Community-based flexible transport as a method for addressing community inclusion: developing and evaluating specialist DRT in Highland Scotland

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1. INTRODUCTION

The delivery of public transport in sparsely populated communities represents a significant challenge to transport operator, local authority and community resident alike. Sparse populations make conventional bus service provision expensive, and the requirement to show a financial return or minimise costs has resulted in a declining service in a number of remote communities.

The effect of a reducing level of public transport provision, or indeed a static level of service in instances where expectations are increasing, can be felt in terms of its impact on communities, and include a reducing level of relative accessibility, and the reduced ability of an individual to participate in community activities (Hine 2000). Lack of transport can also (Turner and Griece 2000) increase significantly the ‘difficulty of job seekers in peripheral locations finding employment without having access to a car.’ It follows that a lack of ability to access work will in turn affect community cohesion, and may eventually result in outward migration, and loss of settlements. Furthermore, as the relative accessibility of those reliant on public transport declines, the desirability of the public mode declines, in turn presenting a downward pressure on the ability of public transport to maintain services.

A number of responses have sought to address a rural ‘transport problem’ of which more established approaches have included use of Demand Responsive Transport (DRT), variously known as Dial-a-Bus, Dial-a-Ride and variants thereon. These noted (Brake et al. 2006) to embrace the flexible application of route vehicle allocation, vehicle operator, type of payment and passenger.

Bus based DRT has proven effective in delivering an increased level of service but still suffers from inherent operational limitations, which include a defined vehicle size as well as the effective limitation imposed by engagement

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on one journey precluding others (varying commitment), and a high level of per passenger cost that may act to restrict the numbers of services that can be provided. Furthermore differing journey purposes are better or worse suited to DRT solutions. Significantly, journeys to and from work place (travel to employment) are typically limited to a particular time of day, and require a higher level of service and demand greater reliability that may be available from bus DRT given its varying commitments. Pragmatically, early morning shifts starts and late night shift ends are unlikely to be consistent with the demand for other journey types, lessening the practical goal of reducing per capita transport cost by combining trips into single multi-purpose journeys, effectively making traditional DRT an expensive solution to accessing jobs.2

A more focused response, adopted in the Highlands of Scotland, has been the development of a targeted transport solution, Transport to Employment (T2E). The T2E service is intended to address issues in accessing employment in instances where more traditional transport has not been available. The concept is based on a hybrid service including concepts of determined DRT utilising smaller (taxi) vehicles. The result has been an effective increase in numbers of individuals entering and maintaining employment. Transport supply using T2E can be more closely matched to demand and, given a number of novel approaches within T2E, can be delivered with reducing costs over time. A 12 month pilot completed from May 2005 in Sutherland has demonstrated the effective impacts of the service, a significant demand for focused transport provision, and a potential to move from supported to sustainable transport provision in rural communities.

This paper provides an overview of the T2E concept, analyses the effectiveness of the service delivered, and provides an indication of its ability to achieve sustainable operation. The paper also provides an overview of wider impacts, both positive and negative, of implementing similar services on a wider basis.

2. DEMAND FOR NON-TRADITIONAL TRANSPORT SERVICES

The roles and forms of public transport services, and their definitions, have developed over time. Traditional public transport (transit) typically comprises bus and rail services operating on a fixed route basis. Services being identified with a fixed or timetabled operating pattern, including operations following headways. Similarly, the relationships between transport supplier, regulator and local authority are established, and widely understood.

Conversely, non-traditional transport services, those operating without predetermined timetables, are less visible and can vary widely in scale and scope. Of these, the most common – DRT, has enjoyed something of a surge in recent development. Demand responsive services being seen as a potential method by which transit may be provided in circumstances of limited population density, or where demand is low.

2 Ambrosino et al (2004) have explored the recent development of DRT services across Europe.
A consensus of the concepts surrounding DRT appears to have emerged in Europe (Brake et al 2004), covering a range of provision with varying route/time flexibility. DRT has also become established in a North American context, defined as ‘specialized transportation for older persons, persons, persons with disabilities … also provided to the general public, particularly in areas with lower population densities or lower levels of demand.’ (Schofer et al. 2003) More typically in North America, DRT addresses specialist accessibility requirements defined within the American with Disabilities Act (ADA) rather than acting as a replacement for fixed route traditional public transport.

The wide range of DRT definitions is consistent with the observation that it can cover a wide range of services, differing operator, vehicle and authority relationships, and may be better described (Brake et al 2003) as a continuum of Flexible Transport Services (FTS). The nature of operations within a range of flexible transport is consistent with both high levels of flexibility, services with low levels of pre-booking available immediately, and those with differing levels of flexibility, where prior notice of need may be required.

The range of supply is further explored, defined as typologies, in a Scottish Executive report completed by Derek Halden Consulting (SE 2006) and include:

- Supported Bus Services
- Concessionary Fares Schemes
- Social Services Transport,
- Specialised Home to School transport
- Ring and Ride services for specialised needs groups
- Non-emergency patient transport schemes
- Other community transport schemes

As rural community needs and transport dependencies change, the potential for flexible, non-traditional transport may increase. Moreover, gaps between communities served and those not served by traditional public transport (spatial separation), and gaps resulting from long time periods between bus or train (temporal separation) may be better served by non-traditional modes, than by more conventional approaches.

2.1 Flexible Transport - Market definition

The Scottish Executive (SE 2006) identifies four main markets for DRT:

- Premium Value Services,
- High Value to Agency Services,
- High Care Needs, and
- Best Value Public Transport.

The definition separates ‘premium value’ services typified by air-porter, and
hotel shuttles with personalised service used occasionally; from more widespread services intended for regular use. High value to agency services and high care needs transport are defined as including an element of public service. Best value public transport suggests that Flexible Transport Services may, in some instances, offer a cost effective replacement to traditional transport operation.

While helpful, actual demand may cross a number, or indeed most of the identified segments. Many (most) of the drivers of demand for transport in rural communities reflect the same individual needs as those in more urban settings; but face the additional challenge of increased distance and reduced traditional transport. Fixed services, including hybrids\(^3\), are limited to such routes as may be commercial, or fall within the resources of a local authority transport support budget. As a result trips to shops and to other community activities are limited to the available times of public transport, and practically excluded from locations away from transport routes. Transport to work is similarly limited to bus and train available times, with access to early morning shift starts, and evening shift ends effectively unachievable.

### 2.2 Options in the supply of Flexible Transport

In addition to the difficulties created by a lack of transport, a (significant) range of barriers affect the supply and potential supply of transport services. Low population density and dispersed settlements are not conducive to traditional service provision, while an increasing level of, and aspiration toward, car ownership reinforces the downward spiral of decline. Moreover, as this trend continues, those unable to move to car ownership face a further threat of service withdrawal.

Innovation in DRT has offered a partial solution for a number of years, and has effectively increased access in a number of rural communities. The concept of smaller bus services altering routes and time to meet actual demand being innovative at its outset, and effective in its delivery. Yet even the ‘classic’ models of DRT are restrained by the nature of the vehicles being used, cost restraints imposed or realised, and (SE 2006) a continuing reliance on public support. Bus-based DRT services operating in the Highlands maintain restricted hours of operation, and may alternate areas served by day of week. To some extent, the equilibrium of bus-based DRT may actually also reflect the most effective market for those services, whether this is access to shops, doctors’ surgeries or market towns.

A more flexible DRT service may be required to achieve appropriate supply to areas of very limited demand, and/or overcome the challenges of vehicle size and operating restraint. Cost models are also required to reduce reliance on limited public resources, and the divergence between running empty vehicle seats and reducing levels of service refusal – both impacts of varying

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\(^3\) Hybrid transport relates to multiple use vehicle operation, including – in the Highlands of Scotland – Postbus services, post office vehicles carrying passengers as a secondary use in addition to postal delivery / collection.
commitment. Moreover, the perception and actuality of poor service reliability, which may in part originate from varying commitment, must be addressed before specific uses, such as access to workplace, become common to DRT use.

3.0 DRT APPLICATION: CASE STUDY IN EAST SUTHERLAND

The need to identify transport solutions specific to rural isolation is identified across a number of studies addressing social exclusion (Hine, 2000; Milbourne 2004), and considering impacts of a lack of transport (Taylor 2006, McDonagh 2006). Rural sustainability includes inherent reference to transport accessibility, and a number of studies from wider disciplines identify transport issues as contributing to rural development.

East Sutherland appears in and is identified specifically in previous research identifying linkages between employment, training and transport (EMIRES 2005) which further identifies the significance of gaps between residential location and employment opportunity. Lack of employment need not equate a lack of opportunity, rather the lack of ability to access opportunity. In East Sutherland, a number of opportunities were, and continue to be available, primarily on the eastern seaboard, while inland residential populations are effectively excluded by an inability to get to existing opportunities. Moreover, the distances between individual and workplace need not be great, a typical distance being between 10 and 16 kms, to be affected by an absolute barrier of a lack of transport.

3.1 The Case Study area

East Sutherland, a county in the Highlands of Scotland (see Figure 1), is typical of less accessible rural communities, displays low population density and a dispersed population. The county has a total population of 14,000.

Fig. 1 Location of East and Central Sutherland in the Highlands of Scotland
As with similarly isolated communities, transport routes exist in specific corridors. In Sutherland these run North/South along the Eastern Seaboard, and East West along river valleys. A limited rail service also operates, for the majority of its route running North – South, but diverting inland to avoid engineering challenges in crossing the Dornoch Firth and mountainous inlets in the north of the county. Population centres (inset) are spread along the primary transport routes, with a split between coastal tourist destinations and inland residential populations

3.2 Issues specific to the case study area

The presence of both employment opportunity and lack of employment within quite close proximity forms something of a paradox, which does not translate to other, more urban, environments. Whereas an equivalent distance in an urban area (10 – 16 kms) would be present less of an issue, the distance between home and workplace remain a significant barrier in instances where transport is not available.

Public transport remains severely limited by the imperatives of need to make money or need to minimise costs in supported services, and often fail to provide services where demand is considered to be low. Communities can thus be isolated spatially, where no public transport service exists at all; or temporally, where services do run but not at the times appropriate to the needs of those seeking employment. Many communities are affected as a result of no services, but consideration also need be given to those affected by no services appropriate to time of travel. Early morning shift starts and late evening shift ends are the least likely to be served by traditional forms of public transport, and may give rise to an individual’s ability to get to work but not from it (and vice versa) thus continuing to prevent job uptake. Other gaps exist in relation to transport on particular days of the week, many operators offering a lower level of service, if any, on Sundays and Bank Holidays. Seasonality is also apparent, both in terms of differences between summer and winter transport provision, much being aimed at a tourist market, and seasonality in employment, resulting for the same reason.

Even where available, questions of public transport service reliability remain and have resulted in an increased reliance on private transport. This to the extent (Gray et al. 1998) that ‘many rural residents were making financial sacrifices in order to retain their [private] transport means’.

3.3 The T2E Service

The Transport to Employment service has resulted as an attempt to address issues arising in the EMlRES and similar rural access research. The service is
simple in its aims and has been identified as reducing the barriers faced in rural communities in getting to work. The concept fits within the Scottish Executive definitions, see above, as a ring and ride service for specialist groups, but also shares many of the characteristics of specialist home to school transport, particularly in terms of its contractual arrangements with suppliers. The service is one of those reviewed within SE (2006), and is identified as conforming with ‘High value to Agency’ criteria in that it offers a method by which public objectives, particularly employment, may be achieved; but is also likely to cross definitional boundaries, and may offer appropriate alternatives to supported traditional public transport, defined in the report as ‘Best Value Public Transport’.

Use of the service is simple, individual users register and book transport via a central administrative centre, which is co-ordinated by the service and contracted via third party taxi operators. Flexibility and responsiveness are both issues, and the project does not provide an instant booking service, rather a planned form of flexible shared transport co-ordinated on a weekly basis. Advance notice is required, and bookings are requested by Wednesday of the week preceding transport. Individuals are asked to share the cost of service provision, and its administration, and are invoiced in arrears for use made. Financial support is provided, and an initial period of use is offered on the basis of an administrative charge alone. Supported and cost recovery ‘modes’ are seen as a method of accessing and maintaining employment, and are seen to address a second barrier to employment, the ability to afford to travel to work.

3.4 Operational Experience

The T2E service has received a wide range of users from a cross section of individual needs and profiles, Fig 2, and as such does not support the argument that particular segments of the community are more likely to suffer spatial isolation than others. The service does, however, identify and differentiates between initial access to employment, where financial barriers may exist in addition to a lack of accessibility, and ongoing access issues.

Figure 2: Age Profile of T2E users

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Individuals seeking to use T2E may receive financial support in initial use, and then move to covering a proportion of the operating costs incurred (cost recovery). Both supported and cost recovery use impact on the long-term viability of the service, and will also impact on the ability of the service to continue to expand. During the period of pilot operation commencing in May 2005 initial use was defined as the first six months of use, and services were provided without cost to the user. Cost recovery use reflects the desire of T2E to continue to operate beyond a period of external support, and is based on the allocation of costs according to distance, with an administrative charge, and a price cap felt to be equivalent to average bus fares.

The period of free initial use was intended to provide a grace window in which individual users entering employment for the first time or after an extended period of absence, could establish a level of financial security prior to paying for transport. The period represented a high level of individual subsidy, which in turn limited the extent of service provision possible. It was also noted that the perception of a ‘free’ service tended to be of state provision and resulted in a lack of individual ownership by users. A lack of notice of days off, vacations and illness created unnecessary costs to the project in booked and paid for taxis being idle in a small number of cases, while the actual transition from supported to cost recovery modes was notably painful for some users for whom the difference in cost (zero to a maximum capped level of £3.00) was a significant change.

A questionnaire based review (T2E 2005) established users’ perceptions of equivalent pricing were other public transport modes available (Table 1), and set out a revised charging structure for T2E use.

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>Mean Cost per single journey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>£3.25</td>
</tr>
<tr>
<td>Train</td>
<td>£4.79</td>
</tr>
<tr>
<td>Taxi</td>
<td>£8.75</td>
</tr>
<tr>
<td>Car</td>
<td>£2.68</td>
</tr>
</tbody>
</table>

Charge revision took place with effect of the first anniversary, and have resulted in the supported period being reduced from six months to four. An administrative charge has also been extended to T2E use in the initial period, set at £1.00 per journey. Cost recovery charges have also been amended with an increased price ceiling of £3.50 reflecting the levels of bus fare stated within the user questionnaire.

Benefits of the revision relate to a significant increase in individuals taking ownership of their use of the T2E service and an easing of transition from Supported to Cost Recovery mode. Following revision, there has been a significant increase in notification of changes in transport needs, the individual choosing to cancel rather than pay for services which they are not going to
3.5 Supplier Experience

In addition to the relationships established between the service and its users, suppliers play a significant and highly important role in the delivery of T2E. Unlike traditional public transport T2E determines supply on a weekly basis reflecting notified demand, and contracts to suppliers (mainly taxi companies) on the basis of negotiated tariffs. The demands placed on suppliers are more complex than a traditional public transport services, and may vary to reflect actual rather than predicted demand.

Taxi operators are contacted in local communities within the service area, and all licensed suppliers have been invited to become involved. T2E currently contracts to 5 companies located throughout the area, and these represent the majority of taxi suppliers within the service boundary. Immediate advantages exist in terms of increased business and the opportunity to develop a long term relationship between the service and its suppliers, which in turn provides stability to taxi suppliers and has the knock on effect of maintaining / increasing taxi supply, while T2E have sought and achieved a low mileage rate when compared with traditional set taxi tariffs.

T2E contracts and pays on the basis of live miles and will not cover positioning costs. The service also requires ability to determine occupancy rates, pick up and drop off points of a vehicle along routes, with services being planned for and booked centrally. Planning and dispatch functions are assumed by T2E centrally during T2E provision. At all other times taxi companies resume traditional taxi operation, and this results in a high level of vehicle efficiency. There are no periods of non-utilisation within the T2E service operation.

Booking is completed on a weekly basis, permitting a high level of flexibility up to preset deadlines (Wednesday in the week preceding transport) at which point route plans and timetables are drawn up by T2E and passed to the suppliers. An initial per passenger booking system, in which suppliers were asked to determine vehicle allocation proved effective in instances of low passenger numbers but ultimately difficult with increasing multiple occupancy. In particular, the desire by some passengers to inform drivers of changes in shift patterns rather than informing T2E resulted in vehicles operating at differing times to those understood by T2E, and could result in incorrect payment by passenger in cost recovery, and by T2E to supplier.

A revision in booking within the first four months of operation moved to a full vehicle booking system, where T2E determined vehicle allocation, setting route, time, pick up and drop off points. The revision placed increased emphasis on communication via the centre, but ultimately delivers improved services and increased efficiencies.

4.0 VALUE FOR MONEY

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An initial review of the performance of T2E relates to the comparative costs of Flexible Transport, and with reference to the costs identified in the Scottish Executive (2006) report, see Table 2.

Table 2: Public Subsidy Costs per Passenger Trip

<table>
<thead>
<tr>
<th>Market</th>
<th>Subsidy costs per trip</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£ 0-2</td>
</tr>
<tr>
<td>Premium services</td>
<td>Target for commuter services (Yellow Taxibus)</td>
</tr>
<tr>
<td>High Value to Agency</td>
<td></td>
</tr>
<tr>
<td>High Care Needs</td>
<td></td>
</tr>
<tr>
<td>Best Value PT</td>
<td>Typical shared taxi, based bus replacement</td>
</tr>
</tbody>
</table>

Source: SE 2006

In that many (most) rural public transport services operate at a loss, the comparison assumes a per passenger cost of production, met by public expenditure, local or regional subsidies. Subsidy costs per passenger trip are identified against ‘forms’ of DRT service type identified earlier in the Scottish Executive report.

T2E is identified, in the same report, as a High Value to Agency service, whose mean costs per passenger trip are identified as between £10 and £20. The observed performance of T2E is somewhat better than this suggests, with typical subsidy costs of £7.25 per passenger journey somewhat lower than the identified mid range categories set out for High Value to Agency services, and is more consistent with the typical subsidy costs of Dial-a-bus services (£5-10), reducing as increasing numbers of T2E users move to cost recovery. Moreover, the study and comparisons against typical journey costs do not allow for a more detailed assessment of mile based costs. T2E journeys are typically range between 12 and 16 miles, and can extend to 22 miles in the longest incidence. These are felt to be longer than those typical to bus based DRT and this in turn may indicate a more effective service delivery than initially apparent.

Passenger cost comparison may also fail to fully identify the positive impacts
of a targeted transport service. Cost Benefits Analysis (CBA) provides a more detailed tool for assessment, particularly where this includes an element of social impact analysis (see Field 2006). Social returns relate to, among other things, increased local economic activity, and could be argued to include reductions in state expenditure (on benefit) as a result of increasing employment. While investment in equipment has a pay off to individuals, its benefits (De Long and Summers 1991) have a ‘social rate of return’ interpreted by Field (2006) as ‘largely uncompensated’, and ‘warranting subsidization’. It follows that support may be justified on the basis of the totality of its return, not purely the return to its investors.

In the case of social transport, benefits and effects may be felt beyond the immediate investment, whether by investor (community, council or private undertaking), by user (benefiting, in the case of T2E from access to new employment), or by community (benefiting from increased local economic activity). This includes reductions in other expenditures, reduced payments through social benefits, unemployment support; but can also be allied to increasing levels of income to the public exchequer, increased tax revenue arising from employed individuals (rather than unemployed), and increased production levels of corporate gain, and tax revenues from employers. These benefits, while tangible accrue away from the immediate transport service, and revenues so created do not return to the original investors in the transport service to which they may be allied.

The concept of a Social Return and its assessment is reported on in the work of the Roberts Enterprise Development Fund (REDF) and is based on the premise (REDF 2000) that ‘Social and Economic value created by the non-profit sector has not been appropriately tracked, calculated and attributed’. The concept is expanded (REDF 2001) to a series of methodological steps, and applied to UK procurement, expenditure and social economic settings by the New Economics Foundation (See Aeron-Thomas et al 2004). Social Return on Investment (SROI) has also been applied to specific employment projects (Mackenzie and Nicholls 2004), which in turn may provide a base line comparator for other schemes, including T2E, which improve access to work.

4.1 Social Return on Investment (SROI)

SROI has been applied to the initial and subsequent stages of the T2E pilot operation. The assessment seeks to identify the costs of and benefits accruing to a specific scheme across a broad cross section of attributable impacts. Average levels of pay rate and reduction in rates of welfare payments are assumed, and are illustrated in Table 3 specific to initial service delivery. Assumed levels of ‘deadweight’ the numbers of jobs that would have been created without T2E being available, and drop-off, the extent of T2E users leaving employment or no longer using T2E are set at 10% per item.
Table 3: SROI calculations for T2E based on initial use

<table>
<thead>
<tr>
<th>EMPLOYMENT</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits to each client</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client Wages</td>
<td>9,880</td>
<td>10,078</td>
<td>10,279</td>
<td>10,485</td>
<td>10,694</td>
</tr>
<tr>
<td>Less welfare lost</td>
<td>3,640</td>
<td>3,640</td>
<td>3,640</td>
<td>3,640</td>
<td>3,640</td>
</tr>
<tr>
<td>Less JSA lost</td>
<td>2,600</td>
<td>2,600</td>
<td>2,600</td>
<td>2,600</td>
<td>2,600</td>
</tr>
<tr>
<td>Less increase in tax contribution</td>
<td>887</td>
<td>905</td>
<td>923</td>
<td>942</td>
<td>960</td>
</tr>
<tr>
<td>Less national insurance</td>
<td>549</td>
<td>560</td>
<td>571</td>
<td>583</td>
<td>594</td>
</tr>
<tr>
<td>Net benefit per client</td>
<td>£2,204</td>
<td>£2,372</td>
<td>£2,545</td>
<td>£2,720</td>
<td>£2,900</td>
</tr>
</tbody>
</table>

Benefits to the State (per client)

| Welfare saved | 3,640  | 3,640  | 3,640  | 3,640  | 3,640  |
| JSA saved     | 2,600  | 2,600  | 2,600  | 2,600  | 2,600  |
| Increase in tax contribution | 887  | 905    | 923    | 942    | 960    |
| Increase in national insurance | 1,188 | 1,212  | 1,236  | 1,261  | 1,286  |
| Net benefit to the state | £8,315 | £8,357 | £8,399 | £8,442 | £8,486 |

Combined Benefit

| Total participants in job | £10,519 | £10,729 | £10,944 | £11,163 | £11,386 |
| less deadweight | 20      | 16      | 13      | 10      | 8       |
| less drop off | 18      | 14      | 12      | 9       | 7       |
| less deadweight & drop off | 16      | 13      | 10      | 8       | 6       |

Total annual benefits

| less deadweight | 210,380 | 171,670 | 142,271 | 111,628 | 91,089 |
| less drop off | 189,342 | 150,211 | 131,327 | 100,465 | 79,703 |
| less deadweight & drop off | 168,304 | 139,482 | 109,439 | 89,303  | 68,316  |

<table>
<thead>
<tr>
<th>NPV of benefits</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total annual benefits</td>
<td>203,265</td>
<td>160,255</td>
<td>128,321</td>
<td>97,278</td>
<td>76,694</td>
</tr>
<tr>
<td>less deadweight</td>
<td>182,939</td>
<td>140,224</td>
<td>118,450</td>
<td>87,550</td>
<td>67,107</td>
</tr>
<tr>
<td>less drop off</td>
<td>162,612</td>
<td>130,208</td>
<td>98,708</td>
<td>77,822</td>
<td>57,521</td>
</tr>
<tr>
<td>less deadweight &amp; drop off</td>
<td>147,266</td>
<td>110,176</td>
<td>88,837</td>
<td>68,094</td>
<td>47,934</td>
</tr>
</tbody>
</table>

The SROI assessment is can be extended to produce a number of output indicators, Table 4, indicating added value per client and (Table 5) break even point. An indicative value added per client of £19,156 is achieved in the delivery of T2E, with a break-even point achieved at 5.3 months employment.

Table 4: SROI output indicators, T2E pilot scheme

<table>
<thead>
<tr>
<th>NPV of Benefits</th>
<th>NPV of Costs</th>
<th>Value Added</th>
<th>VA per client</th>
<th>SROI ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total benefits</td>
<td>665,813</td>
<td>74,200</td>
<td>591,613</td>
<td>29,581</td>
</tr>
<tr>
<td>less deadweight</td>
<td>596,269</td>
<td>74,200</td>
<td>522,069</td>
<td>26,103</td>
</tr>
<tr>
<td>less drop off</td>
<td>526,871</td>
<td>74,200</td>
<td>452,671</td>
<td>22,634</td>
</tr>
<tr>
<td>less deadweight and drop off</td>
<td>457,327</td>
<td>74,200</td>
<td>383,127</td>
<td>19,156</td>
</tr>
</tbody>
</table>

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Table 5: Payback Period, T2E pilot scheme

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of clients in sustainable jobs</td>
<td>Clients still employed after 9 months</td>
<td>16</td>
</tr>
<tr>
<td>Net combined benefit per client in year 1</td>
<td>For client and the State</td>
<td>£10,519</td>
</tr>
<tr>
<td>Aggregate benefit</td>
<td>16 * £10,519</td>
<td>£168,304</td>
</tr>
<tr>
<td>Investment</td>
<td>Grant funding</td>
<td>£74,200</td>
</tr>
<tr>
<td>Months those 16 clients must remain employed to break even on investment</td>
<td>(£74,200/£168,304)*12</td>
<td>5.3 months</td>
</tr>
</tbody>
</table>

A further impact is likely to arise as a result of the revision of charging structure, which introduces a payment from an earlier stage in the process. Fares effectively reduce the investment figure and may act to increase the numbers of services offered or reduce the total costs of external support. The impact of the change will be fully realised as all users move from original to revised tariff structures.

4.2 Social Returns

The results of the SROI analysis provide an indication of a significant benefit arising from the application of the T2E transport scheme. Individuals entering employment as a result of T2E experience a positive net benefit of £2,204 in the first year compared to a full range of benefit payments, and in excess of the costs incurred in returning to work. This suggests that an individual stands to gain from employment opportunity and access as a result of T2E. A more significant benefit is, in contrast, accrued by the state as a result of reductions in benefit and associated support payments. As each individual moves to employment payments from the state reduce, and income to the state increase. This equates a benefit to the state of £8,315 per user in the first year. Table 6 summarises the range of impacts accruing from the operation of T2E.

Table 6: Social Returns arising from T2E in its first year

<table>
<thead>
<tr>
<th>Individual Net Benefit per user</th>
<th>£2,204</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Net Benefit per user</td>
<td>£8,315</td>
</tr>
<tr>
<td>Combined Net Benefit</td>
<td>£10,519</td>
</tr>
<tr>
<td>Incremental social value per user</td>
<td>£19,156</td>
</tr>
</tbody>
</table>

The project delivers a projected SROI ratio of 6.2:1, suggesting that an investment of £1, produces a social benefit of £6.20. Any SROI in excess of 1:1 is positive and suggests value in its pursuit.

The project can also be demonstrated to have achieved an extent of use in which its basic costs are covered. The payback period suggests that the initial 16 clients using T2E would need to sustain employment for 5.3 months for the employment-related benefits to cover the costs of the programme. This point has been surpassed. The required number of clients required each year to reach breakeven is 7. This number has also been surpassed.

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5.0 CONCLUSIONS

There is an underlying need for an improvement in accessibility in rural locations to underpin the survival of community. Where access by public transport is limited private cars have come to dominate reducing the effectiveness of the public transport alternative, and impacting heavily on those unable to drive. The effective decline of public transport modes, including stagnation of the mode against increasing expectations and an increasing requirement to travel to economic and social activities will, if not addressed, increase social isolation, and eventually result in increased outward migration.

Existing non-traditional transport solutions have gone some way to alleviate the gaps in access, with bus-based DRT providing an important method of accessing locations beyond the reach of traditional fixed route transport services. A problem exists, however, in that a bus-based DRT scheme suffers from inherent difficulties in the nature of operating on demand across a wider area, particularly that once engaged a vehicle is withdrawn from offering differing journeys; and often significant differences between size of vehicles, number of seats, and potential demand, number of passengers. Within the pilot area at the time of T2E roll out, bus-based DRT did not provide a daily service, concentrating rather on particular market segments such as weekly journeys to market towns, popular for shopping but less effective in accessing employment.

By choosing small targeted vehicles, T2E has effectively reduced many of the difficulties associated with accessing employment, and is able to match more closely vehicle supply against demand. Using third party taxi services has an additional benefit in that vehicles may revert to taxiing for hire and reward use outwith T2E use.

The effective benefit and incremental value arising from T2E delivery are also positive. A significant net benefit accrues from the service, with a combined benefit of £19,156.00 per user benefiting from the initial investment.

The extension of the existing scheme from pilot to operational phase should provide a further opportunity to determine effectiveness across wider areas, and impacts of increasing service scope on the effective rates of inclusion. Further evaluation should also provide a method of determining dependencies, and transfer points, as well as allowing for the determination of wider social impacts to be included in SROI or similar assessment tools.

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