of transport research. Poor regional mobility options and accessibility is resulting in increased risk of social exclusion and diminished personal wellbeing, right through the age groups. Importantly, barriers around mobility contribute to a lack of personal opportunities from a very early age. Children who are not able to get the benefit of early socialisation in a pre-school setting, especially those children from families experiencing a range of disadvantages, are more likely to struggle with keeping up with their education and therefore leave school or disengage from school and on-going educational options and thus employment options, with substantial societal costs resulting. While those who have poor mobility may maintain contact with their immediate family and/or peer group, their greater opportunities for a more fulfilling life may be limited. At the other end of the age scale, the aged in an institution can often only socialise with a narrow group of people if they lack transport, evidence suggesting some experience loneliness and a narrowing down of experience and enjoyment. Older people living independently also need mobility choices that sustain their social networks and wellbeing.

ARC research has shown that poor mental health is linked with social exclusion, within its urban sample. A further examination of the special needs group who live outside a major urban area showed that youth, while mixing with their peers, may lose self-esteem and also experience a lack of purpose in life. While they are mobile, their activities more commonly involve interaction with peers, the bridging activities that connect them with societal opportunities (education, work, a broader network of contacts) being less available to them. Work in the US by Perry has shown that one of the greatest benefits from an enriched early childhood education (preschool program and weekly home visit) is a criminal pathway foregone, encompassing both personal and societal benefits (Heckman et al. 2010).

The NSW *Western Regional Transport Plan* (TfNSW 2013) provides a neat framework within which to examine regional mobility/accessibility challenges and responses thereto, focussing on supporting travel to and from a region, travel within a region and on supporting communities within the region. The Plan then frames its policy directions and actions in terms of providing better transport services, ensuring effective regulation and improving transport infrastructure. This general approach is very much in line with the approach taken in the present report being prepared by BIC (Policy Paper 10), although some of the conclusions that we draw differ from those in the NSW Western Regional Plan or involve matters that received little attention in that Plan, particularly regional governance arrangements and, associated with that, the pursuit of what the UK has come to call 'total transport'. The BIC Policy Paper 10 is also more specific about setting targets for regional public transport service standards. In general, however, the Policy Paper 10 aligns quite closely with what the NSW Western Regional Transport Plan proposes, even though remoteness is an important theme of that report.

TfNSW (2013) highlights how the NSW Long Term Transport Master Plan identified a number of main transport challenges facing regional NSW

- Delivering better transport links to and within cities
- Improving accessibility through a better mix of transport options across regional NSW
- Providing convenient, reliable and safe travel in regional areas by modernising and making best use of our transport networks – especially our bus, rail and taxi services
- Making sure our state roads in the regions support the needs of customers, communities and regional industries
- Finding workable transport solutions that will preserve the vitality, amenity and character of country towns
- Making walking and cycling easier and safer and giving customers choice when travelling within their towns
- Facilitating access to vital services for an ageing regional NSW population and people with disabilities
- Identifying and preserving key transport corridors (TfNSW 2013, p. 10).

This submission endorses these directions but adds the following, in relation to regional person movement:

1. Recognising and acting on the place of intra-regional transport in improving social inclusion and strengthening capacities for individuals and the region.
2. Improved Enabling regional communities to have more control over planning and delivering regional transport improvement priorities that affect their wellbeing and that of their communities, through the mechanism of Regional Accessibility Committees
3. Using a 'total transport approach' to planning and delivering regional mobility services, with wider access to school bus services a key part of this direction in situations where these services are currently reserved for school children but have spare capacity
4. Within this total transport approach, establishing public transport service standards that provide a decent social safety net for mobility/accessibility
5. Giving high priority to the mobility needs of regional young people, including a much greater focus on the needs of pre-schoolers.

## **Regional Accessibility Committees and a 'Total Transport' approach**

Instead of thinking about individual modes, a more effective regional transport system needs to start with users needs and look at how to best combine the resources that are already used, frequently ineffectively, to meet such needs, adding additional resources when needs demand. The present disaggregated system leads to service overlap and gaps. By bringing together existing transport providers and their resources, together with others who understand community mobility priorities, a 'total transport' approach can be pursued. Key components are that

1. the current perverse administrative and governance barriers between transport modes (route buses, school buses, community transport, etc), which encourage siloed thinking and behavior, are removed,
2. the needs of the travelling public are made the central focus
3. existing assets are worked harder and funding for additional service provision is needs based at regional level.

Regional Accessibility Committees (RACs) can play an important regional role here, engaging local people and stakeholder representatives in needs identification, identification of resource availabilities (e.g. people, vehicles and money) that might help better meet outstanding needs and either advising governments on implementation priorities and/or implementing some such priorities themselves.

The two major barriers preventing successful implementation of such an approach are typically the incapacity of authorities to step outside siloed thinking and the parochial attitude of many current mobility service providers to 'their assets', which have often been provided by government money or by donation with government tax support. Disrupting funding flows within a regionally integrated approach is a way to deal with these barriers, with RACs playing the regional integration role.

The aim should be to encourage independent mobility, drawing on a full range of offers from special purpose transport to mainstream transport options, wherever possible. While the route bus system is the back-bone of local public transport, it needs to be part of a regionally integrated system that offers transport information, education and assistance and co-ordinates all forms of local transport (route buses, spare seats on school buses, community transport, taxis, walking and cycling, share cars, uber, mobility scooters, wheelchairs, etc), to better meet regional mobility needs. This will also involve related accessibility-oriented activities such as education on bus use and encouraging the movement of hospital outpatient appointments to coordinate with route bus timetables. Over

time, and with the emergence of new transport technologies, vertical integration of regional service provision is likely to evolve, which should help realize much of the potential for improving regional service offerings.

This idea of an integrated approach to service provision in low transport demand settings is consistent with conclusions reached by the UK House of Commons Transport Committee in its report on *Passenger transport in isolated communities*. That Committee concluded:

*Total transport' involves pooling transport resources to deliver a range of services. For example, it might involve combining hospital transport with local bus services. That new approach could revolutionise transport provision in isolated communities by making more efficient use of existing resources. We recommend that the DfT initiates a large-scale pilot to test the concept in practice. (UK House of Commons Transport Committee 2014, p. 3).*

A similar approach has been proposed by the Ontario Ministry of Transport:

*All public transportation services within a community should be coordinated to expand or provide more efficient transit service. This can include coordination between conventional or specialised agencies; long term care agencies; social service agencies; hospitals, ambulance and patient transfer operators; school boards and school bus companies; intercity bus companies; taxi operators; and volunteer groups. (MOT Ontario 2012, p. 105).*

The UK PTEG report (2014) recommends the establishment of a 'Connectivity Fund', with contributions from a range of government departments, such as health and education, thus recognising the importance of transport in achieving the desired outcomes of these departments. It would be reasonable to ask other organisations to share transport costs to better enable their passengers to access their services, in recognition of the value that transport offers to these services and their client populations, as detailed earlier. However, the Auditor General of Scotland and the Accounts Commission (2011) notes the difficulties that can be associated with convincing agencies to release some control and to work at breaking down silos of responsibility for the greater good, as there are long established practices and boundaries between different policy areas.

The regional mobility integration function, working under a RAC, should be performed by the entity best placed to do this in any regional context. In many cases it will be the main regional route/school bus operator, who will most likely be the largest service provider and should be well placed to provide a cost-effective coordinating service. In some regional SA settings, the integration function might be performed by an expanded Community Passenger Network agency. These are matters for regional resolution, recognising the way that evolving technology is likely to support regional vertical integration of mobility service delivery.

This submission proposes the roll-out of a number of demonstration studies of Regional Accessibility Committees

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in each State, with significant real decision-making authority for identifying and tackling regional mobility needs devolved from the State Government to regional level, with associated financial capacity to ensure quality planning and service delivery. Back office functions, such as trip scheduling, should be capable of being replicated across entities, to reduce costs. A major focus should be on breaking down the silos that hinder services meeting needs and opening up school bus services for wider access, an issue of major symbolic importance in the push for better integration. Successful delivery should lead to a comprehensive roll-out, adding strength to regions in terms of mobility/accessibility delivery and associated social and economic participation.

### Public transport service standards

Provision of improved regional and urban trunk public transport systems will provide such benefits as:

- expanding the regional labour catchment, a source of increased job opportunities
- increasing access to educational opportunities, at post-secondary level but also at secondary level, where it can assist (for example) in improving access between secondary schools, to support a broadening of senior years subject choices between schools/campuses
- improving access to medical, health and other services, including community services and pre-school
- improving access to friends, recreational and other opportunities, to help build vital bridging social capital.

These benefits are mainly about increasing social inclusion, both individual and community scale, but they are also about better regional integration.

The Australian regional case studies undertaken by the BIC suggest that towns of under about 5,000 to 6,000 population do not tend to have a normal town route bus service, the smallest Victorian regional town identified with a town route bus service, for example, having a 2011 UCL population of about 5,700. Where regional town route bus services do exist (i.e. larger towns), the case studies found variable service levels, with (for example) SA service levels broadly similar to those in WA regional towns but both being at a lower PT service density (kms/per capita) than Victorian regional towns.

The case studies identified some interesting service ideas, such as

- using a school bus to market test a possible route bus service and using school buses to provide town route bus services (at marginal cost) between school peaks and after the pm school peak in small towns (<~5,000 population)
- concentrating service more highly in key trunk corridors to improve effective frequencies in parts

of the service area (common in larger towns and cities)

- use of open access route/school services into a town, running from areas that might have otherwise been school only, showing how service scoping can evolve into a wider purpose
- using a mail service to provide a (low frequency) route bus service in an area without any such service.

Ideas such as these will emerge if regional stakeholders are given a greater opportunity to influence planning and delivery of regional mobility services. They can help in providing higher town and intra-regional PT service levels than might otherwise be achievable.

The town route bus services considered in the case study areas suggest that target or benchmark PT route bus service levels in regional towns might be something like the following:

**Town population 3,000--6,000:** Hourly 'public transport' type service: Monday to Friday 8.00am to 5.00pm start of last run; Saturday morning 8am to 12pm. Use school buses (including spare seats thereon) or community buses as far as possible, vehicle sizing depending on load expectations, and using volunteer drivers would help to contain costs. This may create issues with disability access, so availability of a vehicle with wheelchair access is important. These services should be timetabled but with a dial-up (on-demand) opportunity, if this only requires a small route deviation (implying a little slack in the timetable).

**Town population ~6,000--15,000:** Hourly regular PT route service: Monday to Friday 7am to 7pm start of last run; 8am to 4pm Saturday; 9am to 2pm Sunday. Use low floor route buses complemented by school buses and community transport vehicles, including volunteer drivers, for some runs, if needed and feasible, with all vehicles accessible.

**Town population ~20,000>:** Hourly PT service, with 2 or so additional services in both the am and pm peaks; Monday to Friday 7am to 9pm, or later, start of last run; Saturday hourly headway 8am to 6pm; Sunday 9am to 4pm. All services operated by low floor route buses. The additional peak services could perhaps be provided by community transport or school buses in the pm peak.

These indicative target service levels are higher than what Australian towns usually provide but are warranted by the high value of services that support social inclusion (Stanley and Hensher 2011). More creative means of service provision, involving a total transport approach, should make achievement more feasible.

Intra-regional public transport service frequency will depend on the spatial distribution of population and jobs in a region. However, towns of more than 2,000 population should have multiple return services to the largest regional town on a daily basis, probably at around a two- or three hourly frequency, to support regional integration, social inclusion and economic opportunity, provided this does not involve a one-way trip of more than about an hour. As town size

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increases, so should service frequency, towns of perhaps 5,000 having a one to two hourly service to the regional centre. Spare seats on school buses, or other existing community transport services, may be able to provide some of these travel opportunities, provide this is done in an integrated way. The demonstration studies proposed above for RACs provide an opportunity to test out such intra-regional service standards, which can be little more than suggestive at this time, given the variability in regional scale and demographics, and to explore innovative ways to provide such service.

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