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Flexible Transport Services: Overcoming Barriers to Implementation in Low-Density Urban Areas

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ABSTRACT *Flexible transport services include a range of passenger transport mobility offers, where services are flexible in one or more of the dimensions of route, vehicle allocation, vehicle operator, type of payment and passenger category. Although flexible transport services are used increasingly in Europe and the USA as part of the public transport mix where regular services are not sustainable, there are few working examples of these services in urban Australia, although there are many opportunities. Through a series of semi-structured interviews with key stakeholders in New South Wales, Australia, the article identifies barriers to greater use of flexible transport services in low-density urban areas. These five sets of barriers include: institutional frameworks such as regulation; economic issues of funding and cost; operational issues such as fleet and vehicles; operator and community attitudes, awareness and cultures; and information and education. The article makes recommendations to enable and encourage greater use of flexible transport services by transport service planners and providers as part of the public transport mix in low-density urban environments where it can be more difficult to provide regular and scheduled public transport.*

灵活运输服务（FTS）包括一系列客运移动性选择，在路线、车辆配置、车辆操作、支付类型和乘客类型的一个或多个方面提供灵活服务。欧美在常规公共运输服务难以企及的地方越来越多地使用灵活运输服务，澳大利亚城市地区也存在许多机会，但这种服务在澳大利亚城市并不常见。本文通过对澳大利亚新南威尔士重要利益相关者的一系列半结构式采访，发现了在人口密度低的城市扩大这种运输服务的五大障碍：规章等制度框架，资金和成本等经济问题，车船等操作性问题，操作者和社区的态度、意识和文化，以及信息和教育。本文提出了几条建议，以期帮助运输服务规划者和提供者在人口密度低、常规和按时的公共运输服务不易提供的城市地区将灵活运输服务作为公共交通系统的一部分加以推广。

KEY WORDS: Flexible transport services, barriers to implementation, low-density urban public transport

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1. Introduction

Flexible transport services is an emerging term in passenger transport that covers a range of mobility offers, including the more commonly known demand responsive transport (DRT) services, where services are flexible in one or more of the dimensions of route, vehicle allocation, vehicle operator, type of payment and passenger category. This article focuses on 'open access' flexible transport services as part of the public transport offer in urban areas. Section 2 identifies the role of flexible transport services, noting that they are used increasingly in Europe and the USA as part of the public transport mix in areas where demand is too low to support conventional public transport, but there are few working examples of these services in Australia. Section 3 outlines the research methodology to identify barriers to greater use of flexible transport services in New South Wales (NSW), Australia, through interviews with stakeholders. Section 4 discusses five sets of barriers: institutional frameworks such as regulation; economic issues of funding and cost; operational issues such as fleet and vehicles; operator and community attitudes, awareness and cultures; and information and education. Section 5 makes recommendations to overcome the barriers to enable and encourage greater use of flexible transport services as part of the public transport mix in low-density urban areas. While some of these are jurisdiction specific due to particular institutional arrangements, most are more generic with value to a wide range of environments.

2. The Role for Flexible Transport Services

2.1. What are Flexible Transport Services?

Flexible transport services is an emerging term in the transport field that covers services provided for passengers and freight that are flexible in one or more dimensions of delivery. Figure 1 illustrates the dimensions of flexibility in public transport services. Flexible transport services, operated with dedicated small buses, minibuses or maxi-taxis for general public use or for closed user groups such as special services for older people or people with disabilities, are often known as demand responsive transport or DRT. In the mid-1990s, new forms of flexible transport services were made possible due to the rapid developments in communications, computing and in-vehicle systems. The ability to exploit Intelligent Transport Systems overcame key barriers in learning about customer

Figure 1. Dimensions of flexibility in public transport services. *Source:* Brake *et al.* (2006).

mobility needs, analysing these needs, optimising and allocating work, handling the dispatching functions and, importantly, reducing the time taken for these activities.

2.2. Flexible Transport Services Internationally

Flexible transport services are used increasingly in the UK, Europe and the USA as part of the public transport mix in areas where demand is too low to support conventional scheduled public transport. In the UK and Europe, this is often in rural environments that have densities more similar to the fringes of urban areas in Australia. Enoch *et al*. (2004, Appendix A) give detailed descriptions of some 70 schemes around the world as of 2003. More recent information on flexible transport is available from the online virtual library of the CONNECT EU Project (2010), which is now being maintained and updated by the FLIPPER Project (the successor to CONNECT EU) and is available at http://www.interreg4cflipper.eu. Laws *et al.*, (2009) review DRT schemes in England and Wales. From the mid-1990s, a wave of new DRT services has emerged all over Europe. The USA has a long history of implementing dial a ride schemes for special user groups. More recently, there are examples of general public access to DRT schemes such as those in Denver and Dallas as discussed by Teal & Becker (2011). Most of the flexible transport services in operation are still aimed towards small-scale niche markets or groups of disabled users. However, some are on a larger geographical scale such as RegioTaxi in the Netherlands and PubliCar in Switzerland, which are nationally supported and regionally organised general access flexible transport service schemes.

Ideally, everyone would have access to high-quality conventional scheduled public transport. However, budget constraints of governments mean this is rarely possible. Flexible transport services can be used for 100 per cent of a trip door-to-door, or for part of a trip. In a number of cases outside Australia, services that started as small niche services have generated sufficient demand to necessitate the provision of a conventional bus service over time such as in the Flanders area of Belgium (a low-density urban fringe area) and in the north-east area of the UK (an urban periphery business park).

The success factors for flexible transport services vary considerably but include a willingness to allow flexible transport services to be part of the public transport mix, an institutional view that they are beneficial underpinned by funding and a recognition of their contribution in meeting the accessibility gap in areas of low demand.

2.3. Flexible Transport Services in Australian Urban Areas

Australian cities are characterised by their low density and dispersed nature in which it can be difficult to provide high-quality public transport efficiently. These cities exhibit characteristics similar to other cities worldwide where flexible services are in place and yet there are few working examples in Australian urban areas.

Flexible transport services have been introduced in other jurisdictions to address transport issues that low-density Australian cities face. Opportunities for greater use of flexible transport services in low-density urban areas as in Australia include:

- filling the gaps within metropolitan areas to provide access to services concentrated into strategic bus corridors
- providing feeder services from peninsulas and isolated valleys to major public transport corridors

- providing service on the fringe of outer metropolitan areas where low density and dispersed development means conventional services are very low frequency
- providing 'start-up' services in new growth or developing urban growth areas where the current population may not be sufficient to justify conventional bus services, but where it is important to establish public transport
- providing services at times of the day or week when conventional services are not viable such as late at night, Friday and Saturday nights, and weekends
- encouraging able community transport clients to use public transport and
- meeting the transport needs of people not eligible for community transport.

Flexible transport services in Australia have been reviewed by Currie (2007) and Logan (2007). Two well-known flexible bus services in Australia are Telebus in Melbourne, Victoria and Roam Zone in Adelaide, South Australia. Whilst Flexibus in Canberra, ACT was introduced in 2005 as a flexible service replacement to scheduled services, it has not survived. However, a network design review by the operator is understood to be proposing the reintroduction of flexible transport services along with other service changes. These Australian services are 'open access', being available to the general public rather than being restricted to specific user groups. Telebus in the outer suburbs of Melbourne is noteworthy for its longevity, having been introduced in 1978 (Usher, 1978, 1994). Currie (2007) identifies the common characteristics across these flexible bus services as offering simplified operations at low cost for a low-density market including 'many to one' operations, confined small catchments and mature residential areas.

Flexible taxi services, particularly in Queensland, are discussed by Logan (2007). For instance, in the northern Queensland city of Mackay with a population of approximately 120 000, the Mackay Taxi Transit Service uses spare capacity in the taxi fleet to provide some of the urban public transport network. In Brisbane, the capital of Queensland with a population of approximately 2 million, Yellow Cabs operate demand responsive services called Council Cab under contract to Brisbane City Council to provide access for eligible residents to their local shopping centre. The Council Cab model also operates on the Gold Coast, the large conurbation of over 500 000 to the south of Brisbane.

The research identified a number of flexible transport services in urban areas in NSW that were previously undocumented. In urban areas in NSW, flexible services are provided by conventional bus (although often a smaller than typical vehicle is used), taxi vehicles and those vehicles owned by community transport, usually minibuses. The operators of these vehicles include bus operators also running scheduled services, taxi operators (operating taxis), bus operators (operating taxis), and community transport operators using their own vehicles and also taxis. The funding of these services varies from those funded under 'conventional' bus contracts from the NSW Government, funding to community transport services to cater for older and frail passengers, funding by local government areas (LGAs) for their constituents and other services funded by the private sector such as major employers.

Open access bus services operated by Deane's Buslines as 'LocalLink' services in Queanbeyan (from December 2005) and on the South Coast are probably the best examples of flexible bus services in operation in NSW with services being flexible in route and collect and drop-off at the passenger's home. Services are timetabled to a fixed point or points as part of the service to meet contract and regulatory requirements. In the Hunter Valley, the Maitland On-call bus has been operating for over 10 years using a 24-seater

midibus. At night, normal bus routes in two areas of Maitland are replaced by on-call buses that pick up and set down at bus stops and can be pre-booked. However, it is likely to be replaced by a scheduled night-time bus service as part of a forthcoming network review.

A number of flexible transport services operated by taxis were identified. In the LGA of Willoughby in Sydney, Council Cab is a shared ride taxi, pre-booked the previous day to arrive in a 30-minute window, with a fixed fare of $5 subsidised by Willoughby Council. Users pre-book with the Council Coordinator who acts as the hirer of the taxi. The concept was developed as a way of providing transport services at a cheaper cost than the council buying its own community bus. In the growth centre of south-west Sydney, the bus company used taxis to provide intermediate services for passengers until demand increased enough to provide a bus. In some cases, it was found that community transport providers are using taxis or shared taxis to provide services as a regular part of their vehicle mix and/or as a back-up when other vehicles are not available.

Innovative community transport services in the Sydney Metropolitan area, often flexible shuttle minibus services, are documented in Transport Planning & Management (2007). In south-west Sydney, South West Community Transport (SWCT) has a partnership with a local bus company to run a wheelchair accessible coach to provide door-to-door service for a monthly shopping service from the urban/rural fringe area of Wollondilly to the major shopping centre of Campbelltown. SWCT provides a shuttle service to the coach pick-up point. Gaps in current transport provision, unmet transport demand and the need for flexible transport services to fill some of the opportunities identified above in low-density urban areas in western Sydney have been identified in several reports including Transport Planning & Management (2005) and Western Sydney Community Forum (2009).

Although not open to the general public, this research found a number of other bus services that meet a gap in conventional scheduled services. These include employer-funded shuttle buses from major stations to workplaces in north-western Sydney, and courtesy buses provided by venues such as clubs (including RSL clubs for veterans and the current and ex-service community) and pubs to pick up patrons from home and return them home after a night out. Rather than funding their own employee shuttle services, other large employers, under agreement with the government, fund extra scheduled regular bus services provided by the contracted bus operator.

A number of free bus services open to all were identified, all of which run to a fixed timetable and to a fixed route: the flexibility is therefore in the fare dimension with no fare being charged. These are not explicitly considered in this article.

3. Research Methodology

This article reports the outcomes of a project to identify barriers to more wide-scale use of open access flexible transport services in Australian urban areas as a way of understanding why they are not more widely used. The project focused on Sydney, the capital of NSW, although it is recognised that legislative and regulatory environments vary both across Australia and internationally.

Discussion with key stakeholders was the methodology adopted. This was used both to understand different stakeholder understanding of the potential provided by flexible transport services and to identify their perceptions of the barriers in implementation. Stakeholders were defined widely in this context and included users, operators, policymakers, peak bodies and administrators of transport activities.

Semi-structured interviews were conducted to discuss awareness and experience of flexible transport services, and the perceived barriers to implementation. The questions used in the interviews were developed using existing knowledge of barriers from overseas experience and knowledge of the Australian environment to explore with stakeholders their perceptions of likely barriers, and the options for overcoming these barriers. Stakeholders were drawn from the government regulator, actual and potential operators of flexible transport services, and the peak bodies for community transport service providers, operators, taxi operators and users. The interviews included a question about other stakeholders who could be consulted and this helped to ensure that relevant stakeholders, and any other sources of information, were identified. A total of 19 stakeholders were interviewed, with the results being presented anonymously, unless the information or stakeholder position was publicly available.

The University of Sydney's Human Research Ethics Committee approved the project and this governed the contact of stakeholders, the questionnaire and format of the interviews. The semi-structured questionnaire was broad in its approach identifying each stakeholder's understanding of flexible services before moving to a discussion of how the stakeholder considered that services in their domain of interest might be improved, and then to barriers to such improvement. A seminar was held in May 2010 to present the results of the study to interviewees and other stakeholders, and to seek stakeholder feedback on the issues and possible solutions.

4. Barriers to Flexible Transport Services

Through interviews, stakeholders identified a wide range of barriers to greater use of flexible transport services. This section has broadly categorised these into five themes: policy, legislative and regulatory barriers; economic barriers relating to funding, costs and fares; operational barriers related to fleet and vehicle issues; barriers that arise through cultural or perception differences between regulators, funders, operators and users; and information, education and promotion barriers.

4.1. Policy, Legislation and Regulation

In any jurisdiction, the provision of transport services is governed by legislation and regulation and by the distribution of area-specific funding.

The NSW budget included almost $600 million in 2008–2009 for metropolitan and outer metropolitan bus services (NSW Ministry of Transport, 2009). There are three community transport programmes in NSW: the $35 million Home and Community Care (HACC) Community Transport Sub-program (funded 60 per cent by the federal government and 40 per cent by the state government), the $3.6 million Community Transport Program for the transport of the disadvantaged and the Regional Transport Coordination Program (NSW Ministry of Transport, 2009). The NSW Passenger Transport Act 1990 and associated Passenger Transport Regulation 2007 govern the operation of buses, taxis and hire cars with specific clauses for different types of operator. Community transport operations are outside the Act entirely.

The policy framework for the legislation is a mode-by-mode approach, rather than a holistic approach in which each mode is integrated to focus on meeting transport demand. The legislation appears to reflect a policy position that buses are for mass transit and taxis are

for individual transport. This gives rise to the barrier of very mode-specific regulation. In this context, regular bus services must have a timetable and fixed stops on their routes whereas taxis are infinitely flexible in their routing and timetable. Flexible transport could be thought of as a bus acting more like a taxi in that pick-up or drop-off at the passenger's home by bus deviates from the concept of a specified route. The pigeon-holing of operators prevents the intermediate operation of flexible transport. In particular, the successful flexible services in NSW, such as Deane's LocalLink bus in Queanbeyan near Canberra and the associated LocalLink service connecting urban areas on the South Coast, have had to work within this rigidity by providing a timetabled portion of the service and fixed stops to meet the definition of 'a regular bus service' even though deviations from this are provided.

The Act reflects the reality that regular bus services are subsidised by government and that competition between a subsidised bus service and an alternative, even if the alternative is operated without government subsidy, could reduce passengers on subsidised services and therefore increase the gap to be met by government subsidy. With bus contracts for specific regions, the regulation focuses on preventing spatial competition. This leads to cases where feasible unsubsidised additional services, such as youth services at night or in counter-peak directions, are disallowed.

The complexity of the legislation, with definitions and cross-references between vehicles, licences, accreditation, accredited operators and public passenger services, can make it difficult to determine what is allowed or not—in particular, who can provide what type of services where, and whether a fare can be charged or not.

Under NSW bus contracts, the payment of subsidies for bus services based on the agreed kilometres run also gives rise to barriers. The nature of flexible transport makes it more difficult for Government to know the exact amount of subsidy *ex ante* if subsidy is on a kilometre run basis as, by definition, the kilometre run by a flexible service is not fixed in advance. It is also more difficult to monitor kilometres provided and reimburse operators *ex post*.

In NSW, the network planning function is largely determined by the regulator and funder, Transport NSW, using published planning guidelines. The planning guidelines for metropolitan bus contract regions (NSW Ministry of Transport, 2006) and for outer metropolitan bus contract regions (NSW Transport & Infrastructure, 2009) both identify a potential role for flexible transport services but provide no guidance. The process for making network changes can prevent a quick response by bus operators to emerging new demand. There is also a concern, expressed by more than one stakeholder, that government network planners support a 'consistent' public transport offer in the belief that it is easier to have services that look the same and are easier to communicate to the travelling public. This is further discussed in Section 5.2.

Taxi operators wanting to operate more flexibly are equally frustrated by the legislation that specifies trips can only originate or finish within the licensed area of the taxi. The cost of the taxi licence is related to its earning capacity and potential. In practice, this is more of a barrier in areas outside the metropolitan areas of Sydney where the licensed area is often spatially more compact.

4.2. Funding Issues, Fares and Costs to Users

Stakeholders identified a set of barriers related to the economics of flexible transport services including funding of services, subsidy, fares and costs to users relative to alternatives.

Funding. Many stakeholders identified the overall level of funding as a barrier to more flexible transport. There is a small pot of pilot or seed funding available to support the development and trial of innovative services. However, it can be difficult for services to become viable and self-sustaining when the initial seed funding runs out. The NSW Government's Community Transport programme for the transport disadvantaged is negligible, although in addition to the joint federal–state funded Community Transport programme for older and frail clients.

The subsidy mechanism for regular bus services in NSW is largely determined by the kilometres operated. It is a significant barrier that flexible services are seen as potentially increasing the subsidy bill and that this bill would no longer be predictable with certainty. Although the conventional bus service contracts include a provision for 'community kilometres' that were designed to allow community groups to access these services at approximately marginal cost, this has not been implemented, due to lack of funding and process guidelines.

Operator costs. The cost of flexible transport services can be less or more than conventional services. Bus operating costs are driven by the labour costs of the drivers and the distances travelled by the vehicle. Flexible services may have higher operational costs than conventional bus services if they travel further by deviating from a straight route. However, compared to the running of empty buses, flexible services can save kilometre-based costs by not operating unless there is a passenger, even if the labour cost is still incurred. The evidence in NSW suggests that it is bus operators who have initiated flexible services in order to reduce operating costs, seeing the inefficiency of operating empty buses.

There is evidence from Australian cities (Transport Planning & Management, 2008) and Europe (Commission for Integrated Transport, 2008) that economies of scale can reduce costs of operation for on-demand flexible services when operations cover a larger spatial area. The rationale is this increases the potential patronage, vehicle utilisation and the opportunities for increasing average loadings. In addition, as the spatial area covered by flexible transport increases, the economics of using information technology in the form of scheduling software becomes more advantageous. Scheduling software is often used in the taxi industry and its use more generally would encourage the breakdown of barriers between the modes.

This economies of scale argument suggests an amalgamation of small operators or joint service provision across several LGAs could reduce costs. In Sydney, there are over 40 LGAs. For community transport, the LGA boundary is used to define the catchment area for clients but community transport services do provide transport beyond the boundaries of their own LGA. However, local councils currently providing support to community transport operators through services such as free rent, information technology and human resources services do so for their own residents and councils may not want to fund or contribute to services operating partly outside their boundary.

All stakeholders identified the current regime of bus operator incentives in the metropolitan and outer metropolitan bus contracts as a barrier to the introduction of flexible transport. For operators, there is no incentive to grow kilometres and only a weak incentive to grow patronage, and no incentive to try something new unless separate funding is given by the Government. Non-operator stakeholders argued the lack of incentive to make changes was a significant barrier.

User costs. There is a perception that flexible services mean that passengers receive a taxi-like service at public transport fares. This perception characterises a number of the barriers under the theme of funding and fares.

From the passenger point of view, the question of what fare should be paid is a contentious issue. On the one hand, a higher quality service could be argued to be worth the imposition of a premium over the normal public transport fare and yet flexible transport is a form of public transport suggesting that a public transport fare would be appropriate. This is a difficult issue that has taxed flexible transport operators worldwide. In most cases, a premium fare is charged. For the Telebus service in Melbourne, passengers have the option of a door-to-door service with a premium fare or service from a bus stop at the regular bus fare.

Whilst a form of public transport, taxis operate as a commercial business with higher fares than bus-based public transport. For instance, Sydney taxi fares are (from 1 July 2011) $3.40 flagfall plus $2.06 per km and a $2.30 booking fee, while adult bus fares under the MyZone fare reform introduced in 2010 in Sydney are $2.00 for 1–2 sections (up to 3.2 km), $3.30 for 3–5 sections (up to 8 km) and a maximum of $4.30 per trip, even for an hour-long trip over 40 km. Although people on low income, often with no car or licence, are one of the markets for taxis due to their lack of alternative transport options, the unsubsidised cost of taxis is a big barrier to their use.

Potential involvement of taxis in providing flexible services would mean finding a way of successfully implementing shared or collective taxi services that are used by passengers not already using taxis so as not to undermine taxis' existing passenger base. For passengers, the level of fares for single use of taxis is high (relative to public transport fares) and the current fare rules for multiple occupancy of a taxi do not significantly reduce the fare to the individual. Under multiple hiring of a taxi, each user pays 75 per cent of the fare, and so the driver can earn a higher fare if destinations are close as compared to sharing a taxi where one person pays the fare. Overall, there is little financial incentive for taxis to be involved in innovative schemes. The maximum fares taxis can charge are set, but taxis can offer lower fares. Taxis could provide subsidised trips, but the question then is who pays what? Shared taxi schemes require a coordinator, or someone to act as the 'hirer' of the taxi, as Willoughby Council does for its subsidised Council Cab scheme in northern Sydney.

The community transport sector was identified by many stakeholders as the most probable operators of flexible transport. However, community transport operators are currently predominantly funded and are contracted for the transport of older and frail clients who meet specific eligibility criteria. Their services are targeted at people living in the community, who would otherwise be at risk of premature or inappropriate long-term residential care. The eligibility criteria are subject to interpretation by individual operators leading to inconsistency between areas. Funding to meet the needs of other transport disadvantaged members of the community is allocated to the community transport sector but the interpretation of eligibility can also vary. Although the amount is currently small, the new state Government elected in March 2011 has identified greater funds for serving the transport disadvantaged will be available in the future.

Being outside the Passenger Transport Act, community transport services are not allowed to charge fares, but instead ask for 'donations' and are not allowed to refuse service to people due to inability to pay. Despite this, community transport services are

advertised with a 'fare'. As charges are set by each individual community transport provider, there is no state-wide common pricing structure for community transport charges, which were identified as expensive by a number of stakeholders. Being outside the Passenger Transport Act 1990, concession fares such as the $2.50 daily Pensioner Excursion Ticket are not valid for community transport services.

4.3. Fleet and Vehicle Issues

Fleet and vehicle issues were also identified as an operational barrier to greater provision of flexible services. This includes the nature of the existing fleet of vehicles, accessible vehicles, vehicle utilisation and capacity, and vehicle brokerage.

The fleet profile for conventional bus services in urban areas is driven by the need to provide school services and peak period route services. The funding mechanism for bus operation in NSW provides an incentive to acquire a 'full-size' bus to meet these demands, where a full-size bus can be 12 m long and seat 45 passengers. This means that in the off-peak period, it is 'full-size' vehicles that are available to meet additional demand and these are most suited to providing the conventional fixed route services. Stakeholders operating in this conventional market identified that costs were not significantly lower when operating smaller buses although smaller buses can use roads and penetrate areas not available to the 'full-size' vehicle.

Stakeholders from all sectors identified significant spare capacity in all vehicles during the off-peak period: this included buses, taxis and community transport. The absence of a recognised process to provide effective brokerage of vehicles is a barrier to greater use of this pool of vehicles and spare capacity. Aligned to this is the way in which many community groups and services campaign for funds for their own vehicle that, once acquired, may be unused for significant periods. Difficulties in encouraging greater use of the existing fleet include determining an appropriate cost to charge out vehicles to other users, ownership and insurance issues, the provision of drivers, as well as a need for information on where and what vehicles are available. Technology, including Internet-based brokerage services such as SmartLink for the Blue Mountains on the fringe of Sydney, can help overcome some of these barriers.

The greater use of the vehicle fleet by brokerage also raises driver issues. There are different standards of driver accreditation for bus drivers, taxi drivers and community transport. Drivers also have different training. Community transport drivers are highly trained in the manual handling of passengers and assisting passengers, and there is a high, although decreasing, reliance on volunteer drivers.

The accessibility of vehicles is an issue in vehicle sharing, and greater flexibility of use of vehicles. The proportion of accessible buses in the total fleet is increasing due to the Standards for Accessible Public Transport under the Commonwealth Disability Discrimination Act requirements and not all existing vehicles are suitable for more flexible services open to the general public. Community transport operators use accessible vehicles for their services, due to the needs of their clients, and the HACC funding requirement that vehicles purchased over eight seats are accessible for wheelchairs. However, the community transport sector perspective that community transport vehicles are not subject to the Standards for Accessible Public Transport as they are not providing services to the general public is an untested area of the law.

4.4. Attitudes, Culture, Perceptions and Relationships between Stakeholders

The discussions with stakeholders revealed a complex set of barriers in the form of differences in attitudes, culture, perceptions and expectations amongst stakeholders leading to often conflicting approaches to public transport.

Operators. There is a perception that bus public transport is focused on scheduled routes because of the certainty for both operators and government as the funder. Flexible services have less certainty in the relationship between funders and operators. This is reinforced by operators who are focused on the provision of scheduled and school services as the mainstay of their business. The lower certainty in outcomes, for both operator and funder, seems to be based on an asymmetry of trust leading to both parties being insecure about the financial outcome.

Mistrust also features as a barrier to greater coordination between the different modes with many conventional bus operators and community transport operators seeing each other as a threat to their own market. Similarly, where flexible bus services are in operation, both taxi operators and community transport felt its presence a threat, at least initially. Whilst similar distrust has existed between taxi operators and community transport operators, their peak bodies have worked hard to reduce this barrier by developing a model contract for use of taxis for community transport, training and education for both taxi drivers and clients, and 'opt-in' choices for taxi drivers for community transport work.

The unique structure of the taxi industry with taxi network owners, taxi licence owners, owner-operators and bailee drivers may influence attitudes to customer service and quality. Licence owners see bailee drivers, who pay a fee for the right to operate the taxi for a shift, as their clients, rather than the users of taxis themselves.

The philosophy of funding for community transport, particularly in its restriction to older and frail clients, is that community transport is a community care programme, rather than a transport programme. This is reflected in the inability to refuse service if a client does not make a donation or in the need to act commercially.

Local government. Whilst the institutional framework for bus services regulation lies with state government, a number of stakeholders pointed to the unevenness of support from local government. Local government has an important role and good relationships are critical to partnerships working. Local government provides many services at the local level (for example, roads and footpaths) and approves bus use of local roads. Some local governments are proactive in seeking good working relationships with transport operators involving them in, for example, new residential development design to create an understanding of the infrastructure needs of public transport. In areas with less consultation, operators identified the physical layout of new developments as being a potential barrier to effective bus provision. Some local governments are more supportive of flexible transport, seeing it as part of their commitment to community services, while others see no role for local government in public transport. Proactive local government support for flexible transport can include financial support, relocation of bus stops, support in marketing and promotion, as well as support for Transport Working Groups that draw multiple stakeholders in an area together, including the state government Regional Transport Coordinator, bus operators, taxis, community transport, local government and community representatives, to ensure greater coordination of service provision.

Further barriers to implementation were identified through the lack of coordination between all levels of government from Commonwealth, state to local government, and between agencies at the same level of government as highlighted within NSW with two different government regulators defining a 'bus' differently.

Users. On the demand side, a number of attitudinal and cultural barriers to flexible services were identified by stakeholders. Policymakers believe that the community expects conventional route services because it gives a certainty of service, even if they do not want to use it. Perhaps more importantly, several stakeholders identified that passengers want 'normal' services as opposed to 'special' services with community transport identified as being for disadvantaged or disabled users and 'shopper-hopper' services seen as a loss of independence and dignity in accessing the wider conventional network for a greater variety of activities. Stakeholders also identified a lack of understanding of sharing any mode of transport other than the conventional bus. Shared taxis do exist but users have little experience of negotiating shared rides, and there is a culture of being unwilling to share.

Successful flexible services require good relationships between the service provider and a wide range of potential users such as local clubs, community groups, and venues such as clubs, pubs and youth centres. Regular group bookings, such as picking up the members of a war widows' group from their homes, taking them to a weekly meeting at a club then returning them home, can provide the foundation for a flexible service. In many cases, good relationships and an awareness of an available flexible transport opportunity could avoid the need for individual groups or clubs to buy their own bus.

An overarching barrier identified by many stakeholders was the time required to change the public's travel behaviour. The travelling public is not used to innovative services and it takes time to build both acceptance and patronage, requiring the provision of information and education, as discussed in the next section.

4.5. Information, Education and Promotion

Information as a barrier includes information and awareness by both operators and the public of the opportunities offered by flexible transport. Stakeholders identified that there was a need to have better data to understand what flexible transport could offer over and above, or instead of, what is currently being provided by road-based public transport. Alongside this, operators are comfortable with their core business, whether buses, taxis or community transport, but are unfamiliar with what is required to run more flexible services.

A lack of understanding by passengers was also identified as a barrier. For the flexible bus services that are in operation, passengers and staff have needed education to understand that the service is not a taxi. Reaching potential passengers has also been an issue for flexible transport in operation since the more flexible the service, the less presence it has in the community and the more marketing becomes a necessity to generate patronage. In line with experience outside Australia, the operators of flexible services identified word of mouth as the most effective form of advertising. A number of stakeholders also identified the travelling public's lack of knowledge about travel options and the mechanics of public transport use, such as timetables and ticketing, as a barrier to more public transport use in general and flexible transport services in particular.

5. Discussion on Overcoming Barriers

Barriers to the implementation of flexible services in low-density urban areas are varied and many of these are inter-related. This section recognises that many barriers are not insurmountable as indicated by the presence of those flexible services in existence. The purpose of this section is to identify changes that would facilitate more widespread flexible transport services as part of the public transport mix in urban areas. Through necessity, the detail relates to the specific circumstances of the case study. However, the discussion identifies key areas where differences between jurisdictions may already exist and require different resolution to successfully implement flexible transport services.

5.1. Overcoming Policy, Legislation and Regulation Barriers

NSW reviewed bus service provision in 2004 (Unsworth, 2004) and the contracts issued in 2005 for conventional scheduled routes reflected significant changes to the funding and planning of services. However, there was no change to the Passenger Transport Act that makes an artificial distinction between modes rather than seeing vehicles as a means of providing a public transport service. The contrived distinction between modes is linked to the subsidy of regular bus services by the government. Changing legislation would need to recognise that different road-based modes have comparative advantages in serving different passenger needs and make provision for different kinds of route operation, including flexibly delivered services.

Institutional constraints to the introduction of flexible transport services have not been uncommon. In the UK, both pre- and post-deregulation the legislative framework defined a bus service in such a way that deviations from a scheduled route made flexible transport services ineligible as a 'bus' and thus unable to unlock bus subsidies. Where institutional constraints are an issue, they will be specific and will need specific amendments. The changes required in NSW are illustrative of this point, as many of the institutional barriers would be overcome by:

- Explicitly recognising flexible transport services as a road passenger transport service in the legislation.
- Regulating the operator of a road passenger transport service independently from the type of vehicle used. Operator accreditation for safety would still apply to all operators of a road passenger transport service.
- Widening the types of vehicles that can operate as road-based passenger transport to include conventional bus, minibus, hire cars and smaller, taxi-sized vehicles. In this re-specification, it is important to ensure that relevant safety regulations are in place for the vehicle type.
- Clearly specifying the types of route that can be operated as road passenger transport to include more flexibly delivered transport services including the operation of a service without the need for a service to require a bus stop.
- Amending service planning guidelines to explicitly recognise flexible transport services and the role that these services may play in network design and to provide more detailed guidance on implementation.
- Allowing the possibility for operators to provide a service without government subsidy. This could be upon application with the presumption that it would be approved, unless there is a compelling reason to refuse. The reasons for refusal

might be, for example, that the proposed service competes with an existing route and would abstract passengers thus increasing net government subsidy. This provision would allow, for example, youth services to provide safe journeys home, or community transport to provide targeted services where none exist.

5.2. Overcoming Funding and Fares Barriers

Funding is related to fleet use issues. The current funding of both routes and vehicles does not encourage operators of conventional bus services to examine whether alternative forms of delivery might be more efficient. More targeted incentives to consider flexible transport services as part of the public transport mix might be necessary to provide a step change in thinking about alternative delivery strategies leading to more mixed size fleets. In the case of taxi-sized vehicles operating more like buses, there are issues about separate payments of fares by individuals. For shared taxis, the rules for multiple hirings could make the fare system closer to public transport fares. For taxi-sized vehicles operating to a fixed timetable and route, the ability to charge separate fares is crucial.

The collection of funding issues, as with institutional barriers, are likely to have a specific jurisdiction orientation. However, whilst the required 'package' of changes might be jurisdiction specific, the issues are common to many situations where flexible transport services have been shown to be difficult to introduce. In NSW, many of the funding and fares issues could be overcome by:

- Recognising that whilst flexibly delivered services are more expensive to provide per passenger than heavily loaded mass transit, flexible transport services that only operate when passengers demand journeys are likely to be cheaper per passenger than conventional buses with few or no passengers. This is a common problem in funding regimes where conventional bus services are the norm and provide such services in low-density areas.
- Increasing incentives for innovation for operators in their contracts. The renewal of the current seven-year NSW metropolitan bus contracts in 2012 provides an opportunity to increase the incentives for operators to be innovative and increase patronage.
- Recognising and providing the opportunity for the exploitation of economies of scale in the provision of flexible transport operations to reduce costs.
- Recognising long development times in funding new services. Flexible services are less visible to the travelling public and European experience suggests that the demand build up can take up to seven years to achieve (Commission for Integrated Transport, 2008).
- Ensuring fares reflect the level of service provided. The fare paid by the passenger is critical to the level of take-up of more flexible services. For those flexible services that are truly part of the public transport mix, the normal public transport per km fare should apply with a premium add-on if the service deviates from the route for pick-up or delivery to the door (as opposed to a bus stop). The introduction of integrated ticketing with an electronic SmartCard in the future will help if this relates to all public transport services.

5.3. Overcoming Fleet and Vehicle Barriers

While there are clearly many transport vehicles available in urban areas, the fleet mix can be a significant barrier to the implementation of flexible transport services. As identified above, the vehicle availability for conventional bus services in NSW is driven by the requirement for large vehicles for school services. In contrast, the low-density nature of much of the operating territory means that smaller vehicles on timetabled routes and smaller vehicles providing more flexible services might be a better way to match demand and supply for some parts of the territory or times of day. In many countries, the use of different vehicles by time of day or potential loading has been achieved by use of brokerage of vehicles between organisations. Brokerage makes good use of existing capacity to exploit the economies of scale derived from using existing capacity more intensively and reducing the kilometre cost (by reducing the fixed cost element). Outside Australia, the provision of pump-priming funding to set up brokerage agencies has been a successful approach.

Changes to address fleet and vehicle issues in NSW could include:

- Writing the sharing and brokerage of government-funded vehicles into contracts with operators to raise the profile of brokerage.
- Developing guidelines on sharing of government-funded vehicles including charge-out rates to provide flexible transport, and increasing awareness of the existing utilisation of spare capacity policy for community transport.
- Ensuring funding of new vehicles achieves an appropriate fleet mix.
- Encouraging greater flexibility in use of drivers across vehicles.

5.4. Overcoming Attitudes and Perceptions Barriers

There is a significant literature that identifies that successful implementation of flexible transport services requires a change in attitude and perception by both operators and passengers, and better relationships between different types of operators. Current attitudes of operators reflect the specific regulatory, contractual and funding environments in which they work. Attitudes also reflect the level of information and awareness about flexible transport services and interpretation of the current regulatory environment.

For flexible transport services to be successful, it will also require a change in attitude and perception by potential passengers. Currently, community transport services for the elderly and infirm are the only flexible services that the general public are aware of. Many potential passengers do not want ‘special’ services but services that are open to all. Having flexible transport services as part of the public transport mix will require an attitude shift—one that has been shown to be successful in other jurisdictions by effective marketing with a focus on the outcome (provision of the service) rather than a particular vehicle or mode.

Although identified by the NSW case study, the following possible changes to overcome attitudes and perceptions, which are also related to information and awareness, are not jurisdiction specific and are likely to be needed to promote wider implementation of flexible transport services in urban areas:

- Developing a manual or case studies on flexible transport services to assist operators and other stakeholders understand how to implement and benefit from flexible transport services.

- Allowing for marketing and education costs when developing a new service.
- Ensuring that public transport information sources routinely identify the presence of flexible transport services where they exist and explain how they are used (such as eligibility, cost, booking). For geo-referenced systems this can be problematic since a flexible route will not, by definition, have a 'route' to be referenced, although geocoding of flexible services can be done within a 'shaded roam zone' type mapping along a core route or corridor.
- Developing relationships between stakeholders.
- Educating users on shared services to encourage a cultural shift in sharing.

5.5. Overcoming Information and Education Barriers

This research identified a lack of knowledge about flexible transport services amongst stakeholders in general. Operators, local government and state government all need to be more aware of the potential of flexible transport and especially in areas of low urban density.

Changes to overcome information and education barriers, which are closely related to attitudinal and cultural barriers, include:

- Compiling data on the opportunities offered by flexible transport, to increase awareness amongst stakeholders. These are likely to be international, drawing on the experience of Europe and the USA.
- Providing evidence as to the effectiveness of flexible services as part of the public transport mix. Information on current ridership of road-based public transport is available but the scale of the potential need for flexible transport services as part of the public transport mix is inextricably linked with the level of provision of conventional services.
- Providing information on situations in which flexible services would be appropriate and cost effective for both operators and peak bodies representing users.
- Synthesising best practice and transferring good ideas from similar jurisdictions such as disseminating the use (albeit limited) of flexible transport services in Australian cities.
- Formalising the operation and membership of area-based stakeholder groups to allow the potential of flexible services to be explored alongside other initiatives in a given geographical area. This would help to break down the barriers between the different levels of government and their respective responsibilities in the provision of local services.

6. Conclusions

Flexible transport services are not used as widely in Australian cities as they are in other countries including the UK and Europe, despite their potential to increase accessibility and improve social inclusion where conventional public transport services are not viable. There are very few flexible transport services in operation open to the general public.

By consulting with 19 stakeholders, the research identified barriers to the implementation of flexible transport services in metropolitan Sydney in NSW, as representative of a low-density urban environment. Whilst the set of barriers is clearly jurisdiction specific, many of the individual barriers can be seen to apply to different

jurisdictions. As might be expected, many of the barriers are inter-related, with operator attitudes and perceptions influenced by the regulatory environment and funding, and passenger attitudes also influenced by the current environment and experience. Greater use of flexible transport services requires change to the policy context with greater recognition of the role of flexible transport services, which would then be reflected in appropriate legislation and funding. The potential to re-organise the planning and delivery of services to better meet transport needs could be investigated through a properly resourced trial in a large spatial area such as a bus contract region. Regulatory change is important, but, in the absence of regulatory change, increased information and education of both operators and the public could show how flexible transport services can be provided within the current institutional framework to better meet public transport needs in urban areas and provide transport more efficiently.

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