TACTRAN DRT Pilot Feasibility Study

Pilot Area Selection

Report

March 2009

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1 Introduction

Introduction

1.1 Following on from our work on the Bus and Community / Demand Responsive Transport (DRT) Sub-Strategy as part of the TACTRAN Regional Transport Strategy (RTS), Steer Davies Gleave has been commissioned to carry out a feasibility study for potential DRT pilot schemes in both rural and urban areas of TACTRAN.

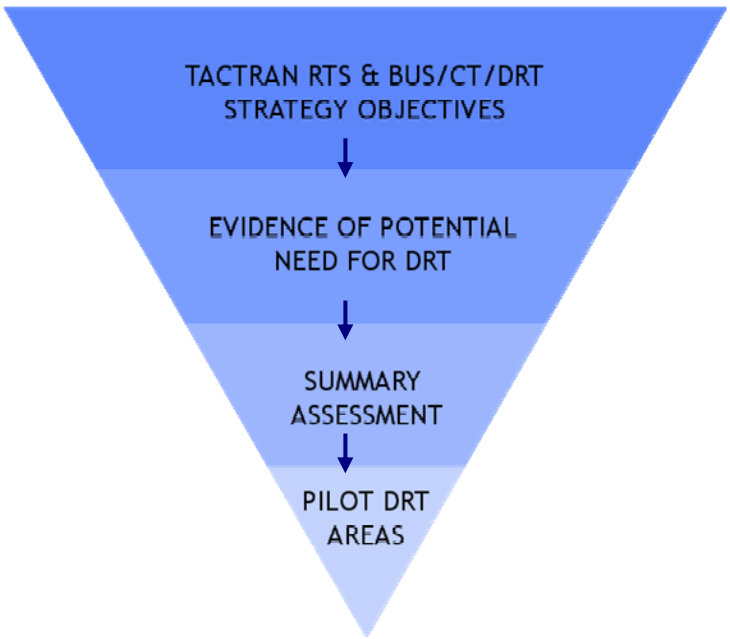
1.2 The key outputs from the study will be an Outline Business Case and Action Plan for a rural and an urban DRT pilot. Our proposed approach is set out in a separate submission, available from Steer Davies Gleave or Michael Cairns at TACTRAN.

1.3 This report has been adapted from, and refines the contents of, a paper which was issued at the TACTRAN Stakeholder Discussion on Thursday 23rd October 2008. In this report, we set out the evidence supporting the identification of potential pilot areas for DRT in both urban and rural contexts in the TACTRAN area.

Approach

1.4 We have adopted a stepped approach to demonstrate the potential feasibility of DRT, or otherwise, in the TACTRAN area, and to enable a number of potential pilot areas to be selected. This approach is illustrated in Figure 1.1 below.

FIGURE 1.1 PROCESS OF IDENTIFYING APPROPRIATE PILOT AREAS



1.5 The components of this work include:

- Defining DRT and providing an overview of it's role:
- A review of the relevant objectives and actions from the RTS and Bus/ CT/ DRT Strategy, identifying those objectives relevant to this study;
- A review of the information gathered in the development of the TACTRAN Bus/ CT/ DRT Strategy with a specific focus on areas which may benefit most from a DRT service, focusing particularly on demand for DRT. We have also undertaken additional data collection to bolster the information contained within the TACTRAN Bus/ CT/ DRT Strategy;
- Developing a set of planning objectives for the DRT pilot areas, using the overarching TACTRAN Bus/ CT/ DRT Strategy objectives and the analysis of gaps in the transport network;
- Identifying a list of potential DRT pilot areas (which emerge from an analysis of potential demand for DRT and driven by the planning objectives); and
- An appraisal summary of the potential pilot areas focusing on policy fit, demand and deliverability issues.

Report structure

1.6 This report is set out as follows:

2 Role of DRT

2.1 This section of the report provides a definition of DRT and describes its various markets, operating principles and characteristics.

Definition

2.2 The following definition of Demand Responsive Transport (DRT) will be used throughout this research: DRT is "any form of transport where day to day service provision is influenced by the demands of users. DRT planning can therefore involve: taxis; shared taxi/taxibus; community car schemes; non-emergency patient transport; 'joblink' services; ring-and-ride; social services transport; education services transport; dial-a-ride, community buses, and many other related services."[1]

Role

2.3 It is crucial to understand the role of DRT, and the types of needs it can best meet. To deliver the transport needs of a whole society requires a range of transport options. An approach to fill many different, and often non-standard, requirements is through the use of DRT.

2.4 DRT can provide greater flexibility in the transport system in comparison to fixed public transport services and by doing this can fulfil the needs of a wider range of people.

2.5 Table 2-1 demonstrates the key characteristics of DRT in relation to operator and vehicle types and Table 2-2 presents the key characteristics of DRT relating to route and scheduling choice.

TABLE 2-1 DRT BY TYPES OF OPERATORS AND VEHICLES[2]

Operator/Vehicle Type	Key considerations
Bus companies	Particularly suitable for large scale operations. Services are usually subsidised on a fixed cost basis.
Taxi operators	Ideal for small scale low tech schemes and can build from their existing skills providing demand responsive operations. Operations are usually subsidised on a mileage or per passenger basis.
CT operators	Where there is a strong local community sector able to tender for contracts they should be encouraged to do so. Key parameters that need to be considered.

[1] Review of Demand Responsive Transport in Scotland, 2006, Scottish Government

[2] Tables 2-1, 2-2 and 2-4 sourced from (2006) Evaluation Study of Demand Responsive Transport Services in Wiltshire, Dr Marcus Enoch, Dr Stephen Ison, Rebecca Laws and Lian Zhang Loughborough University for Wiltshire County Council http://www.wiltshire.gov.uk/demand-responsive-study-200607.pdf

	include: the recognised need to support the CT sector to build capacity; potentially best value given the lower cost base and overheads; often higher risks of failure in the sector mean that management capability will be a key issue; and few CT groups are able to manage large scale DRT operations.
Public agency	Procurement efficiencies may be possible by linking with existing DRT provision such as social services or patient transfer services.

TABLE 2-2 DRT BY TYPES OF ROUTING /SCHEDULING

Route/Schedule Type	Key considerations
Fixed routes	Service journey departing from an end point (terminal) either at prescribed times (e.g. regular bus routes) or on-demand.
Semi-fixed routes	Departs from an end stopping point (terminal) at prescribed times. Stops at any fixed intermediate points at prescribed times. Deviations to other stopping points upon request.
Flexible routes	Departs from an end stopping point (terminal) at prescribed times. The vehicle only calls at stopping points upon request.
Area-wide	No fixed end or intermediate stopping points. No scheduled departure times from any stopping point. Limited by operational hours and area limit. Only calls upon request.

2.6 The Scottish Executive (2006) states that there are four main markets by which DRT is defined. These are:

High Care Needs

- Caters for different care needs of passenger e.g Dial a ride, non emergency patient transport, social services transport and community transport.

Best Value DRT

- Solution for low public transport demand e.g rural ring and ride services.

Premium value services

- High value services to reduce travel times e.g airport transport.

High Value to Agency Services

- Services tailored to the particular needs of public agencies e.g patient transport, school transport, job links.

2.7 Table 2-3 below describes the four main markets which DRT can serve and the range of types of DRT services as well as potential funding sources.

TABLE 2-3 TYPES OF DRT BY MARKET[3]

Market	DRT service	Funding sources	Example
High Care Needs (in principle but not always in practice)	Non emergency patient transport (medical grounds)	NHS/ community/ charity fundraising	Ambulance Service, Voluntary Car Schemes (e.g. Red Cross, WRVS etc)
	Older persons/disabled persons - general	Local Authority (transport/ non-transport) Community/ charity/ fundraising	Dial a ride services (LA Commercial and CT provision)
Best Value DRT	Subsidised general public DRT/Subsidised fixed bus replacement	LA Transport, Central Government Grants	Wiltshire Wigglybus
	DRT feeder services	LA Transport, Central Government Grants	Lincolnshire Interconnect
Premium Value Services	Commercial DRT	Users	Airport Shuttles (USA), Taxis, private hire, Yellow Taxibus
High Value to Agency Services	Access to Work	LA Transport, Employment Agencies, Employers, Central Government Grants	'Job Links' services
	Social Work transport (also often high care needs)	Local Authority (non-transport)	LA Provision
	Education (low volume or special needs)	Local Authority (non-transport)	LA Provision

2.8 Table 2-4, overleaf, outlines the key characteristics of these markets.

[3] (2006) DHC, TAS and University of Aberdeen for Scottish Executive, Review of Demand Responsive Transport in Scotland, http://www.scotland.gov.uk/Publications/2006/05/18112606/0

TABLE 2-4 CHARACTERISTICS OF DRT MARKETS

	High Care Needs DRT	High Value to Agency DRT	Premium Value DRT Services	Best Value DRT
Motivations/Drivers	Public policy	Public policy	Commercial	Public policy
Users	Captive	Captive	Choice	Captive
Population density	High, medium, low	High, medium, low	High, medium, low	Medium, low
Area type	Urban, urban fringe, rural	Rural, urban fringe	Urban, urban fringe, rural	Rural, urban fringe
Road layout	Grid, irregular, radial/corridor	Grid, irregular, radial/corridor	Grid, irregular, radial/corridor	Radial/corridor, grid, irregular
Land use distribution	Polycentric	Linear, polycentric	Polycentric	Linear, polycentric
Subsidy per user	£5-£10	£10-£20	Up to £2	£1-£10

2.9 It is useful to consider the financial performance of DRT and how this varies. Research for the Department for Transport categorised DRT by the following[4]:

Commercially viable DRT

- These are services that are either profitable, or operate within a commercial context (e.g. temporary losses are accepted as a service is built up or a loss-making service is compensated by its positive financial effects on a service network as a whole);

Acceptable subsidy DRT

- Where DRT requires only the same (or less) subsidy than other comparable tendered services (a subsidy of £2 per trip or less appears to be the crucial threshold);

Justifiable higher subsidy DRT

- Where a subsidy above that comparable to tendered services can be justified. This may be due to the operational area (e.g. deep rural areas cost more anyway), that DRT is replacing inherently even more expensive transport, or because it is yielding significant cross-sector benefits; and

[4] (2004) Open University for Department for Transport Intermode: Innovations in Demand Responsive Transport http://www.dft.gov.uk/pgr/regional/policy/intermodeinnovationsindemand3722

Financially unsustainable DRT

- Demonstration and trial projects or other services whose losses remain very high.

2.10 The research suggests that DRT is not simply a case of commercial or subsidised: levels of subsidy can vary significantly, ranging from under £1 per passenger to £10.

2.11 In addition, it is important to note that there can be financial benefits of DRT, many of which can be hard to measure, such as improved access to training and employment opportunities.

3 Policy Context

Introduction

3.1 It is standard practice in studies of this nature to consider the full policy context surrounding any particular subject. The relevant policy for this study is considered within the wider TACTRAN RTS and Bus/ CT/ DRT Strategy and it was therefore deemed unnecessary to repeat the policy review work therein.

3.2 To assist with the selection of appropriate pilot areas for DRT in the TACTRAN area, it is important to relate such provision to the overarching RTS, and the TACTRAN Bus/ CT/ DRT Strategy. Specifically, any DRT provision must contribute to the objectives of these strategies, and help to achieve identified aims and outcomes.

3.3 Objectives from the RTS and the Bus/ CT/ DRT Strategy are set out in the following table.

TABLE 3-1 TACTRAN RTS AND BUS/ CT/ DRT STRATEGY OBJECTIVES

RTS High-level Strategic Objectives		Bus / CT / DRT Strategy Objectives
Accessibility, equality and social inclusion: To improve accessibility for all, particularly for those suffering from social exclusion.	1	To ensure that everyone across the region has access to a key regional centre, where they can access a range of services, facilities and opportunities.
	2	To remove physical, financial and perceptual barriers to accessing road based passenger transport services and infrastructure.
	3	To enable patients and visitors to access necessary health facilities by road based passenger transport
	4	To ensure a level of information provision across the whole road based passenger transport network that promotes its use and does not hinder accessibility.
Economy: To ensure transport helps to deliver regional prosperity	5	To ensure that key employment, education, retail and tourism locations are linked to the passenger transport network by a service that meets the needs of the local economy.
	6	To achieve improvements in journey times and the reliability of the region's road based passenger transport network.
Environment: To ensure that the transport system contributes to safeguarding the environment and promotes opportunities for improvement.	7	To enhance the environmental standards of the road based passenger transport fleet and infrastructure.
	8	To achieve greater use of road based passenger transport services in place of travel by private car.
Health and well-being: To promote the health and	9	To increase physical activity and improve access to leisure opportunities across the region by road based passenger

RTS High-level Strategic Objectives		Bus / CT / DRT Strategy Objectives
well-being of communities.		transport.
Safety and security: To improve the real and perceived safety and security of the transport network.	10	To provide for and improve the safety of passengers when travelling on the road based passenger transport network.
Integration: To improve integration, both within transport and between transport and other policy areas.	11	To increase connectivity between road based passenger transport services and between different modes of transport.
	12	To strengthen the links between land-use planning and provision of road based passenger transport.

3.4 Within the Bus/ CT/ DRT Strategy, three key themes have been identified:

- Network coverage;
- Infrastructure and vehicles; and
- Network operation.

3.5 Strategy principles and detailed actions have been assigned to each of these three themes. We have reviewed these and identified the most appropriate principles in relation to DRT, as set out in Table 3-2 overleaf.

TABLE 3-2 DRT STRATEGY PRINCIPLES AND DETAILED STRATEGY ACTIONS

Strategy Principle		
Network Coverage	*Infrastructure and Vehicles*	*Network Operation*
Ensure that identified key destinations are accessible by either bus or CT/DRT services from across the region and at times and frequencies that meet the needs of the region's population and businesses.	Increase the opportunities for people travelling from outlying areas to access an interchange hub from where frequent and direct transport services can be accessed.	Support the existing concessionary fares and ticketing schemes and ensure that all those eligible for concessionary and discount schemes are aware of them, able to apply and take advantage of the benefits they provide.
Ensure the provision of a pattern and frequency of service that provides a good level of service for those that have no choice but to use buses and is capable of providing an attractive option (in conjunction with other measures) for those that do have a choice.	Raise the overall standard of vehicles operating across the region in terms of safety, accessibility and environmental standards.	Encourage provision of multi-modal, multi-operator and multi-journey ticketing.
Ensure that high care travel needs are met.	Promote a high quality of driver training to ensure the safety of the travelling public, particularly for disabled people travelling on CT/DRT services.	Provided a co-ordinated booking and co-ordination service for CT/DRT services.
		Provide resourceful ways to utilise existing funding sources.
		Identify new sources of funding for enhancement of the bus and CT/DRT network.
Detailed Strategy Actions		
Network Coverage	*Infrastructure and Vehicles*	*Network Operation*
NC1 – Accessibility to key destinations NC2 – Pattern and frequency of bus services NC3 – Supported bus network	IV9 – CT/DRT vehicles IV7 – Mobility difficulties	NP2 – Driver training NP7 – Concessionary fares NP5 – Integrated ticketing NP9 – CT/DRT booking NP10 – Road based transport funding NP11 – Development of community travel

4 Initial Evidence of Demand for DRT

4.1 We have reviewed existing evidence gathered in the development of the TACTRAN Bus/ CT/ DRT Strategy and bolstered these findings with recently gathered data, to assist in identifying those areas where potential for a pilot DRT scheme may exist.

4.2 This section of the work entails an identification of constraints and opportunities, undertaken with the principal aim of identifying gaps in the public transport network and potential areas of demand for DRT, both spatially and by population type.

Transport provision across TACTRAN region

4.3 The following Table 4-1 presents an analysis of the available information on TACTRAN region transport provision, with a particular focus on:

- Information relating to supported bus services;
- Information on existing CT/DRT schemes and gaps;
- Information on Taxicard provision; and
- Any other relevant transport provision.

TABLE 4-1 TRANSPORT PROVISION IN TACTRAN AREA

	Dundee	Angus	Perth and Kinross	Stirling
Supported services	5% of bus services supported. Services subsidised: generally in early mornings, late evenings and/or in areas away from commercial routes. £403k budget.	30% of bus services supported. Services subsidised: rural hinterland and areas with low population £661k budget.	Most services in Perth commercial. Services subsidised: in the evenings and at weekends; north of Perth. Some key rural corridors operated commercially. £1.7m budget.	36% of bus services supported. Services subsidised: rural hinterland and areas with low population/ density.
CT/DRT schemes (excluding Taxicard)	Currently 8 CT/DRT schemes in operation. No funding to CT/DRT from DCC. Tayside Red Cross (Dundee) using minibus or volunteer drivers 2 pax per month; Dundee Community Transport group transport 1900 pax 2007; and, Dundee Accessible Transport Group Friendly bus for sheltered housing run by Stagecoach 7800 pax 2007.	Currently 25 CT/DRT schemes in operation. No funding to external CT/DRT from AC. Angus Transport Forum broker of minibus group hire transport for 120 organisations in Angus with Travel Dispatch Centre, 7800 pax 2007.	Currently 23 CT/DRT schemes in operation. Perth and Kinross Community Transport Group - advisory and support group. Also a number of small 'unconstituted' independent community car and community minibus schemes e.g. Comrie Hospital Cars and Co-Co Bus Trust. P&K Community Car Association (CCA) acts as umbrella association to a growing number of more formal community car schemes. Some Council funding to CT schemes who undertake education and social work transport. Education and Community Scheme Minibus Perthshire 1600 pax 2007; Strathcare transport of elderly/ housebound/disabled 3250 pax	Currently 11 CT/DRT schemes in operation. £133k to CT/DRT from SC. Order of Malta Dial a Journey; door-to-door; group hire; local bus; SEN transport; training; vehicle hire; and Shopmobility. S19 50,000 pax, local bus 35,000 pax 2007.

	Dundee	Angus	Perth and Kinross	Stirling
			2007; Pitlochry Senior Citizens' Good Neighbour Association door-to-door service for elderly and disabled; Kinross Voluntary Group and Rural Outreach Scheme for people for whom PT is not a viable option in Kinrosshire and Glenfarg 3360 pax 2007; and Blairgowrie Freedom Coach provides small scale shopping-based DRT.	
Taxicard	£259k budget from DCC 2006/07 (expenditure): 4,788 members, 119,355 trips. Equates to £54 subsidy per member, £2.16 per trip. Since 2002, Taxicard holders can retain concessionary bus pass. Max subsidy per trip of £2.50. Max 104 journeys a year (2008). Average actual subsidy per trip in 2006/07 was £2.17 (max 156 trips)	£57k budget from AC 2005/06: 649 active TC holders, £34k per annum budget for trips, £10k for operators to purchase vehicles. Max subsidy per trip of £5 (AC pays 50% of trip cost up to £10). Max 104 journeys a year (2008).	No Taxicard scheme in P&K.	£18k budget from SC. Stirling Dial a Journey provides a central call system for Stirling/Falkirk/Clackmannanshire Council's Taxicard scheme. Scheme works in conjunction with Dial a Journey, assigning best type of vehicle (taxi or w/c accessible vehicle). Max subsidy per trip of £2.00. Max 12 journeys a week.

TABLE 4-2 ANALYSIS OF EVIDENCE OF DEMAND FOR DRT IN TACTRAN AREAS

Type of evidence	Issues identified	Demand for DRT - is DRT the best solution?
Cross boundary TACTRAN		
Accessibility analysis	Areas of poor access to GPs (Figure 7.2 in Audit Report – See Appendix A1): Villages along the A90 Perth-Dundee corridor. Areas of poor access to hospitals (Figure 7.3 in Audit Report – See Appendix A2): Majority of TACTRAN rural area has no access to hospitals by PT. Areas of poor access to employment (Figure 7.6 in Audit Report – See Appendix A3): Majority of TACTRAN rural area outside of main urban areas and along the main Dundee/Perth/Stirling rail corridor. Access to education: Limited daytime PT options from rural areas a barrier to accessing Universities and Colleges within TACTRAN and beyond. Lengthy journeys to school. Limited PT services during the evening affecting travel home from school. Access to other services: Majority of the TACTRAN area has good access to Post Offices. Areas with the poorest access to Post Offices are in the more rural areas to the north of Kirriemuir, Pitlochry and Killin, and south of Crianlarich. Other areas with poor access to 30-45 minute travel time include region bounded by Brechin, Montrose, Arbroath and Forfar, and West of Perth/to the north of Crieff.	Access to health: CT/DRT could be developed to improve access to health services, in particular for elderly people, and specifically rural areas around Aberfeldy, Pitlochry and Dunkeld where high proportion of over 65s and PT provision not good. Access to employment: CT/DRT could be a suitable way of meeting transport needs of rural populations and those on low incomes. Access to education: Opportunities to develop the CT/DRT sector to provide direct trips to schools and colleges. Access to other services: CT could perhaps be developed to better serve rural areas to the north of Kirriemuir, Pitlochry and Killin, and south of Crianlarich, and the areas around the major urban areas, in particular between Brechin, Montrose, Arbroath and Forfar.
Interviews	CT operators including Angus Transport Forum, PKCTG, Stirling Dial a Journey: a more regional approach is needed to CT/DRT. Funding is being reduced and is a concern. CT/DRT should allow concessionary fare passes to be used.	CT/DRT should allow for concessionary bus passes to be used.
Dundee		

Type of evidence	Issues identified	Demand for DRT - is DRT the best solution?
Dundee City Council Interview	Taxicard is only DRT in Dundee and level of service is not good: limited/ no CT sector in Dundee. Taxicard budget is under pressure, and demand growing. DRT scheme needed for elderly and disabled to replace Taxicard. Aspiration for in-house fleet and call centre run by existing council team. Dundee has very good PT coverage and 95% commercial network: good daytime service but gaps in evening services and later at night. Budget for supported services has been reducing, with some early morning services removed. DRT considered good tool for filling geographical and outwith peak-period gaps in scheduled services. Access to the airport is poor: nearest bus stop is 10 to 15 minutes away.	CT/ DRT sector is currently limited in Dundee. Budget for supported bus services is under pressure. Opportunity for DRT to provide best value/ efficiency through replacing high subsidy supported services/ Taxicard. DRT could serve a role in providing access to the airport.
Other sources	Planning and Transport Committee Report - 14 January 2008: A number of Local Bus Services were not continued to be financially supported after 1 April 2008. These were largely early morning and late evening services. DHC Consultancy study on Dundee Community Transport, 2008 – recommends expanding capacity of Dundee Community Transport (DCT) with Council support of £20 per DRT user in lieu of Taxicard support, catering for peak demand of 500 trips per day, door to door transport would generate additional 100,000 trips per year at equivalent cost to public transport, £40k needed for DCT to expand capacity in short-term.	Supported services in early morning and late evening reducing – DRT may serve some needs here. Recent study recommends expanding capacity of door to door transport in Dundee through Dundee Community Transport.
Angus		
Angus Council Interview	Taxicard introduced when mainstream PT services were relatively inaccessible (currently, less so): demand is growing and budget limited/ under pressure. Also a limit on the number of taxis with fully accessible vehicles. DRT bus service operates on a number of routes including Glen Isla: recently tried a DRT service in Pitkennedy, but too expensive to operate. Operates a	DRT could be used to make cost savings where conventional public transport is too expensive, for example, in the Angus Glens. Service gaps could be filled by DRT. A DAR scheme could replace some of service

Type of evidence	Issues identified	Demand for DRT - is DRT the best solution?
	DRT service in area of high deprivation, but demand/ usage low. Buses full at peak times on peak routes, albeit fares considered too high for occasional users compared to regular commuters. Service gaps include: Forfar to Perth and wider Scotland. Stagecoach has taken over Strathtay bus services: potentially 40-50% contract costs increase.	provided by Taxicard, and enable disabled people to travel free with concessionary pass. Good DRT infrastructure in Angus through umbrella Angus Transport Forum.
Other sources	Areas of poor access to GPs (Figure 7.2 in Audit Report – See Appendix A1): • Villages along the A92 Arbroath-Montrose corridor; and • To the west of Brechin/north of Forfar.	Specific areas with poor access to GPs are Villages along the A92 Arbroath-Montrose corridor, and to the west of Brechin/north of Forfar.
Stirling		
Stirling Council Interview	Operate a number of DRT services: Balquhidder is a taxi-based DRT scheme making use of resources already in the area and doing well. DRT a potential solution in rural and/ or areas with low population/ density and where competition from other operators is limited and in particular to replace contract services. Potential areas include: Drymen; Trossachs – Aberfoyle/ Callander/ Strathard; Killin; Tyndrum. Supported bus services are facing budgetary pressure and current gaps mainly in rural areas where services not frequent enough to be attractive (some urban gaps too). Specific rural service gaps include: north of Callander; Aberfoyle to Stirling corridor; Stirling to Balloch corridor (A811); anywhere with shared National Park boundaries/ access and access to the countryside. Specific urban service gaps include: Riverside (evening); Torbrex; Stirling (historic centre); Causewayhead (evening); and, Wallace Park Area (3 buses a day but demand high).	DRT could be used to replace supported services particularly in rural and/ or areas with low population/ density: Drymen; Trossachs – Aberfoyle/ Callander/ Strathard; Killin; Tyndrum. Service gaps could be filled by DRT in urban and rural areas. Good DRT infrastructure in Stirling through Dial a Journey which also manages booking for Taxicard for Stirling, Falkirk and Clackmannanshire.
Perth and Kinross		

Type of evidence	Issues identified	Demand for DRT - is DRT the best solution?
Perth & Kinross Council Interview	Aspiration to standardise CT provision across the board: majority of CT is run by small voluntary groups with many operators being private hire firms and one-man bands. P&K Community Car Association (CCA) launched in June 2008. Gaps in PT provision include: Inveralmond Industrial Estate where Scottish Hydro Headquarters are located (and due to expand) and Tulloch Hill (residential). A new village at Oudenard (circa 1,000 res units) is committed and will need PT connectivity. Corridors with poor service include: Perth/ Blairgowrie/ Dundee; Perth/ Crieff/ Comrie; and aspiration to improve Blairgowrie/ Coupar Angus/ Perth and Kirrimuir/ Forfar/ Dundee. Many of the services outside of Perth City operate on low frequencies. Access to hospitals and health facilities including Ninewells, PRI and the health facility in Pitlochry needs to be improved.	DRT could be used to replace/ compliment inadequate transport provision including: provision for new development: frequency of service; and, access to health/care. Opportunity for CT sector to feed into new 'hospital link' bus services which provide direct links to Ninewells. Good infrastructure in place through umbrella group PKCTG.
Other sources	CT Mapping in Audit Report (Figure 6.1 – See Appendix A4): Crieff and Crianlarich are substantial settlements with no identified CT/DRT. Areas of poor access to GPs (Figure 7.2 in Audit Report – See Appendix A1): • Villages along the A85 Perth-Crieff corridor; and • Immediately north of Pitlochry. *Further discussion with P&K Council/ Stakeholders:* Potential areas for DRT pilots within P&K are: Aberdalgie (potentially a taxi-based shopper service); Crieff to Auchterarder – existing service with very low demand despite improvements over the years; Lochearnhead – St Fillans; North of Blairgowrie, Kirkmichael – some demand for PT from workers related to winter sports etc; Perth City; and Friarton Harbour area - shift workers and limited PT; Inveralmond Industrial Estate; Meigle to Perth corridor is ideal area for DRT service; and area between Kinbuck and Braco lacks public transport accessibility with some opportunities for employment around this area.	DRT could be used to replace/ compliment inadequate transport provision on a number of routes/ areas (identified to the left), where characteristics of the areas/ existing service provision support the introduction of DRT.

Population characteristics across TACTRAN region

4.4 We have reviewed statistics from Scottish Household Survey, mid-year population estimates from The General Register Office for Scotland (GROS), and data from the accessibility analysis carried out for the TACTRAN Bus/ CT/ DRT Strategy, to further demonstrate potential demand for DRT in the TACTRAN area.

TABLE 4-3 FACTORS INFLUENCING DEMAND FOR DRT

Characteristic / Local authority area	**Scotland**	**Dundee**	**Stirling**	**Perth & Kinross**	**Angus**
Population (estimated 2007)[5]	5,144,200	142,150	88,190	142,140	109,870
% households with no cars available for private use (2005-06)[6]	32	47	22	19	26
% has concessionary fare pass and uses every day or almost every day (2005-06)[7]	13	16	3	11	4
% who used bus in last month every day or almost every day (2005-06)[8]	12	12	7	6	5
% households up to 6 mins walking time to nearest bus stop with at least 1 bus per hour[9]	61	75	54	66	56
% pensionable age and over[10]	19	20	18	22	21
% aged over 75[11]	7	8	7	9	8
Whether anyone in the household has a long-standing limiting illness, health problem or disability % 2003/04[12]	33	36	27	30	36

[5] Scotland's Population 2007: The Registrar General's Annual Review of Demographic Trends: 153rd Edition http://www.gro-scotland.gov.uk/files1/stats/scotlands-population-2007-the-register-generals-annual-review-153rd-edition/j994408.htm

[6] Transport across Scotland in 2005 and 2006: some Scottish Household Survey results for parts of Scotland, Table 1 Households - with cars available for private use, and with bicycles which can be used by adults: 2005 and 2006 http://www.scotland.gov.uk/Publications/2007/11/29142052/11.

[7] Ibid, Table 14

[8] Ibid, Table 11

[9] Ibid, Table 7

[10] www.scrol.gov.uk

[11] Ibid

[12] Scottish Household Survey results 2003/04, SHS Interactive Tables, http://www.scotland.gov.uk/Topics/Statistics/16002/shs-search.

Characteristic / Local authority area	**Scotland**	**Dundee**	**Stirling**	**Perth & Kinross**	**Angus**
% Pop classed as Large Urban Areas[13]	39	99.5	0	1.2	7.5
% Other Urban Areas	29.8	0	52.5	32.4	53.8
% Accessible Small Towns	9.1	0	9.2	9.7	12.1
% Remote Small Towns	3.7	0	0	10.8	0
% Accessible Rural	12.0	0.5	31.4	33.3	25.9
% Remote Rural	6.4	0	7	12.6	0.6

[13] Scottish Executive Urban Rural Classification 2005 – 2006, Table 1
http://openscotland.gov.uk/Publications/2006/07/31114822/5

5 Planning objectives for DRT Pilot Areas

5.1 Developing planning objectives for the rural and urban DRT pilot schemes is necessary to inform the generation, refinement and appraisal of options/ areas. These are drawn together from the analysis undertaken in Chapter 4, above, and also from an analysis of how the existing transport infrastructure performs in relation to the stated aims and objectives described in Chapter 3, Policy Context.

5.2 A set of draft planning objectives for DRT pilots in rural and urban areas within TACTRAN has been developed. These are shown in Table 5-1 below.

TABLE 5-1 DRAFT PLANNING OBJECTIVES FOR PILOT DRT SCHEMES

Urban	Rural
1. To serve unmet need where more appropriate alternatives cannot meet this need effectively	1. To serve unmet need where more appropriate alternatives cannot meet this need effectively
2. To serve existing "met" need more effectively and efficiently	2. To serve existing "met" need more effectively and efficiently
3. To build on existing capacity where appropriate	3. To build on existing capacity where appropriate
4. To improve accessibility of specified groups and / or to specified destinations	4. To improve general accessibility of rural communities, and in particular to health, employment, education and leisure/tourism
5. To feed into conventional passenger transport services	5. To feed into conventional passenger transport services

5.3 Table 5-2 (urban) and Table 5-3 (rural) demonstrate how these draft Pilot DRT objectives relate back to the objectives of the Bus/DRT/CT Strategy.

TABLE 5-2 FIT OF URBAN PILOT DRAFT PLANNING OBJECTIVES WITH BUS / CT / DRT STRATEGY OBJECTIVES

Draft Pilot Planning Objectives / Strategy Objectives	1 Access to key regional centre	2 Remove barriers	3 Access to health	4 Information provision	5 Employment, education, retail and tourism	6 Journey times and reliability	7 Environmental standards	8 Modal shift	9 Physical activity and leisure	10 Passenger safety	11 Modal integration	12 Land use planning integration
1. To serve unmet need where more appropriate alternatives cannot meet this need effectively	✓	✓	✓		✓			✓	✓		✓	
2. To serve existing "met" need more effectively and efficiently	✓	✓	✓		✓		✓	✓				
3. To build on existing capacity where appropriate		✓		✓								
4. To improve accessibility of specified groups and / or to specified destinations	✓	✓	✓		✓	✓		✓	✓		✓	
5. To feed into conventional passenger transport services	✓	✓	✓	✓	✓	✓		✓	✓		✓	

TABLE 5-3 FIT OF RURAL PILOT DRAFT PLANNING OBJECTIVES WITH BUS / CT / DRT STRATEGY OBJECTIVES

Draft Pilot Planning Objectives / Strategy Objectives	1 Access to key regional centre	2 Remove barriers	3 Access to health	4 Information provision	5 Employment, education, retail and tourism	6 Journey times and reliability	7 Environmental standards	8 Modal shift	9 Physical activity and leisure	10 Passenger safety	11 Modal integration	12 Land use planning integration
1. To serve unmet need where more appropriate alternatives cannot meet this need effectively	✓	✓	✓		✓			✓	✓		✓	
2. To serve existing "met" need more effectively and efficiently	✓	✓	✓		✓		✓	✓				
3. To build on existing capacity where appropriate		✓		✓								
4. To improve general accessibility of rural communities, and in particular to health, employment, education and leisure/tourism	✓	✓	✓		✓	✓		✓	✓		✓	
5. To feed into conventional passenger transport services	✓	✓	✓	✓	✓	✓		✓	✓		✓	

6 Generating a "list" of potential pilot areas

6.1 In order to identify the most appropriate solution/ area for a pilot DRT scheme, a full range of options/ areas should be considered, even where there appears to be an "obvious" solution.

6.2 From the information gathered and demonstrated in Chapter 4, we have generated a list of potential urban and rural areas where DRT could address/ meet a specific identified need.

6.3 Table 6-1 presents the urban scenario and Table 6-2 presents the rural scenario.

TABLE 6-1 POTENTIAL URBAN DRT PILOT AREAS TO ADDRESS IDENTIFIED NEED

Criteria and Evidence Source	Potential Urban Area
Lack of access to a car - Table 4-3	Dundee
Population of pensionable age - Table 4-3	Dundee (highest proportion of people over aged 65 located in the Mid Craigie/ Linlathen area)
Population in ill health and/or disability - Table 4-3	Dundee (Mid Craigie/ Linlathen area has levels of limiting long-term illness more than twice the average for Dundee)
Lack of access and proximity to frequent bus service - Table 4-3	
Accessibility analysis showing poor access – Table 4-2	Around urban areas between Brechin, Montrose, Arbroath and Forfar
Existing CT / DRT provision is not sufficient for demand – Table 4-1/ 4-2	Dundee
Existing CT/ DRT infrastructure with key organisation that could help develop / run pilots - Table 4-1/ 4-2	Angus Transport Forum, Stirling Order of Malta DAR, Perth and Kinross CT Group
Specific gaps and / or inadequacies in PT network that could be met by DRT – Table 4-2	Dundee - Waterfront, City Quay, new houses in western villages, and A92. Other gaps are West end of Dundee, and Perth Road area, waterfront and Blackness Road and Riverside, housing schemes to the north of the town. Access to the airport. Perth - Inveralmond industrial estate; a new housing development at Tulloch Hill; Friarton Harbour area.
Demand for Taxicard is growing with consequent budgetary pressure – Table 4-1/ 4-2	Dundee
Budgetary pressures on supported services, with some services being reduced/dropped – Table 4-2	Dundee – some early morning and late evening services

TABLE 6-2 POTENTIAL RURAL DRT PILOT AREAS TO ADDRESS IDENTIFIED NEED

Criteria and Evidence Source	Potential Rural Area
Lack of access to a car - Table 4-3	
Population of pensionable age - Table 4-3	P&K, Angus
Population in ill health and/or disability - Table 4-3	Angus
Lack of access and proximity to frequent bus service - Table 4-3	Stirling, Angus
Accessibility analysis showing poor access – Table 4-2	Rural areas around Aberfeldy, Pitlochry, Dunkeld, north of Kirriemuir, Killin, Crianlarich
Existing CT / DRT provision is not sufficient for demand – Table 4-1/ 4-2	Crieff and Crianlarich
Existing CT/ DRT infrastructure with key organisation that could help develop / run pilots - Table 4-1/ 4-2	Angus Transport Forum, Stirling Order of Malta DAR, Perth and Kinross CT Group
Specific gaps and / or inadequacies in PT network that could be met by DRT – Table 4-2	Angus – Forfar to Perth; specific areas with poor access to GPs are Villages along the A92 Arbroath-Montrose corridor, and to the west of Brechin/north of Forfar Stirlingshire - specific rural provision gaps north of Callander, Aberfoyle to Stirling Corridor, anywhere with shared National Park boundaries, Stirling to Balloch, and Kinbuck-Braco. Perthshire - Service 57 Perth – Blairgowrie – Dundee and Service 16 Perth – Dundee; north of Blairgowrie – Kirkmichael; corridor west of Perth to Crieff and Comrie; Crieff-Auchterarder; Killin – Aberfeldy; access to hospitals and health facilities including Ninewells and PRI and the health facility in Pitlochry; Blairgowrie – Coupar Angus – Perth and Kirrimuir – Forfar – Dundee; linking new village at Oudenard near Bridge of Earn (approx 1,000 houses) to PT network; poor access to GPs include villages along the A85 Perth-Crieff corridor, and immediately north of Pitlochry; Meigle to Perth corridor; Aberdalgie.
Demand for Taxicard is growing with consequent budgetary pressure – Table 4-1/ 4-2	Angus
Budgetary pressures on supported services, with some services being reduced/dropped – Table 4-2	Stirling Council area – budgetary pressure to cut services likely in near future

6.4 From Table 6-1 and Table 6-2, a number of geographical areas have been grouped together to generate a potential list of urban and rural DRT pilot areas. These areas are indicated in regional mapping presented in Appendix B.

6.5 Table 6-3 demonstrates how these DRT pilot areas contribute to RTS Bus/CT/DRT Strategy objectives and actions. Shading in green indicates a positive contribution. The Objectives are listed in Table 3-1, and are presented again below to enable quick reference:

- 1: To ensure that everyone across the region has access to a key regional centre, where they can access a range of services, facilities and opportunities.
- 2: To remove physical, financial and perceptual barriers to accessing road based passenger transport services and infrastructure.
- 3: To enable patients and visitors to access necessary health facilities by road based passenger transport
- 4: To ensure a level of information provision across the whole road based passenger transport network that promotes its use and does not hinder accessibility.
- 5: To ensure that key employment, education, retail and tourism locations are linked to the passenger transport network by a service that meets the needs of the local economy.
- 6: To achieve improvements in journey times and the reliability of the region's road based passenger transport network.
- 7: To enhance the environmental standards of the road based passenger transport fleet and infrastructure.
- 8: To achieve greater use of road based passenger transport services in place of travel by private car
- 9: To increase physical activity and improve access to leisure opportunities across the region by road based passenger transport.
- 10: To provide for and improve the safety of passengers when travelling on the road based passenger transport network.
- 11: To increase connectivity between road based passenger transport services and between different modes of transport
- 12: To strengthen the links between land-use planning and provision of road based passenger transport.

TABLE 6-3 FIT OF POTENTIAL PILOT AREAS WITH BUS/ CT/ DRT STRATEGY OBJECTIVES

Potential pilot areas / Strategy objectives	1	2	3	4	5	6	7	8	9	10	11	12
Dundee city												
Perth city												
Killin, Tyndrum												
Trossachs, Aberfoyle, Callander												
Crieff, Auchterarder, Aberdalgie - Perth, Kinbuck - Braco												
Pitlochry, Aberfeldy, Dunkeld												
Aberfoyle, Strathard Drymen & National Park Boundaries												
Strathmore West (Meigle, Blairgowrie, Forfar)												
Strathmore East (around Angus towns)												
Angus Glens												

7 Appraisal of List of Potential Pilot Areas

7.1 Table 7-1 sets out a high-level appraisal of the grouped areas as potential DRT pilots. It should be noted that this selection process has not considered non-spatial demand criteria in-depth, such as population types who could be served by a DRT pilot scheme. Where this information was available in our review of Initial Evidence of Demand (Chapter 4) above, this has been commented upon, under "Demand/ Market" in the aforementioned Table.

7.2 Table 7-1 demonstrates how each potential pilot area performs against a set of key criteria as follows:

- Which RTS Bus Strategy objectives and actions are furthered by the proposed pilot area (as informed by Table 6-3);
- Demand / Market – where the need for DRT may lie, although this will need to be developed further in later stages of this study;
- Capacity to build on – commentary on existing organisational capacity and infrastructure which may ease the introduction of a pilot;
- Financial – commentary on financial factors such as budgetary pressures currently and potential funding opportunities available;
- Public acceptability – commentary on issues around public acceptability of DRT in the pilot areas named;
- Transferability – the representativeness of the area as "typical" of the Tactran region, to assist with the roll-out of DRT schemes to other parts of the region using lessons learnt from the pilots; and
- Authority boundary benefits – commentary on whether the potential pilot area generates individual or cross-boundary benefits.

7.3 Green in Table 7-1 indicates strong performance of a potential pilot area against the specific criteria shown (e.g. demand), whilst amber suggests a more moderate assessment.

TABLE 7-1 HIGH-LEVEL APPRAISAL TABLE FOR LIST OF POTENTIAL PILOT AREAS

	Dundee city	Perth city	Killin, Tyndrum	Trossachs, Aberfoyle, Callander	Crieff, Auchterarder, Aberdalgie-Perth, Kinbuck-Braco	Pitlochry, Aberfeldy, Dunkeld	Aberfoyle, Strathard, Drymen & National Park Boundaries	Strathmore West (Meigle, Blairgowrie, Forfar)	Strathmore East (around Angus towns)	Angus Glens
Fit with Bus Strategy objectives	Obj 1,2,3,9,11	Obj 1,2,3,9,11	Obj 2,3,5,8,9,11	Obj 2,3,5,8,9,11	Obj 1,2,3,5,8,9,11	Obj 2,3,5,8,9,11	Obj 2,3,5,8,9,11	Obj 1,2,3,5,8,9,11	Obj 1,2,3,8,9,11	Obj 2,3,5,8,9,11
Fit with Bus Strategy actions	NC1, NC3, NC4, IV7	NC1, NC4	NC2, NP9, IV9	NC2, NP9, IV9	NC2	NC2	NC2, NP9, IV9	NC2	NC2	NC2
Demand / Market	Perceived significant unmet demand amongst elderly and disabled; good PT network	Some potential demand linking to mainstream bus; limited demand for taxicard transport	Rural accessibility in general, including visitors for leisure	Rural accessibility in general, including visitors for leisure	Rural accessibility in general, perceived demand for social/ leisure opportunities/ intra-town/ village transport	Rural accessibility in general	Rural accessibility in general, including visitors for leisure	Rural accessibility in general, including visitors for leisure	Rural accessibility in general	Rural accessibility in general, including visitors for leisure
Capacity to build on	Some CT (DCT), although limited; multiple taxi operators	Some, CT umbrella group (PKCTG) and other CT operators;	Significant (Stirling DAR central booking); small no. of local taxi	Significant (Stirling DAR central booking); small no. of local taxi	Some, CT umbrella group (PKCTG) and other CT operators; taxi operators;	Some, CT umbrella group (PKCTG) and other CT operators;	Significant (Stirling DAR central booking); small no. of local taxi	Significant (ATF & PKCTG, other CT operators); local taxi operators;	Significant existing infrastructure (ATF)	Significant existing infrastructure (ATF)

	Dundee city	Perth city	Killin, Tyndrum	Trossachs, Aberfoyle, Callander	Crieff, Auchterarder, Aberdalgie-Perth, Kinbuck-Braco	Pitlochry, Aberfeldy, Dunkeld	Aberfoyle, Strathard, Drymen & National Park Boundaries	Strathmore West (Meigle, Blairgowrie, Forfar)	Strathmore East (around Angus towns)	Angus Glens
	including one already contracted for Taxicard; private bus operator operating Friendly Bus initiative	taxi operators; private bus sector with suitable vehicles	operators	operators	private bus sector with suitable vehicles	taxi operators; private bus sector with suitable vehicles	operators However, being rolled out as DRT pilot by Stirling Council in any case	private bus operators		
Financial	Budgetary pressure on alternatives (Taxicard and supported bus services), funding to be reallocated RTS funding may be available for pilot	RTS funding may be available for pilot. P&KC may have small fund for DRT/CT.	RTS funding may be available for pilot Budgetary pressure on high cost supported bus services, budget could be reallocated	RTS funding may be available for pilot Budgetary pressure on high cost supported bus services, budget could be reallocated	RTS funding may be available for pilot P&KC may have small fund for DRT/CT.	RTS funding may be available for pilot. P&KC may have small fund for DRT/CT.	RTS funding may be available for pilot Budgetary pressure on high cost supported bus services, budget could be reallocated	RTS funding may be available for pilot. P&KC may have small fund for DRT/CT.	Budgetary pressure on Taxicard RTS funding may be available for pilot	RTS funding may be available for pilot. P&KC may have small fund for DRT/CT.
Public	Pressure	Potential	May be	May be	May be popular	No issues	May be	No issues	No issues	No issues

	Dundee city	Perth city	Killin, Tyndrum	Trossachs, Aberfoyle, Callander	Crieff, Auchterarder, Aberdalgie-Perth, Kinbuck-Braco	Pitlochry, Aberfeldy, Dunkeld	Aberfoyle, Strathard, Drymen & National Park Boundaries	Strathmore West (Meigle, Blairgowrie, Forfar)	Strathmore East (around Angus towns)	Angus Glens
acceptability	from communities for DRT; potential competition issues with taxis although dependent on market served	competition issues with taxis although dependent on market served	popular if replacing a cut supported bus service	popular if replacing a cut supported bus service	if can benefit a number of community groups	known	popular if replacing a cut supported bus service	known	known	known
Transferability	Comparable only to Perth	Comparable only to Dundee	Comparable to other remote rural areas	Comparable to other remote rural areas	Comparable to rural and small towns areas	Comparable to rural and small towns areas	Comparable to other remote rural areas	Comparable to rural and small towns areas	Comparable to other remote rural areas	Comparable to other remote rural areas
Authority boundary benefits	Dundee only	Perth & Kinross Only	Stirling only	Stirling only	Stirling and Perth & Kinross	Perth & Kinross only	Stirling only – although includes National Park	Perth & Kinross and Angus	Angus only	Angus only

Urban DRT pilot area analysis

7.4 The analysis above suggests that Dundee City has a better "fit" with the TACTRAN Bus/ CT/ DRT Strategy actions, compared to Perth City and that performance against Demand/ Market and Public Acceptability is stronger within Dundee.

Rural DRT pilot area analysis

7.5 The rural DRT pilot area analysis above indicates a narrow "scoring"-range for the performance of the potential pilot areas against the key criteria. Using an iterative process and removing those areas which are outperformed by other areas, we can deduce those areas which would be most appropriate for commencing a rural DRT pilot scheme.

7.6 In the first instance we can remove the Aberfoyle/ Strathard/ Drymen and National Park Boundaries area, since Stirling Council are intending to progress a separate DRT scheme in this area in the near future. The Pitlochry, Aberfeldy, Dunkeld area only scores well against the "Fit with Bus Strategy Objectives" and "Transferability" criteria, and should therefore also be discounted.

7.7 This leaves Crieff/ Auchterarder/ Aberdalgie-Perth/ Kinbuck-Braco and Strathmore West satisfying the greatest number of criteria (5), whilst Killin, Tyndrum and Trossachs/ Aberfoyle/ Callander satisfy 4 criteria and Strathmore East and Angus Glens satisfying 3 criteria. Strathmore East and Angus Glens should also be discounted.

7.8 The difference between Crieff/ Auchterarder/ Aberdalgie-Perth/ Kinbuck-Braco and Strathmore West is their performance against "Public Acceptability" (where Crieff/ Auchterarder/ Aberdalgie-Perth/ Kinbuck-Braco scores well) and "Capacity to Build On" criteria (where Strathmore West performs better). Both of these criteria are relatively key to the successful operation of a rural DRT pilot scheme, and one area cannot be selected as preferential over the other on this basis.

7.9 Killin, Tyndrum and Trossachs, Aberfoyle, Callander perform equally well against the same criteria and similarly cannot be refined further in selection terms.

7.10 The analysis above therefore suggests the following hierarchy for the rural Pilot DRT selection area:

- Crieff/ Auchterarder/ Aberdalgie-Perth/ Kinbuck-Braco and/ or Strathmore West; and
- Killin/ Tyndrum and/ or Trossachs, Aberfoyle, Callander.

8 Conclusions and recommendations

8.1 The following could be considered as a shortlist of areas to take forward into urban and rural pilot DRT schemes:

- Urban – Dundee
- Rural:
  - Crieff/ Auchterarder/ Aberdalgie-Perth/ Kinbuck-Braco and/ or Strathmore West; and
  - Killin/ Tyndrum and/ or Trossachs, Aberfoyle, Callander.

8.2 Whilst the analysis above, indicates that the hierarchy of rural areas for a DRT pilot is relevant in terms of the performance of each area against the study planning objectives and select criteria, overall there is insufficient variation in performance and a "distinctive" selection for the pilot area does not emerge. It is therefore recommended that TACTRAN determine the most appropriate area for a rural DRT pilot scheme.

8.3 It is expected that a further iteration on location selection will be required to identify a more specific operating area within the recommended urban and rural areas.

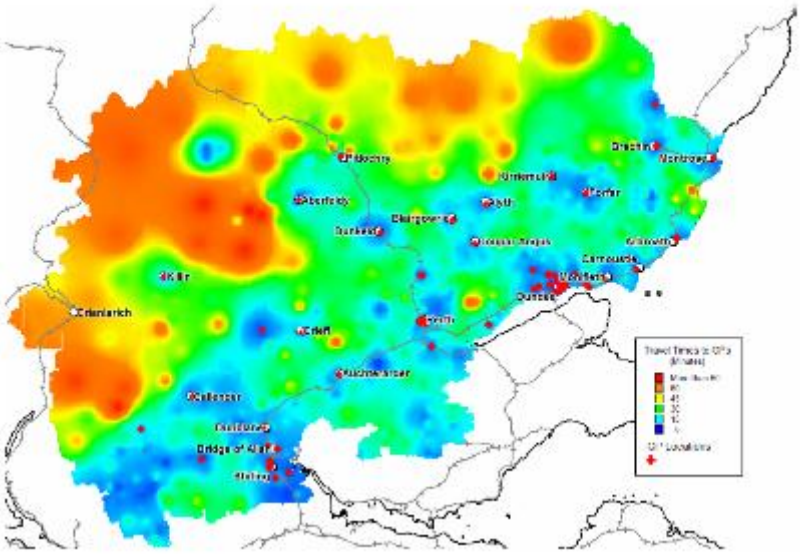
APPENDIX

A

BUS/ CT/ DRT STRATEGY AUDIT REPORT FIGURES

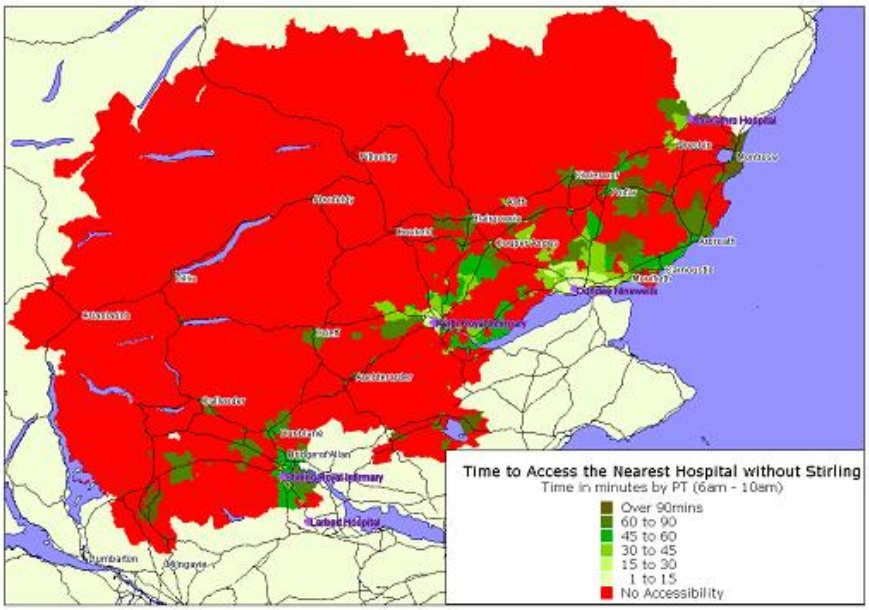
A1. PUBLIC TRANSPORT TRAVEL TIMES

FIGURE 7.2 PUBLIC TRANSPORT TRAVEL TIMES (DHC)



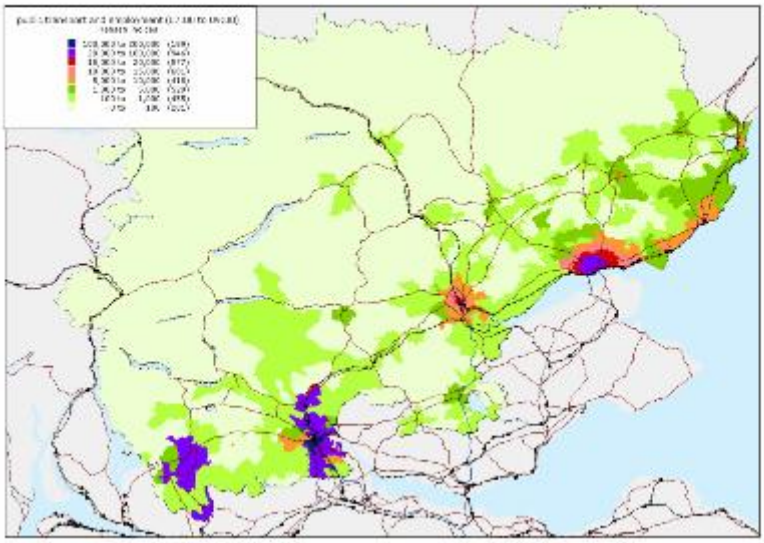
A2. PUBLIC TRANSPORT TRAVEL TIMES TO HOSPITALS (DHC)

FIGURE 7.3 PUBLIC TRANSPORT TRAVEL TIMES TO HOSPITALS (DHC)



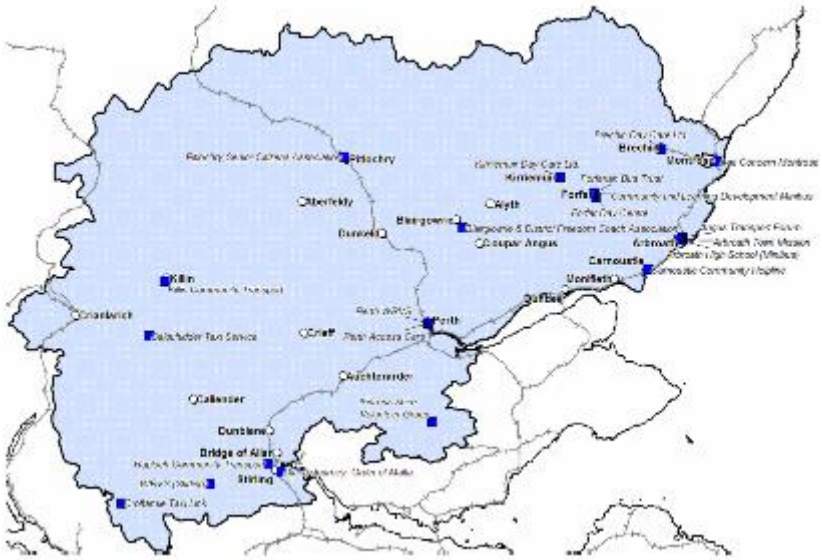
A3. AM PEAK ACCESS TO EMPLOYMENT

FIGURE 7.6 AM PEAK ACCESS TO EMPLOYMENT



A4. CT/ DRT SERVICES IN TACTRAN AREA

FIGURE 6.1 CT/DRT SERVICES IN TACTRAN AREA



APPENDIX

B

MAP INDICATING POTENTIAL LIST OF URBAN AND RURAL DRT PILOT AREAS

B1.

CONTROL SHEET

Project/Proposal Name	TACTRAN DRT Pilot Feasibility Study
Document Title	Pilot Area Selection
Client Contract/Project No.	
SDG Project/Proposal No.	22080201

ISSUE HISTORY

Issue No.	Date	Details
2	**24/03/09**	**Interim_issue**

REVIEW

Originator	(DEA) KZD	
Other Contributors		
Review by	**Print**	Phil Berczuk
	Sign	

DISTRIBUTION

Clients	TACTRAN
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