Flexible Community and Public Transport Services

A paper prepared from material gathered at a meeting of Community Transport operators held on the 1st of June 2005

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Report from the Flexible Transport Summit

This short report was compiled from information presented and ensuing discussions at a “shuttle summit” held at Drummoyne Community Centre on the 1st of June 2005. The summit involved representatives from twelve community transport groups and one commercial bus company.

The purpose of the summit was to discuss more efficient ways of providing community transport services and to develop an understanding of how bus and taxi operators could become further involved in flexible transport provision.

There is a common view that community transport services can be divided into two types – group transport and individual transport. Traditionally group transport is provided in buses and include shopping services, outings and day care transport. On the other hand individual transport is provided in cars and is generally used to transport people to appointments, mainly for medical reasons.

However, in recent years this distinction has become blurred as some groups have moved towards providing transport to appointments in minibuses and, on the other hand, services such as individual shopping have become more common.

The same thing is slowly happening in the bus and taxi industries. With innovations such as the “Council Cab” concept pioneered in Brisbane, group taxi services are finding a place in the specialised transport market. In other areas such as Mackay, the taxi company, which also holds the bus contract, is using share-ride taxi services as a replacement for route bus services in areas of low population density and where there has traditionally been low patronage.

In the bus industry, in some areas, bus services are becoming more personalised with buses deviating from set routes to pick up and drop off people close to their homes or other destinations. Services such as the Wiltshire Wigglybus in the UK, which deviates from its route on demand, are the marker for this type of development.

In other areas booking and scheduling software has been developed that can automatically organise and schedule “virtual bus routes” entirely defined by where passengers want to travel to and from. Such services currently operate in parts of the UK, France, Finland, Italy and Sweden. The same type of software can also deliver share ride taxi services such as the “Taxi Tub” services in France.

As community transport groups struggle to keep up with a burgeoning demand for services, particularly individual transport services, we have reached a time when there is an urgent need to discover new ways to deliver services that are more efficient but still responsive to passenger need. Some of the models that have been developed over the past 10 years can provide some clues as to how community transport might be delivered in the future.

Origin and destination relationship

In every transport service there is a relationship between the service origin, the service pick-up and drop-off points and the service destination. Generally services can be divided in the following way:

Many to one services - a number of passengers are picked up and taken to one destination or reverse. Community transport shopping services are like this.
Many to many services - this is what a taxi or individual transport service offers. There are multiple pick-up and drop-off points.

Few to few - Origins are limited to a number of pre-specified points and passengers are taken to a limited number of other specified points in area. Route services come under this category.
Many to few - These services have multiple origins with passengers taken to a limited number of destinations (and reverse) Baxter's Flexi-bus is an example of this. Passengers are picked up from their homes and taken to a choice of three destinations.

The key point about this is that the cost of a service can generally be affected by the relationship between the origin and destinations and the pick-up and drop-off points in between.

The more flexible a service is (more pick-up points and drop-off points) the more it will tend to cost to provide. Taxi services for example (many pick-up and drop off points) are expensive to provide, per trip, compared to route bus services (few fixed pick-up and drop-off points).

Similarly, individual transport services (many to many) are inherently more expensive than shopping services (many to one). The difference is often that with less flexible services a greater number of passengers can be carried: the more flexible a service is the fewer passengers can be carried. The cost per trip on flexible services, therefore tends to be greater.

However, in the Community Transport sector many passengers require service flexibility if they are to be able to use the services at all. The challenge is therefore to design services that are:

1. usable buy the passenger target group; and
2. are of reasonable cost to run.

Most Community Transport groups offer a limited range of services which typically include group shopping, outings, day care transport and individual transport. The range of services offered may, however, need to grow if a balance between usability and cost is to be struck.

The passenger pick-up and drop-off point

Before describing different service types it is important to make a distinction between the different types of pick-up and drop-off points as these affect the quality of the services.

Passenger pick-up and drop-off points fall into four categories:

- kerb to kerb;
- door-to-door;
- collection points; and
- bus stops.

Kerb-to-kerb services are generally provided by taxis, hire-cars and some Community Transport services. Their key feature is that the passenger is picked up on the street (at the kerb) and
dropped on the street. Apart from some assistance with getting in and out of the vehicle and with baggage little assistance is generally provided.

Door-to-door services go beyond kerb-to-kerb in that the passenger is provided with assistance from their door and into their destination. On occasions the service may need to go beyond this when dealing with passengers with dementia or who have very limited mobility.

Collection points are pre-arranged points where passengers board or alight a service. They can be at a local landmark or anywhere where it is safe for the service vehicle to stop. Collection points may be fixed for a given service or identified in relation to the needs of individual passengers.

Bus stops are a type of collection point except that they are absolutely fixed and generally, but not always, have shelter, seating, signage and information. Bus stops also usually have kerbing which makes the use of low floor and kneeling buses possible.

**Transport service types**

In mainstream bus transport most services run on a fixed route. Buses run along pre-defined routes stopping at designated bus stops along the way. Each bus stop is a “timing point” (the point at which the bus is expected to arrive at a certain time). These timing points are recorded and produced as service schedules or timetables. In most cases the buses stop at every bus stop on the route although at peak hours it is common for some buses to run “express”, that is they will miss some stops in order to speed up the journey for passengers who travel the longest distances.

A variation of this is the “hail and ride” service where the bus will stop anywhere along certain sections of the route, where it is safe to do so, when hailed by a passenger. The bus will also drop off passengers in the same areas on request. This improves the quality of the service especially for less mobile passengers and passengers who are carrying shopping or baggage. These services are, however, still essentially fixed route and do not cater well for passengers that do not live close to the route.

In past years in New South Wales and Queensland there have been regulations that require that route services pass within a certain distance of a proportion of the population (for example, a service or set of service may be required to run within 400 metres of 85% of the population discounting areas where there is high car ownership or alternative services such as a railway line). This has lead to the development of a network of convoluted routes, unpopular with many passengers.

An alternative to this approach is to develop a network of more direct routes which are flexible in terms of being able to deviate on demand. The routes may not take an absolutely direct route but they tend be more efficient and less time-consuming than convoluted fixed routes.

Such services have many of the characteristics of community transport services – they are demand responsive and designed with the passengers’ interests in mind.

Two significant service models of this type involve the bus deviating from a set route to pick up or drop off passengers. These services can be divided into “point deviation” services and “route deviation” services.

**Point deviation**

With point deviation the bus travels along a pre-defined a corridor, possibly based on a major road. The corridor may be defined as any place within a certain distance or time from the main route. For example, the service may deviate up to two blocks away from the main route or two minutes drive from the main route. Alternatively the corridor may be defined as a string of adjacent suburbs or localities (providing the suburb or locality areas are not to big). In practice the definition of the corridor will take into account operational realities such as the road layout and service issues such as the maximum length of journey on any one trip and the amount of flexibility there can be in service timings.
Bookings are taken from passengers within the corridor who can travel to destinations that are also within the corridor. Point deviation services many not run along the core route at all depending on the bookings received.

One of the key characteristics of such a service is that all passengers, apart from those that join the service at either end of the run, must book in advance. These bookings define the shape of the route which will be different each time it runs.

Low patronage services can be scheduled manually but once they become relatively busy automated scheduling may become necessary.

An example of such a service is the Berowra – St Ives Shuttle Service operated by Hornsby/Kuring-gai Community Transport. The service operates along a corridor which starts at Berowra in the north, passes through the urban centre of Hornsby and finishes at the suburb of St Ives to the south. Passengers who live along the corridor can book the service which runs three times per day. This means that a passenger who makes an outward journey on the first service of the day has a choice of two services to get back. The major destinations on the service are in the middle of the corridor in Hornsby and include a significant hospital, medical specialists rooms, a major shopping centre and Council and community based facilities. On each leg the route is different depending on where people want to go.

Such services are not necessarily door-to-door. They can instead involve picking up and setting down passengers at pre-arranged collection points such as a post office or other landmark. The intention is, however, the same — to reduce the walking distance that the passenger has to undertake to join the service.

Using collection points instead of calling at residential addresses may also speed up the service as the bus will not have to navigate down narrow residential street or spend time turning in cul-de-sacs. A number of passengers may also join or alight from a service at one collection point this making the service quicker and more efficient. Such services may not be suitable for very dependent passengers.

The key characteristics of point deviation services are:

- they operate along a corridor from a fixed point to a fixed point but picking up and dropping passengers anywhere in between;
- between the two points the service is almost totally flexible as long as it can arrive at the end point on time;
- passengers need to book ahead although sometimes bookings “on the fly” are permitted;
- the service can be door-to-door or use collection points; and
- the corridor will usually have passenger generators either at the end of the corridor or somewhere in between.
Route deviation

These services are similar to point deviation services in that the bus will deviate from a core route to pick up or drop off passengers. However there is one very important difference - along the core route are timing points (which could be bus stops). The bus is required to stop at all the timing points at a pre-defined time as on a normal bus route. This means that if the bus deviates from the route it must return to the route so that it can call at the next timing point. This is because passengers can join the service or alight at timing points without booking ahead. Route deviation services therefore have some of the characteristics of normal route services and some of point deviation services. When changing a normal route service to a point deviation service a good intermediate step may be to move to route deviation first.

A good example of a route deviation service is the Telebus, operated by the Invicta Bus Company in Lilydale, Victoria. This service (there are actually nine of them) starts at the local railway station and operates within a pre-defined area. Within the area are timing points at which people can join and alight from the service as in a normal timetabled service. In addition passengers who join the service at the station can ask to be dropped off at any point in the service area. Passengers can also ring the bus company and arrange to be picked up from any point in the area. The system is coordinated by a staff member at the bus depot who records requests on a white board. After each bus has dropped its passengers at the railway station the driver rings the depot and is given a new list of pick ups for the forthcoming leg of the service.

A rural example of route deviation is the Wiltshire Wigglybus which operates on a set route in rural Wiltshire but which will deviate or “wiggle” to pick up or drop off passengers in outlying villages or hamlets. Such pick-ups have to be booked beforehand.

The key characteristics of route deviation services are:

- they operate along a route with a number of timing points at which the bus will call;
- passengers who board at timing points need not book;
- the bus will deviate from the route to pick passengers up from their homes or other pre-arranged collection point;
- passengers who are picked up from home or other collection point that is not a timing point must book in advance; and
- if the bus deviates from its core route it needs to rejoin the route before or at the next scheduled timing point.
Area based flexible services
Another form of flexible group transport service is based on service areas rather than on corridors. In other words they run on an area basis rather than on a linear basis.

There are three main types:
1. services without timing points - free routes;
2. services with timing points - area shuttles; and
3. the most familiar to Community Transport groups - services with one or more fixed destinations.

Free routes
Free routes operate in a pre-defined area within which a transport operator may allocate one or more vehicles. The “routes” (they are not routes in the accepted sense of the word), are entirely defined by where passengers want to travel from and to. As the routes are very flexible they are usually provided using low capacity vehicles because the scheduling becomes very complex when many passengers are involved.

The more vehicles that operate in an area the more efficient the service will be. With one vehicle it can be difficult, except within a very confined area, to efficiently travel from a drop-off to the next pick-up without incurring significant amounts of empty running. Even the taxi system with thousands of taxis available generates a great deal of empty running. Most individual transport, as provided by community transport groups, is of this type. Such systems are of very good quality from a passenger's viewpoint but they are generally very expensive to run and require heavy subsidy. In urban areas community transport drivers are unlikely to provide more than ten trips a day (compared to 30/40 trips a day on a point deviation service). Given their cost and quality these services should be considered the “Rolls Royce” of community transport services, however they are very widely provided in urban areas. Because of their high cost of production, such services tend to absorb a large proportion of a typical Community Transport group's budget.
The key characteristics of free routes are:

- they take passengers to wherever they need to go to (within limits set by the operator);
- they operate door to door;
- they are generally of high quality and are suitable for passengers with high care needs;
- they use low-capacity vehicles;
- they tend to carry a low number of passengers (usually 1-3) and have low productivity if paid staff are used;
- they are often run by using volunteer drivers in fringe urban and rural areas; and
- they are expensive to supply.

Area shuttles

Area shuttles on the other hand, while being akin to free routes, can be run much more efficiently. They may also be more efficient than other service types such as point deviation services. The EasyRider service in North Sydney, for example, provides about 50 passenger trips a day using one vehicle and one driver. The same vehicle and driver would probably average about 20% of this figure if used on a free route basis.

The bus and driver are dedicated to the service all day. Due to the intensive nature of the service and the requirement that the driver can organise the scheduling and route design, paid staff are used. A small wheelchair accessible minibus is used on the service so that groups of passengers can be carried in order to maximise patronage. The small size of the bus also assists in picking up in narrow streets and generally allows the driver more flexibility than a larger bus would.

Area shuttles are able to be so productive because they operate within a relatively confined geographic area. They have key timing points at which they call at set times but otherwise travel when and where passengers want to go. Generally trips are booked ahead beforehand but there may be a limited ability to book passengers on the service “on the fly”. Passengers can pick up the service at the timing points without a booking.
In the EasyRider case the service operates in an area of high population density which covers just 10 square kilometres. Key timing points are located at two sets of apartments where there are relatively high concentrations of older people. The third timing point is the Neutral Bay shops where a number of commercial and Council services are based. This point is also on the main arterial road through the area, Military Road, along which a number of bus routes operate, a significant proportion of which are wheelchair accessible. The bus calls at these points at fixed times during the day but otherwise runs wherever passengers request within the service area. Passengers who wish to travel outside the area (to Royal North Shore Hospital for example), have to book on the normal individual transport, or free route, service.

The key characteristics of area shuttles are:

- they operate within a relatively confined area;
- they are operated with a dedicated small minibus and driver;
- they have a limited number of timing points at which passengers can pick up the service without booking ahead;
- passengers can travel to anywhere within the designated area; and
- trips to or from locations other than the timing points have to be booked ahead of time.

Fixed destinations

On these services there can be one destination or multiple destinations. The most common single destination area services are Community Transport shopping and day care services. Outings could also come into this category. These services can also serve multiple destinations as does the Baxter’s Flexi-bus service (two shopping centres and a hospital).

As with the free routes and area shuttles these services operate within a specific area. The destinations may not be within the area - a common feature of shopping services that may take passengers to a regional shopping centre.

In each case passengers either book ahead or are on a list of regular passengers in which case they ring the operator to let them know if they are not going to travel on a particular service.

Services are usually operated with higher capacity vehicles, normally with wheelchair access. Often the vehicle will do a dovetail or double run to maximise the number of passengers carried. This means that the bus will collect the first load of passengers from part of the pick up area and leave them at the destination. The driver will then go out and collect passengers from the remaining part of the pick up area and bring them in to the destination. Later on the service works in reverse with the first load of passengers being returned home before the second load.

These services tend to be the cheapest form of Community Transport to deliver as they are high volume and, depending on the service area, travel relatively short distances. They produce relatively high passenger kilometres, particularly in the case of outings.

A similar service has been operated by Baxter’s Bus Lines in western Sydney for a number of years now. The service uses a specially built midi-bus which has a low-floor and kneeling suspension. There are no steps in the front half of the bus at all and at the very front the bus has side facing tip-up seats which allow space for users of wheelchairs and walking frames.

The service runs door to door and picks up people from their homes, on request, and takes them to one of three destinations, two shopping/commercial areas and Westmead Hospital. At Parramatta passengers can link to the rail system at an Easy Access Station. The service is
open to anybody at a regular bus fare and operates every weekday. Many of its passengers are ex-users of Community Transport.

Circuit route

Circuit routes also operate within a defined area. The service starts and finishes at one point and travels in a loop or circuit around the area. The route may be fixed but could equally have route or point deviation.

In very small areas it may be possible to offer a reasonable level of service using one vehicle. In this case the time it takes to complete the circuit is very important. If a passenger wishes to travel to a destination in the direction from which the vehicle comes from they may have to travel almost right around the circuit to reach their destination. If the circuit is too long passengers will not want to do this.

The answer to this problem is to use two vehicles, one running in each direction. With this arrangement the furthest a passenger will have to travel is half way around the circuit.

On very long circuits more than one vehicle could be used in each direction in order to increase the service frequency.

Circuit routes have been used by Community Transport groups in the past but none have proved sustainable.
The key characteristics of circuit routes are:

- they usually operate within a relatively confined area;
- they can offer point or route deviation or be fixed route;
- they operate on a loop or circle within a given area; and
- if two buses operate on the service they normally operate in opposite direction to minimise passenger travel distances and times;

Shuttle services

Shuttle services can operate on fixed routes or can be flexible. The basic premise is that the service starts at a fixed point at a certain time and finishes at another fixed point, again at a certain time. This is repeated a number of times during the day with the service vehicle “shuttling” between the two points. Other timing points may be added between the service origin and the service destination. Most regular route bus services operate in this way. Shuttle services usually have a significant passenger generator either at the end or along the route. Sometimes they are used to link passenger generators or services together. Until recently the Area Health Service in Western Sydney used to contract a private bus company to operate a shuttle service between the major hospitals.

The advantage of a shuttle service is that the passengers have a choice of travel times throughout the day.

Within a Community Transport context there is the potential to use shuttle services that offer point deviation to replace expensive free route services (individual transport). Such a service is unlikely, however, to be successful unless there are key destinations such as a shopping centre or other commercial area, hospital or other passenger generator along the route. In the case of the Berowra – St Ives Shuttle the service goes through the regional centre of Hornsby which as a wide range of commercial and medical services. Two proposed services in the inner west of Sydney have similar characteristics. One will link two major hospitals and two areas where there are concentrations of medical specialists’ rooms across two local government areas. Another will run along a corridor which will allow people from Asian and Arabic backgrounds to access Asian and Arabic shops and other services.

The key characteristics of shuttle services are:

- they can be fixed or flexible routes;
- the run is repeated a number of times during the day;
- the service usually will have a significant passenger generator at the end(s) or along the route; and
- they are often used to link two key destinations or services together.
Choosing a service type

The key to choosing an optimal service type is to balance the needs of passengers with the cost of the service. Just about every passenger can manage to use an individual transport, however this is the most expensive service to operate. Providing a high proportion of individual transport services will reduce the overall service levels a group can provide.

Some passengers, however can use other types of services. Shopping, transport to day care and outings are common services, however they cannot take the place of individual transport. The challenge is to find alternative service types that will act as a substitute for individual transport. These services could be delivered directly by Community Transport groups or contracted from other operators. Alternatively bus operators could be provided with incentives to operate some services differently so that they can be used by passengers who currently use Community Transport services.

The choice of service type will depend on a variety of factors that can be broadly categorised as passenger factors and operational factors.

Table 1. Operational and passenger factors

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<td>Vehicle design and comfort levels</td>
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<td>Other personal considerations</td>
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<td>Service footprint</td>
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Passenger factors

Not all of the services described above will suit all passengers. In some cases individual transport will be the only appropriate option. However, the idea behind offering alternative, cheaper demand responsive services is to cater for relatively mobile passengers leaving the expensive individual transport service for those who have no other option. In some areas a group may well run individual transport in addition to other services, as happens with shopping services and outings at present.

Key issues that will have to be taken into consideration when assessing a passenger for a group demand responsive service include:

- Their degree of mobility. Will they need one-to-one assistance all of the time and will this be available on the proposed service?
- Other personal considerations. For example, does the passenger engage in challenging behaviour, do they have equipment that needs to travel with them (oxygen bottle, walking frame etc.) and can these be catered for on the service?
- Service timing. Will the service be able to get the passenger to where they need to go on time? If not, is there scope to change their appointment time or day? How critical is getting to their destination on time? It may be that an individual transport service may need to be used to get someone to an appointment but that they could use a group transport service for the return journey.
• Length of journey. One characteristic of individual transport is that generally it is a direct service with minimum travel times. Group services will always take longer as the service has to deviate to pick up other passengers. Can the passenger in question cope with probable journey lengths?

Operational factors

• Vehicle design and comfort levels. Group transport will require the use of a minibus of some sort. This may allow some wheelchair users access to the service but could compromise the comfort of other passengers. In some cases this will prevent them from using the service.

• Driver and assistants. Driving on a demand responsive service can be challenging and stressful, particularly if the driver has responsibility for scheduling as well. This job is best suited to an experienced paid driver and will be unsuitable for most volunteers. On some services it may be expedient to use an assistant who can help passengers on and off the bus and speed up the service.

• Productivity. The key purpose of using demand responsive group transport instead of individual transport is to increase service productivity. This means carrying more passengers per hour and achieving more trips per day than on individual transport services. A second purpose may be to maximise income which can be ploughed back into additional services. Measuring productivity of other flexible services against individual transport is important as a group demand responsive service that appears to be lightly patronised may still be more efficient than a one-to-one individual transport service.

• Patronage potential. New group demand responsive services may take a relatively long time to reach their potential. As long as they remain more efficient than individual transport they should be retained. Passengers can take a long time to get used to a new type of service and they should be given every chance to succeed before cancellation.

• Need for booking staff. One of the significant costs of an individual transport service is the time that is taken on bookings. Most of these services require the passenger to book every time they make a journey. This cost can be reduced where a passenger travels regularly, for example on a shopping service or other fixed destination service. Where a service uses timing points there is no booking time at all.

• Street access. Using buses can be problematical where they need to gain access to narrow streets or cul-de-sacs where there is limited room to turn. One answer to this may be to use collection points on through roads rather than offering a door-to-door service. This may be alright for some passengers but not others. The latter may need to be offered an individual transport service instead.

• Service footprint. This relates to both corridor and area based services. The service footprint is the area within which the service operates. On corridor services it is the extent to which the service will deviate from a core route. On area services it is the area within which passengers can be picked up or dropped off. The size of the service area, or width of a corridor, may have a number of different effects. If the area is too large journey times can become longer and more convoluted. This has an effect on the service quality, the volume of trips that can be achieved in a day and the cost of running the service. Using additional vehicles can offset this effect and can bring about significant efficiencies in terms of optimising vehicle use and managing the use of seating capacity. If an area is sparsely populated it may not be suitable for an area service but may be a good candidate for a corridor service.

Promoting new types of services

While more flexibility will advantage many passengers it should be borne in mind that such services are more difficult to understand and there is a danger that some people may not use them because they do not follow how they work.
One bus operator has suggested that one reason for introducing flexible route services rather than free roaming services is that “people do not understand free roaming and need a basic route”. This may be true in the case of general public transport passengers and seems to be the experience in the case of Mackay Taxi Transit. In Mackay the local taxi company tendered for and was awarded the local bus contract. The new operator proceeded to dispose of much of the bus fleet replacing low patronage, loss-making routes with an alternative door-to-door share-ride taxi service at the cost of a bus fare. Initial reaction from passengers was negative. Although the new service was of a higher quality yet the same price few people would use it. They complained that “…you have taken the bus away.” While the service is now proving successful, it has taken a long time to persuade the public to use it. On the other hand, the experience of the Easyrider service suggests that Community Transport passengers are more amenable to free route or area flexible service, perhaps because of their previous experience of share-ride individual transport services.

In any case it appears that new flexible services will require comprehensive promotion and explanation.

Community or Commercial?
The demand for Community Transport is burgeoning and the number of people who will be unable to access appropriate services is likely to grow unless more resources are found to address the problem. The important things are the quality, flexibility and appropriateness of the service for the passengers who will use it - not who provides it.

As the examples above show, there is sometimes a thin line between Community Transport and commercial transport operations (it is worth noting that much of the innovation in this field has come from small commercial operators rather than the government transport suppliers).

There may, therefore, be scope to use existing public transport resources in the community to provide community transport services. The opportunity to do this may be increased when the “community kilometres” to be provided by bus companies on contract to the Ministry of Transport, become available.

Services that could be considered include point or route deviation models and some shuttle services. The provision of such services, if operated using wheelchair accessible buses, could form part of the Accessible Transport Plans that bus contractors will be required to develop under the new Service Planning Guidelines for Sydney Bus Contractors.

There may be scope for Community Transport operators to subsidise such services if it can be demonstrated that people who currently qualify for programs such as HACC actually use the services.

In some cases the local bus or taxi company may be able to replace community buses and drivers on some services. Community Wheels shopping services operated by Baxter’s and the Council Cabs in Brisbane and on the Gold Coast are concrete examples of this.

Coordinating services
One way to coordinate flexible transport services is to introduce a cross-modal demand responsive transport system. Such systems are able to operate across most road based transport modes including flexible bus services, community transport, patient transport, taxis and minibus services. Bookings for all of these services are usually made through one point. This allows the system operators and the transport operators to maximise the use of their vehicles and drivers and ensures that passengers are directed to the operator that best suits their transport request and mobility needs.

The systems allow for pre-registration of both passengers and system vehicles and the booking and scheduling functions are fully automated to ensure the maximum use of service capacity.
Once services have been completed the system uses its sophisticated reporting abilities to provide in-depth service data and the reports necessary for billing and cross-billing between participants.

This type of system has the potential to revolutionise the delivery of community transport services by matching passengers to suitable vehicles and automatically scheduling those vehicles according to where passengers wish to travel to and from throughout the day. It will also relieve demand on community transport services by allocating passengers to flexible bus services and patient transport services when it is possible and appropriate.

The system could also be an effective way of using minibus, hire car and taxi sub-contractors to Community Transport groups in order to extend the supply of transport resources beyond what is currently available.

**Conclusion**

Over the years a number of new ways of delivering Community Transport services have been developed. Some of these have the potential to be used as a substitute for expensive individual transport services.

Experience has shown that some types of services can show productivity of up to five times that of traditional individual transport services.

New ways of providing services include modifications of traditional route services and variations on traditional individual transport services. The former include providing a more flexible service by allowing buses to deviate from the core route to pick up or drop passengers at their homes or at pre-arranged collection points. The latter include area and linear shuttles and circuit buses.

In some cases public transport providers are offering services that are very similar to Community Transport services and vice versa. It follows that the delivery of Community Transport services need not always be undertaken directly by Community Transport groups. The shopping services provided by Baxter’s Bus Lines on contract to Community Wheels in Parramatta is a case in point. In terms of finding the resources to expand the scope and scale of transport services for transport disadvantaged people it may be not only feasible but necessary to look towards contracting out services to government and commercial transport operators.

It may also be a legitimate use of funding to subsidise mainstream services that have a flexible component providing the use of the service by people who are targeted by the program in question, can be documented and proven.

Experience has shown that very new types of service are likely to be resisted by passengers who are used to traditional service types, even if the new service is of better quality. Service promotion and marketing are crucial to the success of such services.

Finally there would appear to be scope to introduce trip optimisation software, as commonly used in Europe, to coordinate and schedule the whole range of Community Transport and flexible public transport services.

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