

# **DEMONSTRATING THE VALUE OF TRANSPORT FOR COMMUNITIES**

Derek Halden  
DHC  
John Taylor  
TAS  
Ranald Robertson  
Hitrans  
David Summers  
Highland Council

## **1. INTRODUCTION**

There is an extensive academic debate about the relationships between transport and society, but valuation techniques for the social value of transport seldom reflect the depth and diversity of these relationships. Most current transport economic and social evaluation techniques focus on variables such as travel time and cost. This derives from a prevailing professional transport perspective that demonstrating wider benefits in detail does not greatly enhance the prospects of transport funding.

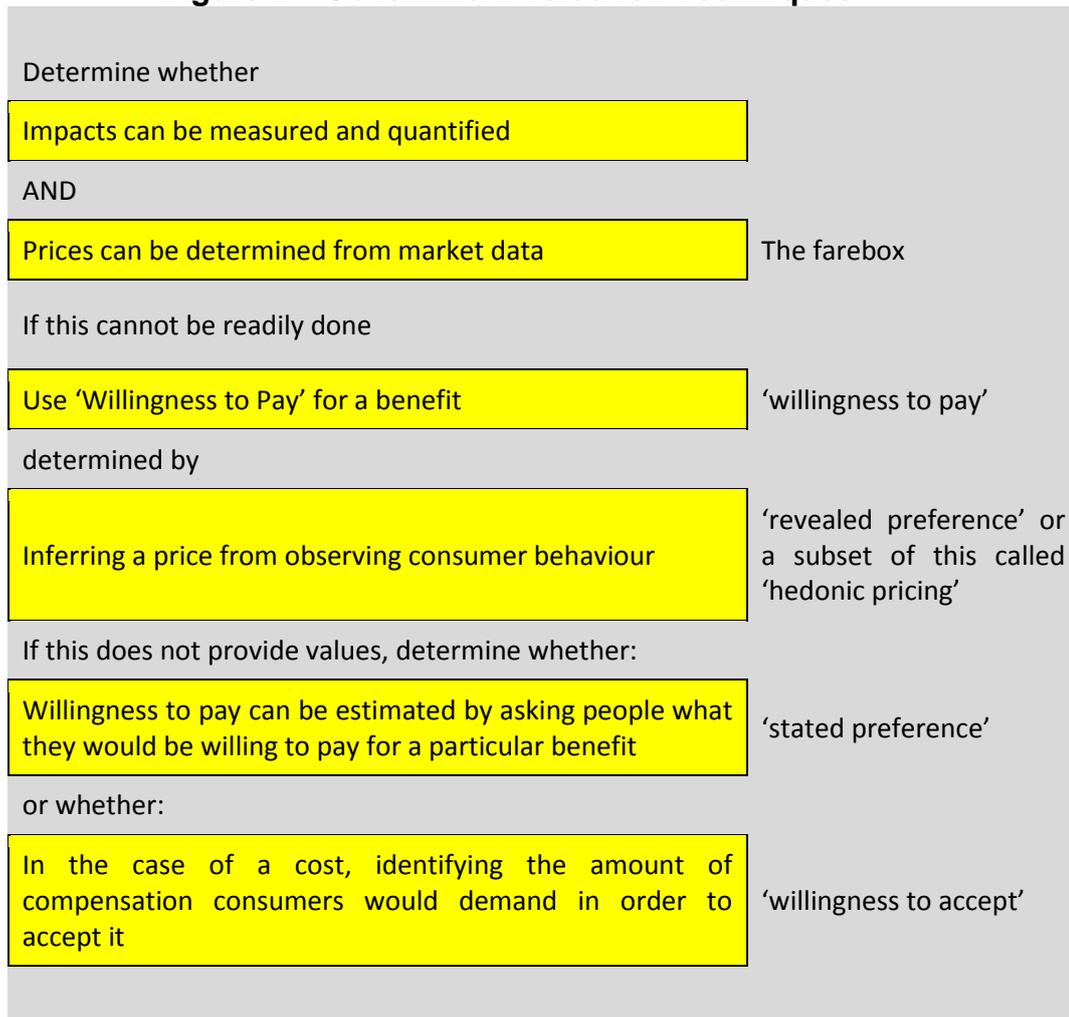
Whilst the needs for more detailed social valuation has been recognised formally in Scotland since the 'accessibility and social inclusion' criterion was added to Scottish Transport Appraisal Guidance in 2003, the detailed application of these techniques has been restricted to a few major schemes. However social benefits are relatively important for smaller schemes such as community car schemes, lift sharing, social minibus services, and transport to healthcare where wider benefits, such as the level of care provided for passengers, are particularly significant elements of the appraisal.

This paper summarises the results of a project in the Highlands and Islands of Scotland to develop an evaluation methodology for small community based transport schemes (CT) which is practical, objective and replicable. The project applied the methodology to five case study projects. By disaggregating the components of value into discrete social, market and policy elements an approach to appraisal was designed and tested for simpler, more accurate and more influential ways of measuring social and economic value.

## **2. EVALUATION APPROACH**

The general principles of valuation follow the national standards set out in the UK Treasury 'Green Book' which is the strategic guidance issued by government on how public spending should be valued. Figure 1 from the Green Book summarises these valuation techniques.

**Figure 1 – Government Valuation Techniques**



When the appraisal methods used in the early 1990s were compared with the actual outcomes in the 10 years after opening the Skye bridge project, it was identified that although people were willing to pay to cross the bridge (and therefore the project was allowed to proceed) people were not willing to accept the price, requiring compensation for a perceived lack of fairness (DHC 2007). In community transport this phenomenon is common, with complex social relationships defining what is and is not acceptable in ways that cannot easily be linked to a price.

The willingness to pay or willingness to accept factors such as the friendships made within CT, or being part of a community of users or volunteers are difficult to value. Data from surveys needs to be treated with care due to: tactical responses, response bias, poor understanding/representation of personal abilities, campaigning answers, and other factors that might lead people to value the benefits inaccurately.

In April 2011 DfT announced that a new system for transport appraisal would be introduced that included a market appraisal, business case, policy appraisal, social and distributional appraisal, and economic appraisal. The

intention is that transport appraisal should include a wider range of factors, including many of the issues that have been identified as relevant to CT appraisals. The new approach still requires to be defined in detail, and its application to Scotland is as yet unclear, but the key principles of: behavioural economics (within the market appraisal), community acceptance (within the business case), consistency across the broad range of government policy, and reflecting the distributional impacts of schemes will all be particularly important in complementing traditional economic and multi-criteria analysis techniques.

Table 1 summarises the appraisal framework which was developed.

**Table 1 – Appraisal Framework**

Element	Valuation	Valuation Parameters and Method
<b>Value to Policy</b>		
Value for public transport coverage	The value to transport of greater network coverage	Number of trips on community transport connecting with other modes of transport
	If no CT is available the cost of providing transport. Taxis are the closest equivalent to most CT (or, for group travel, minibus hire – mix of PSV and self-drive)	Taxi tariffs vary across the country but typical ranges of £1.50 to £3 per mile for trips under 5 miles and £1 to £2 per mile thereafter can be applied in appraisal. The rate for a taxi to wait for a passenger is typically £12 to £24 per hour.
	The value of being able to meet the needs of passengers with special needs	List user groups and quantify the numbers of people for whom CT is the only transport option available by trip purpose. E.g. passengers requiring vehicles with full wheelchair access facilities.
	Political value	Statements about reliance on CT provision when defending PT network coverage
	The value of information, booking and transport co-ordination functions	Report how people find out about CT transport options. Report the numbers of people relying on CT for information and booking services (including referral to public transport)
Value for social work	Savings on social work transport provision	Assumed saving on tender prices or in-house provision if a CT provider has the capability. Assume that the difference in costs is the profit element not retained by business and the value of any measurable efficiency changes achieved.
	Saving on consequences of people not being able to live independently	Cost of domiciliary service provision and/or specialist supported accommodation
	The time/cost taken for each person in the population to reach social services	A score based on the travel time/cost to reach key services relevant to that person
Education and youthwork	Savings on education transport provision	Assumed saving on tender prices if a CT provider has the capability

Element	Valuation	Valuation Parameters and Method
	Value of participating in education	Number of people who would not have been able to access education without CT
	Value of participation in discretionary activities	Number of 5-15 year olds using CT to access education and youthwork; number of 16-19 year olds using CT to access out of school and youthwork activities; number of adults using CT to access adult education
Employability and training	Value of employment in CT	Number of employees.
	Value of training in CT	Number participating in training and intermediate labour markets in CT
	Value of access to work	Number of commuters using CT services who would otherwise not be able to take up work or training including secondary benefits of being in work.
	Better value transport to employment	Assumed saving on tender prices if a CT provider has the capability to manage car/van pooling.
Crime prevention/victim support	Valuing the contribution to lowering crime	Number of young people able to participate in diversionary activities
	Value in crime prevention service delivery	Number of people using CT for prison visiting and as clients of the criminal justice social work service
	Value of safe transport schemes	Number of people using CT for safe transport
Value for Health	Value of better access to health	Number of people able to take up health care who would not otherwise be able to access healthcare; reduction in the time between awareness of the health issue and contact with a medical professional
	More cost effective patient transport	Assumed saving on tender prices if a CT provider has the capability to provide PTS
	Value of improved journey ambience for patients	£per patient using CT rather than bus or taxi
	Benefits from a wider range of services being available	Number of people able to access higher quality services than would otherwise have been possible
	Better efficiency of healthcare delivery	Number of situations where appointments have been possible that would otherwise have been missed.
	Value of better health outcomes	Number of people using CT for hospital visiting or other health trips.
Value for sport recreation and leisure	Value of participation in sport, leisure and cultural activities	Number of people using CT for cultural and leisure activities
	Value of increased choice of leisure activity	Number of people able to pursue additional interests and hobbies
	Value of a more active population	Local health and social benefit of person becoming more active due to CT
Value for community development	Enabling voluntary and community sector activities	Number of people who are only able to participate in activities due to the CT

Element	Valuation	Valuation Parameters and Method
	Enabling participation in a faith based community	Number of people able to participate in relevant activities
	Enabling participation in community affairs and self help	Number of volunteers and participants enabled by CT
Value of improved safety and a better environment	Value of reducing the number of at risk car drivers	CT transport for people over 80 who might otherwise have been drivers
	Value of reduced emissions	Emissions saved through shared transport solutions compared with alternatives
	Value of reduced accidents	For comparisons with other modes - National accident costs * accident incidence/mile * reduction in car mileage through minibus use  For safety programmes e.g. training - CT Accident costs * assessed accident reduction through MiDAS training * number of MiDAS drivers where untrained driving would have been the alternative
	Value of environmental protection projects e.g. beach tidy	Number of people using CT for environmental projects
<b><i>Value to Markets</i></b>		
The value to transport markets of the change in travel behaviour	Difference in demand for travel from people with good access to CT to those with poor access to CT	Local estimates of increase in the travel market for target groups who might otherwise have travelled less than the average for the population.
	The impact of CT on overall transport markets	CT as a % of transport markets taking average household spending on transport as £58.40 per week per person.
The value to local retailers and other local businesses of additional trade	Proportion of household expenditure captured locally due to CT	Spend in local retail economy enabled by CT based on national household spending and distribution of local trip patterns.
The value to leisure and recreation businesses	Proportion of household expenditure captured locally due to CT	Spend in local retail and service economy enabled by CT based on national household spending and distribution of local trip patterns
Value of having CT option available	Number of people able to access businesses by CT	Value identified in surveys of local businesses of value of CT.
<b><i>Economic case (user values)</i></b>		
Value of travel time and operating cost	Average national travel time values from government appraisal	The value of non work travel time used in transport appraisal is 7.43 pence per minute.

Element	Valuation	Valuation Parameters and Method
	Operating costs and fares	Fares on CT and taxis and vehicle operating costs for private motoring.
	Waiting time	Waiting time for users in national appraisal is twice the travel time. However in some circumstances this can be reduced with more pleasant interchange facilities or waiting areas.
	Trip booking time	The time taken to book travel should be the same as waiting time to reflect the inconvenience of needing to book.
Value of accessibility	The value of choice of services available to users	The impact of CT on the choice of retail centres, workplaces, leisure facilities and other services accessible measured by impact on accessibility indicators of time and cost.
Economic premium associated with transport with personal care	In addition to travel time add the costs for the carer	This cost should be at least the minimum wage factored by the travel time (currently £5.93) but a more typical market rate would be £9.50 per hour.

### 3. ESTABLISHING TRANSPORT PRIORITIES

Transport has unusually sophisticated appraisal techniques compared with other government spending programmes. In most policy areas, the appraisal is largely a cost effectiveness analysis of alternative delivery mechanisms to meet health, education, regeneration or other policy goals. A variety of tests are made to decide which activities are cost effective. Occasionally, community transport projects are funded if they are considered to be the most cost effective way of solving a problem, but in general current prioritisation approaches do not tend to consider community problems and opportunities within the option generation process. There remains a lack of clarity on which government department is responsible for each element of transport delivery, such as who should pay for transport with care for social work and health care.

In 2003 accessibility/community planning mechanisms were suggested for local authorities to work with partners allocating responsibilities and the requirements were formalised under the Community Planning Act. However the link back from community planning partnerships to transport budgets remains weak, partly as a result of the limited attention given to community goals within transport planning and appraisal practice.

In order to have a social evaluation system that is suitable for transport it is first necessary to define the relationships between transport and society. The culture and society of Scotland is changing and leadership on social change comes from politics, industry, campaigners and within communities. Therefore valuing transport for communities faces a number of challenges:

- In most transport appraisal willingness to pay (WTP) is commonly used. The social valuation of the transport provision can be elicited from survey evidence such as revealed and stated preference. However experimental and survey evidence suggest that many people's willingness to contribute is governed by ideas of fairness and reciprocity. People are only willing to pay for what they consider is a fair share of the costs. Perspectives on fairness are particularly important in community transport.
- This is compounded by the complexities of behavioural economics which shows that people do not have stable preferences over time (cognitive bias). The disparity between WTP and willingness to accept (WTA) valuations shows that sometimes people are prepared to pay more than their 'rational' WTP and sometimes less. The high willingness to pay for even very expensive taxi journeys home from hospital is one example of this.
- Value is a function of the reference framework within which each decision is made. WTA exceeds WTP when people are following a habit or going with the crowd. WTP exceeds WTA when normative attitudes in a particular context (e.g. about the environment, fairness or risk) affect consumer judgements.
- These failings in WTP and WTA mean that cost benefit analysis valuations based on travel time (e.g. as used in the STAG TEE appraisals) need to be treated with caution in all situations. Perhaps the most important principle is that it is more robust to consider relative than absolute value in all situations, particularly when considering complex transport delivery, such as with community transport where social, economic and environmental factors interact through paid and voluntary activity on consumers with particularly unstable preferences.

CT deals with many niche markets where value can be perceived very differently from averages across the population as a whole. Value is also perceived differently by trip purpose rendering broad average values such as those for travel time inappropriate.

#### **4. CASE STUDY EVALUATION**

The case study selection took account of:

- Policy and funding issues relevant in each project
- A geographically balanced sample reflecting a wide range of features where CT delivers value to communities
- Projects with both short term benefits that are more easily determined and longer term advantages (such as those related to education and educational attainment)
- Opportunities to show how CT valuation can be integrated into transport project appraisal
- The use of CT to support best value contract delivery. For example, the use of community transport to support school transport delivery.

The five projects evaluated were:

- Argyll and Bute - Red Cross Minibus Operations
- Moray Council - Speyside Community Car Scheme
- Highland Council - Morvern Community Transport
- Orkney Disability Forum Dial A Bus Scheme
- Comhairle nan Eilean Siar - Tagsa Uibhist

Table 2 summarises the key components of value identified in each scheme.

**Table 2 – Key Components of Value**

Case Study CT Project	Key Measurable Components of Value
Argyll Red Cross	<ul style="list-style-type: none"> <li>• Savings on taxi services (or contracted bus services) by public authorities is approximately £270,000</li> <li>• Value of volunteering input is around £27,000.</li> <li>• Value to local retail economy is around £9,000.</li> <li>• Value to local leisure and recreation economy is around £9,000.</li> <li>• £160k of value of travel time benefits result from the CT operation.</li> <li>• Savings of £34,000 in carer costs</li> </ul>
Morvern Community Transport	<ul style="list-style-type: none"> <li>• Savings on commercial minibus hire are approximately £11k</li> <li>• Community cohesion is enhanced by activities of 37 groups</li> <li>• Volunteering input by 12 individuals</li> <li>• Value of travel time induced by the CT is over £500k per annum.</li> </ul>
Orkney Dial a Bus	<ul style="list-style-type: none"> <li>• Savings on taxi services (or contracted bus services) by public authorities at least £160k</li> <li>• Transport co-ordination and booking management costs at least £10k.</li> <li>• Savings on taxi services by users of £18k</li> <li>• Savings on emissions from transport at least 14 tonnes of CO2</li> <li>• £23k value of travel time benefits directly resulting from the CT operation</li> </ul>
Speyside Community Car Scheme	<ul style="list-style-type: none"> <li>• Savings on Patient Transport by the NHS of between £15 and £120k</li> <li>• Savings on taxi services by users at least £6k</li> <li>• Transport business growth £25k</li> <li>• £42k value of travel time benefits directly resulting from the CT operation.</li> </ul>
Tagsa Uibhist	<ul style="list-style-type: none"> <li>• Savings on taxi services (or contracted bus services) by public authorities at least £60k</li> <li>• Transport co-ordination and booking management costs of at least £10k or additional transport costs of over £100k.</li> <li>• Savings on taxi services by users at least £10k</li> <li>• Savings on emissions from transport at least 4 tonnes of CO2</li> <li>• Transport business growth £10k</li> <li>• £250k value of travel time benefits directly resulting from the CT operation.</li> </ul>

The total costs of these five CT projects to the Councils is less than £250k per year, the additional public funding which would be required if these CTs were not supported would be at least £500k.

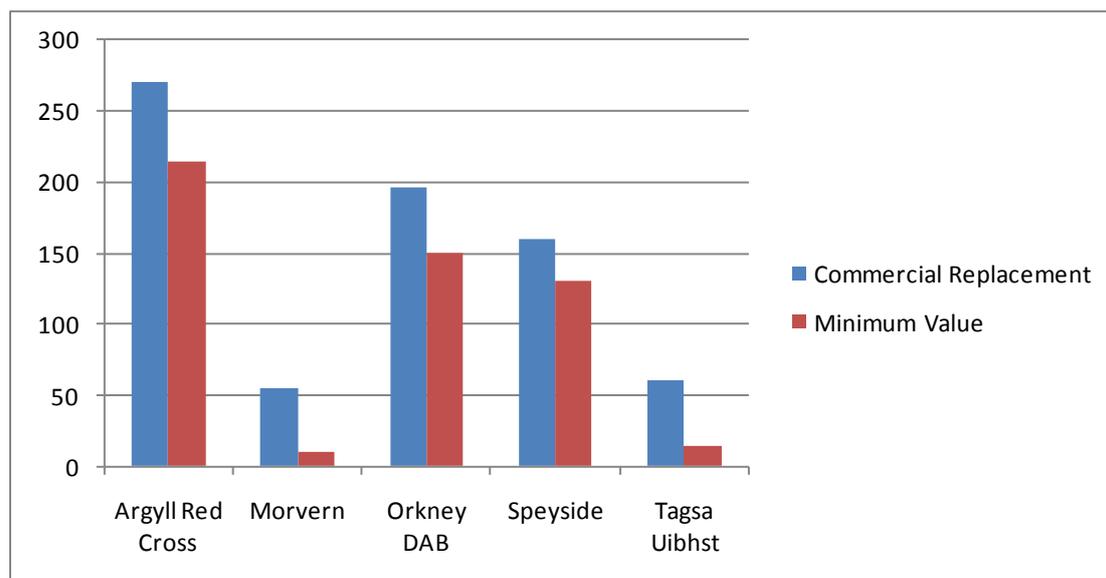
#### 4.1 Value for public transport

In undertaking the evaluation the aim has been to avoid double counting of benefits wherever possible. For example if there is no suitable bus service then users will have choices: not to travel, to use a taxi, to travel by CT, or to travel by some other means. In analysing the positive or negative value CT makes on the PT network, the appraisal looks at what changes would occur if CT were not available. In each scheme this has been assessed through user surveys. These surveys allow the CT demand to be allocated appropriately in line with estimated behaviour change. For most schemes there would be some suppression of travel demand due to higher fare costs on taxis and some increase in the demand for taxis and other public transport.

The projected increase in the size of the taxi market is used to show the notional benefit that CT is providing that would otherwise need to be paid for in some other way. The suppression of trip demand is measured later in the appraisal under the value to users criteria, estimating the economic dis-benefits of trip suppression using the rule of a half<sup>1</sup>.

Figure 2 shows the minimum value of the contribution the CT projects make to PT supply.

**Figure 2 – Cost of securing the Transport Coverage using Commercial Providers (£k)**



In practice it would be highly unlikely that any public authority would secure all of the journeys undertaken by CT at the taxi costs. It is more likely that users would be paying the taxi fares so the minimum valuations are probably closer to a robust valuation that reflects real behaviour. However it is of note that in the remote areas with more people on marginal incomes the CT users anticipate much greater trip suppression than in and around towns where taxi fares are less prohibitive.

<sup>1</sup> Within transport economic appraisal the rule of one-half estimates the change in economic surplus for small changes in transport supply. Where trips are suppressed or generated then half of the value of the change in the trip time/cost is taken as the benefit.

In Argyll, Orkney and Uist a key element of value derives from co-ordinating bookings to ensure more shared trips. Average vehicle loadings of up to 4 passengers are being achieved. A booking centre can create value in many ways through information and community engagement, so some projects may wish to invest heavily in these social support services. However for CT schemes with the levels of demand typical for these schemes an overhead of at least £10k needs to be allowed to allocate trips appropriately.

Although in most of the case studies, CT is closing essential gaps in the public transport network, concessionary travel support is managed locally and not currently covered by the national Scottish Government scheme. In order to be eligible for the national scheme it would be necessary to register regular trips on largely fixed routes. Although this might be possible for a few journeys, efficient use of the current CT resource depends on flexible operation of staff and vehicles. This highlights that to maximise the value of CT to the communities it serves some changes to the national concessionary travel scheme would be necessary.

One option would be to introduce an element of choice into the national scheme. One option might be that everyone in Scotland who is eligible for the current scheme and wishes to continue with it could do so in line with policy commitments. However for people unable to take up the current scheme, or from others who wish to opt out of it, a personal allowance could be offered towards the use of CT or other flexible shared transport services. The cost implications of a national change such as this could be managed by scaling the level of the personal allowance to the level of funds available. Changing the national concessionary travel scheme in this way would help all of the case study CT schemes to be more successful and provide greater value to their communities.

## **4.2 Value for social work**

Despite the savings to social work potentially being large there is only limited procurement of social work trips through the case study CTs. Orkney DAB delivers an £11k saving to the social work department in the Council compared with the costs if these trips were purchased from taxi companies.

Most of the projects identify that many of their users would not be able to live independently without support from CT. It is beyond this appraisal to look in detail at the care options in each area if people needed to move house or move into residential care services. However the costs are substantial. For example in Speyside at least 50 of the 270 people who depend on the scheme would probably become unable to live independently adding over £25k per year per person for additional care costs, potentially adding £1.25m per year to social care costs.

## **4.3 Value for education and youthwork**

The CT projects have demonstrated their ability to tender for and win school contracts, and that by running these an operating surplus can be generated to help fund other CT activities.

In Morvern the minibuses are used by education and voluntary groups providing educational opportunities for lower cost than the commercial alternatives.

#### 4.4 Value for employability and training

Many of the CT projects are substantial employers of staff in rural or remote locations and this adds value by growing the local economy.

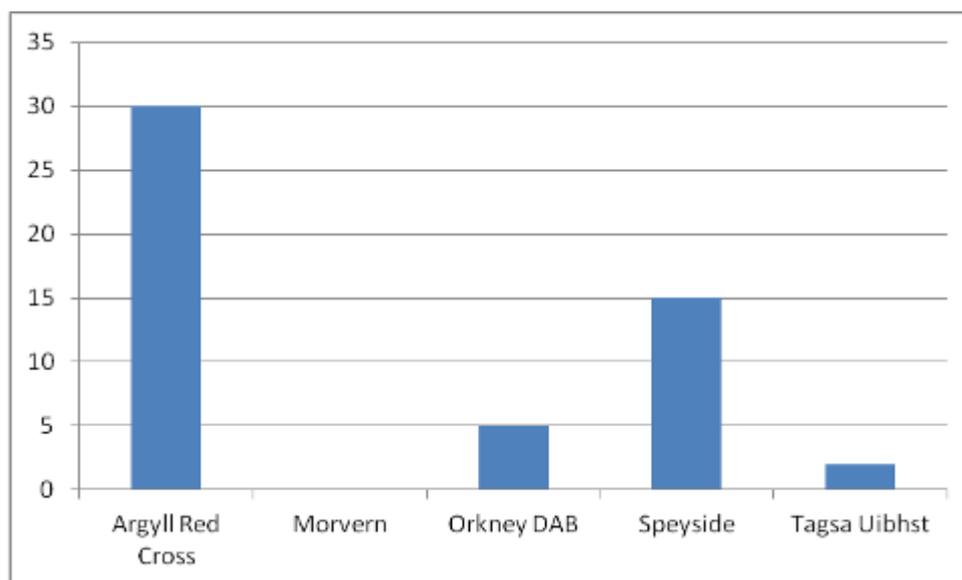
The projects all provide training of some sort with some operators investing in their staff through structured training and skills development programmes. The Uist scheme sets high standards for staff training, raising standards locally for professionalism in the labour market.

However jobseekers are not an identifiable client group for any project. In each of the projects the volunteers are also a fairly stable group with no evidence of people using volunteering as the first stepping stone into employment.

#### 4.5 Value for health

Figure 3 shows the value of patient transport provided by CT. This is high care transport for people who are unable to use public transport or travel by other means. It can be assumed that if people could not use CT then they would be eligible for NHS patient transport.

Figure 3 – Patient Transport Value (£k)



In both the Speyside and Argyll schemes, patient journeys are core business. In Argyll, the CT is funded by the NHS to provide the trips but Speyside receives no NHS funding. In Argyll the networking by CT on community planning activities has resulted in some NHS appointments being scheduled around CT availability to reduce travel costs. Therefore if the NHS pays then it has incentives to reduce travel costs and improve the overall efficiency of the economy.

#### **4.7 Value for leisure**

All of the CT projects facilitate leisure trips, although there is no easy way to quantify the value of these. The quality of life gains from people being able to attend events, shows, clubs and societies will be substantial.

#### **4.8 Value for community development**

Each of the CT projects is building community capacity by networking with local people and organisations. A key benefit is in providing a channel for volunteering, helping people to invest in their community. In the remoter communities the CT projects are part of the glue that holds the community together.

#### **4.9 Value to safety and the environment**

Reducing pressure amongst older people who feel they need to continue driving, by providing an alternative transport option, is considered by many interviewed during the surveys to be of value, but no accidents could be cited from which to value this benefit.

Shared transport is also helping to reduce the environmental footprint of transport. The benefits from improved vehicle occupancies are greatest for short trips so the schemes that deliver the greatest emissions reductions benefits are those that provide more local shopping and leisure trips (e.g. Orkney DAB).

Where the CT drivers wait at the appointment (e.g. Speyside) this cuts down a four leg journey (e.g. by a taxi) into a two leg journey reducing emissions and offering larger environmental benefits.

#### **4.10 Growing transport business**

In all of these projects, the footprint of CT in the transport economy is small with limited impacts competing with other modes.

The CT projects are generally growing the transport economy providing trips for people who would otherwise find their choices restricted.

#### **4.11 Local services and shops**

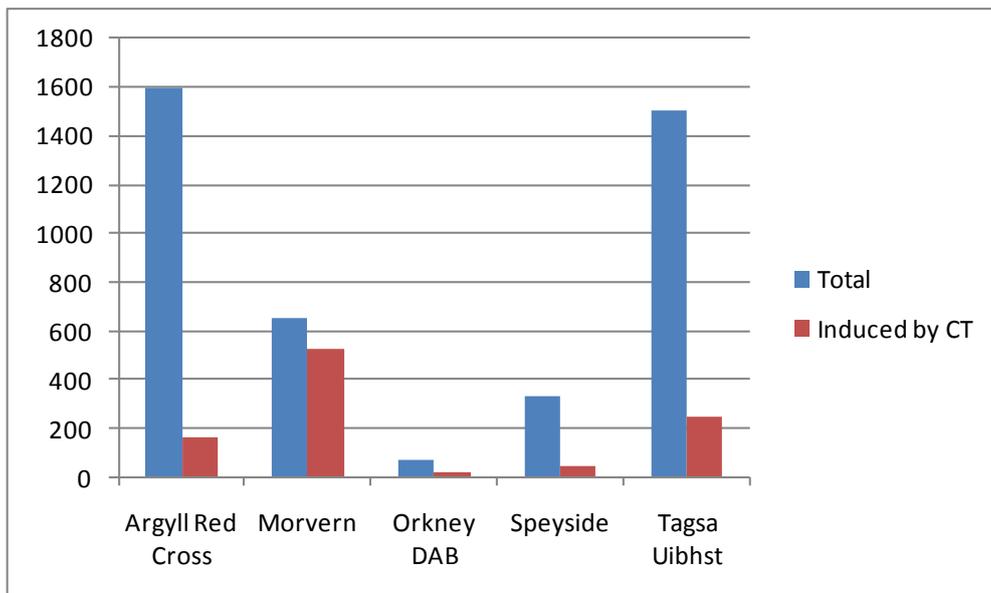
Even if all of the CT customers undertook the bulk of their purchasing locally as a result of local shopper and leisure trips, the impact on local economies would be relatively small. However in remote areas even the additional £10k of trade per year that some of the CT projects facilitate can help to sustain fragile shops and facilities.

Local businesses show that they value CT by supporting the projects through small donations.

#### 4.12 Value of travel time

Transport economic appraisal typically relies heavily on value of time assessments. The longer the journeys provided by CT the higher the value using this metric. Figure 4 shows that local schemes such as Orkney DAB have very low mileages per trip compared with some of the other projects.

**Figure 4 – Value of Travel Time on CT (£k)**



Travel time includes the whole journey, including waiting, so the fact that many journeys by Argyll and Speyside involve the volunteers waiting at the hospital is likely to cut down the patient waiting for a journey home enormously.

Operating costs for these trips generally shadow the value of travel time.

#### 4.13 Value of accessibility

CT opens up opportunity and choice for users, whether or not they use it. In Speyside the option to use the CT project was considered to be important for the area to ensure that older people would continue to see it as a good choice of place for a high quality of life in retirements. Further research is needed to

investigate how accessibility is valued by residents and non users to measure the accessibility benefit. However accessibility benefits are core policy aims so many of the dimensions of value to accessibility are covered under the policy appraisal.

## **5. CONCLUSIONS**

Community transport is extremely complex to value since it makes connections at the fringes of the economy and society with diverse aims and overlapping and sometime conflicting perspectives.

In most transport appraisals the dominant components of value are travel time and cost. Growth in transport markets leads to more travel time and more money being spent on transport. Community transport is a small element of the transport economy, but a big player in linking transport with wider policy objectives. Within CT, the core elements of value are derived from facilitating better health, social inclusion, employability, education, training, and in building communities.

A valuation approach has been developed that identifies discrete components of value for:

- Policy – CT contributes to many policy goals
- Markets – The value of the community transport provision in itself (e.g. staff salaries and other benefits) and benefits for the wider economy.
- People/residents - Users and non users benefit from the availability of the CT services.

This is consistent with the current evolution of transport appraisal to include a clearer market appraisal and policy appraisal to complement the business case and economic appraisals in project promotion. In CT a highly segmented approach is taken to travel markets so the social and distributional appraisal is built into the policy and market analysis.

CT helps to deliver on virtually all of the 45 national indicators developed by the Scottish Government to monitor progress on national goals. However CT funding is rarely the primary delivery approach for any individual indicator, although it can claim a core role in alleviating poverty and developing the social economy.

There are several hundred best value indicators if all of the Single Outcome Agreement indicators are considered from across the HITRANS area. Embedding CT evaluation within the values of each Council will be important to ensure that transport for communities is prioritised in the future.