



**CAMBRIDGESHIRE
& PETERBOROUGH**
COMBINED AUTHORITY

Future role of DRT in Cambridgeshire and Peterborough

Research report

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Future Role of DRT in Cambridgeshire & Peterborough

Revised Draft

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Executive Summary

Cambridgeshire and Peterborough Combined Authority (CPCA) has an ambition to see a comprehensive, frequent and reliable bus network across its region, which will enable a high proportion of the population to travel by public transport in preference to the private car. The Local Transport and Connectivity Plan sets out an ambition to reduce private car mileage by 15% by 2030. Key to achieving this will be a significant uplift in public transport provision and usage.

CPCA recognises, however, that fixed route bus services are not necessarily the best way to serve all travel demands. Therefore, it wishes to understand where and when more flexible demand responsive transport (DRT) services might play a part within a wider comprehensive and coordinated public transport network.

This study seeks to provide an understanding of where DRT services work well and how they might play a part in serving areas of Cambridgeshire and Peterborough in the short, medium and longer terms.

In the context of the considerable work on bus reform work being undertaken by CPCA, along with newly adopted Bus Strategy and accompanying Bus Service Improvement Plan, this report considers DRT case studies from across the UK and beyond, identifying lessons learnt and pointers for DRT service development in Cambridgeshire and Peterborough.

There is no evidence to date that DRT is commercially viable. Local Transport Authorities, as well as transport operators and technology providers, have largely accepted this reality, but recognise the role of DRT in enabling social inclusion and providing access for areas which are hard to serve by conventional bus services.

Although a number of DRT services, particularly those funded by DfT's Rural Mobility Fund, have yet to be fully evaluated, it is anticipated that many will consider providing less coverage in the future as funding reduces and explore alternative operating models, such as 'many-to-few' rather than 'many-to-many', to enable greater levels of ride sharing and less dead mileage. Hybrid models of DRT, whereby peak time services are scheduled, potentially including school movements, with on-demand services between the peaks, are expected to become more common as authorities look to deliver more cost-effective provision.

The use of booking apps has influenced the profile of DRT users, with many being under 65, even though free concessionary travel is generally permitted on DRT services. A call centre

facility should be provided to supplement app bookings, both to help such services be more inclusive and to provide a human point of contact when problems occur.

The current Ting DRT service in West Huntingdonshire has been well received and is clearly enabling some trips that were not previously possible by public transport. That said, vehicles seem to get drawn towards the towns, meaning that they are not always as available in the rural areas. Whilst advanced bookings can be placed, they are not confirmed until 24 hours before travel, resulting in uncertainty for those users who need surety of their booking.

The beauty of DRT services is that they can evolve over time, based on patterns of demand and data. Algorithms in the software systems can be refined to improve operational efficiencies or user experience. Consequently, further experience from Ting can be used to develop and refine the service to reach an optimal position.

The report considers that a single booking and scheduling system should be implemented, either as a standalone system for the CPCA or by linking with another local authority.

There are recommendations for up to four new pilot services, along with some potential refinements to Ting. These pilots will trial different DRT elements to assess their relevance to the particular operating areas.

In the short term (over the next three years), it is suggested that CPCA implements, monitors and evaluates up to four DRT pilots. Based on two-vehicle operations (although this would need to be assessed more carefully on potential demand), the ballpark annual cost for a single DRT pilot would be £300,000, totalling £900,000 over the three-year life of the pilot. During this period, a feasibility study should be undertaken to understand the scale and scope of a potential Mobility as a Service (MaaS) application which combines DDRT with other sustainable travel modes.

From the end of year three to the end of year five, CPCA should explore integrating DRT with other dedicated services, such as community transport, to achieve economies of scale and other efficiencies. This might also go alongside the implementation of a MaaS application for the Combined Authority area as appropriate, based on the results of the feasibility study, incorporating other sustainable travel modes.

Finally, from year 10 (or sooner if new sources of funding can be identified), there may be potential to roll out DRT on an area-wide basis, focusing on areas which are difficult to serve by conventional bus services. It may be necessary to remove under-used supported services to fund their replacement in the form of DDRT.

In the longer term, from 2035 onwards the Combined Authority might be in a position to consider the application of autonomous vehicles to DRT, once trials have been completed on conventional fixed route services.

1. Introduction

- 1.1 This research was commissioned by Cambridgeshire and Peterborough Combined Authority (CPCA) to examine the application of Demand Responsive Transport (DRT) across the UK and provide an understanding of what the future position might look like for the provision of DRT services in Cambridgeshire and Peterborough, in the short (less than two years), medium (two to five years) and long term (10 to 20 years).
- 1.2 CPCA has an ambition to provide a comprehensive, frequent and reliable bus network across Cambridgeshire and Peterborough within the next few years. The network will enable a high proportion of the population to be able to travel by public transport in preference to the private car. However, it is recognised that fixed route bus services are not necessarily the best way to meet the aim in all circumstances and therefore there is an interest in understanding what part more flexible services might play as part of an overall coordinated bus network.
- 1.3 Demand Responsive Transport or 'DRT' is the collective name for bookable transport services that operate in response to expressed demand. Services offer varying degrees of flexibility to provide shared transport to users who specify or request their pick-up and/or drop-off times and locations.
- 1.4 Within the national, regional, and local policy context and against the backdrop of the changing local bus network, a series of recommendations has been prepared for how, where and when DRT might be introduced in the CPCA area. Research has focused on the application of DRT to date, how it has been introduced in different operating environments and the effectiveness of a range of models of DRT service in meeting different policy objectives.

Methodology

- 1.5 A desk-based review was conducted, exploring the development, application and performance of DRT locally, nationally and internationally. A range of models of DRT service provision were examined with a view to determining their replicability in different parts of the Combined Authority area. A cross section of case studies was collated and assessed, to identify lessons learnt and issues to be avoided in any future model for Cambridgeshire and Peterborough.
- 1.6 An assessment of the 'Ting' DRT service in operation in West Huntingdonshire was undertaken, based on the results of a user survey and engagement with the current operator.

- 1.7 Interpreting this information and drawing on wider understanding of effective DRT models, recommendations were prepared for the implementation of DRT in pilot areas across Cambridgeshire and Peterborough.
- 1.8 Following this introduction, Section 2 provides further detail regarding the features and models of DRT, as well as the strengths, weaknesses, opportunities and challenges of implementing DRT. Section 3 sets the national, regional, and local context for DRT as part of the wider public transport mix. Section 4 provides a series of past and present case studies of DRT from the UK and beyond, as well as key lessons learnt, while Section 5 provides a summary and assessment of the Ting DRT operation in West Huntingdonshire.
- 1.9 Section 6 provides an overview of the future direction for DRT. Finally, Section 7 provides recommendations for the rollout of DRT in the Combined Authority area, including the anticipated cost of a series of pilots and measures of success for DRT.

2. Demand Responsive Transport (DRT)

Development of DRT¹

- 2.1 Whilst there had been interest in DRT from the 1970s, in the 1980s DRT was generally limited to niche markets (such as Dial-a-Ride or community transport), small scale services or replacements for expensive and poorly used supported conventional bus services (such as the innovative HomeHoppa taxibus service in Bedfordshire).²
- 2.2 DRT services saw growth in England with the advent of Rural Bus Challenge funding in 1998. The aim of these services was to see whether a different type of service could stem the decline of rural bus services. However, there were various problems:³
- High cost per passenger trip (due to the costs of drivers, call centres and IT systems)
 - Low usage and revenue
 - DRT not integrated into the wider policy context
 - Challenge funding timescales didn't allow for detailed planning
 - Services introduced in addition to conventional ones
 - Lack of interest from operators in operating such services
 - Perceptions that services were not public transport, but for certain groups, particularly as membership registration was needed
 - People preferred fixed route services, even if they were infrequent
- 2.3 Despite these problems, Challenge funding did help develop, test and use new technology, including vehicle tracking and systems for routing and scheduling. It also highlighted the complexities of different regulations and licensing for the operation of smaller vehicles, which constrained the design and operation of services. Various DRT services introduced with Challenge funding started to be rationalised or withdrawn as external funding came to an end and pressure mounted on budgets to maintain main bus services.
- 2.4 Wiltshire introduced its Wigglybus in 1998, then developed other services, such as 'Hopper' and taxi-based DRT. Whilst critical of the ad-hoc development of these

¹ [The-Future-of-Rural-Bus-Services.pdf \(bettertransport.org.uk\)](#)

² Peter Hardy (2016): 'Rural public transport: does it have a future', <https://www.systra.co.uk/index.php/news-items/latest-thinking/156-rural-public-transport-does-it-have-a-future>, accessed 7 March 2018

³ Loughborough University for Wiltshire County Council (July 2006): Evaluation study of demand responsive transport services in Wiltshire

services, randomly-organised booking arrangements, confused branding and marketing and complex fares structures, the evaluation report noted that Wiltshire's DRT services performed well in respect of usage and cost / passenger compared with services elsewhere; this may have been helped by the integration of some school transport requirements. It suggested that 16-seat vehicles were not ideal for DRT operation, as they were generally too small for school transport, but more expensive than 8-seat vehicles.

2.5 The study recommended that:

- Rural public transport (and DRT) needs to be integrated with wider policy areas.
- DRT needs to be developed more systematically (identifying needs clearly and establishing appropriate solutions).
- DRT services should be standardised and share a single call centre.
- Greater integration with other types of transport (SEN, social care, NEPT) should be investigated, without unduly compromising DRT.
- Where appropriate, DRT should act as a feeder to a mainline service.
- Operating arrangements should be as simple as possible.
- Vehicles should either be 8-seats or larger 24-seats.
- Government be lobbied to change restrictive legislation governing smaller vehicles.

2.6 An earlier national study of DRT recommended that licensing, financing and regulatory regimes be simplified; that institutional measures and policies be reformed to grow and support the public transport market as a whole; that more effective marketing and promotional methods be found; and that technology be further developed to more effectively match the right vehicle at the right time to the right place.⁴

2.7 An evaluation of 6 Local Link DRT services in Greater Manchester⁵ concluded that ingredients of success included:

- Good understanding of needs, with the service designed with these in mind.
- Simplicity of operation and booking procedures, with targeted marketing and good customer care.
- Gaining economies of scale in the provision of the service.

⁴ Marcus Enoch: UK Demand Responsive Transport: problems and potential pathways, paper presented to the DRT Public Transport Conference, Aston University, 16 November 2005

⁵ Peter Hardy, Nicola Kane & Tom Sansom: Evaluating the success of DRT schemes, paper presented to the DRT Public Transport Conference, Aston University, 16 November 2005

- Integrated ticketing and charging realistic fares in recognition of the good service provided (recognising the value people place on the service).
- 2.8 The potential for DRT to play an important role in rural public transport has been recognised for some time. A 'thinkpiece' for the Commission for Rural Communities in 2009⁶ suggested that there was considerable scope for DRT: "Whilst the experiences of DRT over the last 10 years have seen successes and failures, they have all helped to provide valuable insights into the circumstances and conditions where DRT can be successful. There is much evidence to support the view that there is a role for DRT; the challenge is knowing where, when and how to deploy it as an appropriate solution."
- 2.9 The paper noted that DRT offers various opportunities because of its flexibility and ability to integrate with other services, offer personalised services and be cost effective. It also noted there were several barriers that had been around for a while and still needed to be addressed. Whilst some of those still exist today, such as the complicated regulations and licensing arrangements, others have been addressed through the improvements in technology, which have allowed on-demand transport services to develop and bookings via apps.
- 2.10 The paper suggested that rural DRT services were amongst the most vulnerable of such services, due to the low demand. Therefore, it was considered necessary to develop services that achieved the right balance between three main components: service design, value for money and operational attributes. Services needed to be carefully designed, with clear and specific objectives in mind and kept as simple as possible. Good market knowledge was needed to understand actual needs and demands and relevant local circumstances. Services needed to be part of a wider picture and integrated with other services, combining different types of demand and need to gain economies of scale.
- 2.11 In recent years there has been significant development of DRT services, particularly encouraged by the Government's Rural Mobility Fund and National Bus Strategy. The more dynamic provision of DRT has been facilitated by the various app-based software platforms that handle passenger bookings and vehicle scheduling in real time and on-demand.

⁶ JMP Consultants Ltd (2009): The potential for demand responsive transport to play an increasing role in revitalising rural public transport, for the Commission for Rural Communities

Features of DRT

- 2.12 DRT services encompass a wide variety of non-scheduled bookable services that might be planned and provided in many different ways, using various types and sizes of vehicles operated by a range of service providers across the commercial, public and voluntary sectors.
- 2.13 Furthermore, Dynamic Demand Responsive Transport (DDRT) services have developed, building on digital technologies and the growth in smartphone use.
- 2.14 CoMoUK defines DDRT as a flexible mode of shared transport focused on serving public demand that may be unsuited to conventional scheduled bus services. As the bus network has become increasingly focused on corridors for commercial reasons, DDRT enables access to public transport for people who live more than a short walk from these routes.⁷
- 2.15 DDRT services offer an App-based booking (and payment) option and include the following common features:
- Dynamic routing: unlike fixed-route services, DRT vehicles do not follow predefined routes. Instead, the routes are determined based on passenger demand
 - On-demand booking: passengers can request a ride or make a booking through a dedicated app, website, or phone call. This allows them to specify their desired pick-up and drop-off locations, preferred time window, and any other specific requirements.
 - Shared mobility: DRT encourages shared rides, aiming to maximise vehicle occupancy and reduce congestion. Multiple passengers with similar routes or overlapping pick-up and drop-off points can be grouped together in a single vehicle.
 - Integration with technology: DDRT systems leverage technological advancements such as GPS tracking, real-time data analysis, to efficiently allocate and schedule vehicles based on demand. These technologies can help optimise route planning, reduce wait times, and improve overall operational efficiency.
 - Supplement existing services: DDRT is often seen as a complementary service to traditional fixed-route services, filling gaps in coverage or providing first and last mile connectivity. It can improve accessibility for passengers in areas with limited or no public transport options.

⁷ Digital Demand Responsive Transport – enabling local connections across the UK, CoMoUK (2023)

DRT service types and purpose

2.16 There are several models of DRT provision, including:

- Dial-a-Ride services allow passengers to request a pick-up and drop-off location within a defined service area. Passengers typically make reservations in advance or call a central call centre to book a ride. The operator then co-ordinates the routes to accommodate multiple passengers on the same vehicle.
- Shuttle services operate on fixed routes but offer flexibility in scheduling and stopping points, such as office parks, airports or university campuses. Shuttle services may have designated pick-up points or follow a "flag-down" system where passengers can hail a shuttle along the route. These services provide convenience and reduce congestion by serving multiple passengers making similar journeys.
- Shared mobility services, including DDRT, utilise mobile apps or online platforms to connect passengers travelling in the same direction. Passengers can request a ride and be matched with a driver or other passengers heading towards a similar destination. Shared mobility services reduce the number of individual vehicles on the road and enhance vehicle efficiency.
- Flexible Fixed-Route Services: Some DRT systems combine the flexibility of on-demand services with elements of fixed-route services. These systems have predefined routes, but the timetable or deviations from the route are adjusted based on passenger demand. The service may allow passengers to request pick-ups or drop-offs at designated stops along the fixed route or within a specific deviation range.

Models of DRT provision

Original DRT concepts

2.17 DRT had its origins in 'dial-a-ride' schemes and taxi-based DRT. These systems initially grew from the need to provide accessible transport to those who were unable to access a traditional bus service, particularly before low floor, accessible service buses became the norm. In urban areas, where good levels of scheduled services are available, such schemes require users to register to use the service, rather than it being open to anyone.

2.18 Taxi DRT (shared taxi) services operate in areas where no public transport provision is available and providing it would be cost prohibitive. Users can book a ride on selected

days of the week to defined destinations, usually their nearest local centre with a shop and primary health facilities. Leicestershire and Hampshire County Councils are amongst those authorities to arrange and subsidise such services, as a means of maintaining a basic level of public transport. Such services are simple and relatively low cost (as they offer very limited travel choice or opportunity), but more effective than subsidising a timetabled bus service.

Hybrid DRT

- 2.19 Hybrid DRT services combine the advantages of fixed route services and DRT services to create a more efficient and flexible transport service. The hybrid model typically establishes DRT flex zones around the fixed route(s). These flex zones or 'roaming' zones allow the bus to deviate anywhere within the zone but only when a booking has been made for it to do so. A route(s) will have several fixed stops and one or more roaming zones.

Digital DRT (DDRT)

- 2.20 DDRT systems originated in the United States with systems such as Chariot and Via operating initially urban DRT usually for workers of large organisations. Chariot was an urban ride sharing company which operated across multiple US cities⁸, as well as London in the UK, which was acquired by Ford in 2016, but ceased operations in 2019⁹ due to lower than anticipated patronage.
- 2.21 Many urban schemes have failed to reach commercial revenue numbers, in part due to the easy access of public service buses, but also from a new generation of ride sharing platforms such as 'Uber x' which offer ride sharing in cars and minibuses as part of their already well-established taxi apps.

Software system providers

- 2.22 DRT booking and scheduling software providers are part of a relatively small, international pool of private companies. With operations in the UK, those companies include:
- **Ioki** – Arriva Click (Watford)
 - **Liftango** – FoxConnect (Leicestershire County Council)
 - **Padam** – HertsLynx (Hertfordshire County Council); Novus Flex (Leicester)

⁸ <https://www.cnbc.com/2017/07/27/fords-chariot-aims-to-fill-nyc-transit-gaps-with-ride-sharing-shuttle-service.html>

⁹ <https://www.busandcoachbuyer.com/fords-ride-sharing-chariot-closing/>

- **The Routing Company** (Pingo platform/app) – Flexibus (East Sussex County Council)
- **Vectare** – Ting (Cambridgeshire and Peterborough Combined Authority); Flexibus+ (Norfolk County Council)
- **Via** – TeesFlex (Tees Valley Combined Authority); MK Connect (Milton Keynes City Council); WM On-Demand Coventry (Transport for West Midlands); Fflecsi (Transport for Wales); Flexibus+ (Norfolk County Council)
- **WeDRT** – WestLink (West of England Combined Authority)

DRT SWOC analysis

DRT Strengths, Weaknesses, Opportunities and Challenges

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|---|---|
| <p>Strengths</p> <ul style="list-style-type: none"> • Flexibility: DRT offers flexible routing and scheduling, allowing services to adapt to the needs of passengers in real-time. This flexibility makes it convenient for passengers with varying travel requirements and compliments fixed route buses. • Improved accessibility: DRT can enhance accessibility for individuals who have limited mobility, live in underserved areas, or have specific transport needs. It can provide door-to-door service, serving populations that may face challenges with traditional fixed-route buses. | <p>Weaknesses</p> <ul style="list-style-type: none"> • Efficiency challenges: while DRT can be efficient in an ideal environment, there can be challenges in optimising routes and scheduling, especially when dealing with high-demand areas or many simultaneous requests. Balancing efficiency and passenger demand can be complex and require sophisticated algorithms and technology. • Capacity limitations: DRT services, particularly those using smaller vehicles like cars/MPVs, may have capacity limitations compared to buses or trains. This can pose challenges during peak periods, or when serving a larger number of passengers. This could limit DRT as a worker or school service provision if demand exceeds capacity. • DRT can be a less personalised service than community transport which offers highly personalised support such as sitting friends together to combat social anxiety. |
| <p>Opportunities</p> <ul style="list-style-type: none"> • Integration with technology: the advancement of technology, particularly smartphone apps and GPS tracking, | <p>Challenges</p> <ul style="list-style-type: none"> • Balancing demand and supply: one of the challenges in DRT is maintaining a balance between passenger demand and the |

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| <p>presents opportunities for integration and management of DRT services. Mobile apps can allow passengers to request rides, track vehicles, and receive real-time updates, improving convenience and user experience.</p> <ul style="list-style-type: none">• Data-driven optimisation: DRT services generate vast amounts of data, such as passenger demand patterns and travel behaviour. By leveraging this data and using advanced analytics, local authorities can continue to adapt and optimise the DRT operation and identify demand patterns for new potential fixed route journeys. | <p>available supply of vehicles and drivers. Balancing the dynamic nature of passenger requests with limited resources requires careful planning and optimisation algorithms. Cost balances are also evident with all schemes, balancing waiting times for a vehicle and the size of any DRT zone with the resource required to provide an acceptable level of service within that zone can be challenging, especially in large zones in rural areas</p> <ul style="list-style-type: none">• Funding and sustainability: establishing and sustaining DRT services may require significant investments, especially when considering the need for vehicles, infrastructure, technology, and staffing. Securing long-term funding and developing sustainable business models can be challenging for service providers, particularly in the UK where many are currently reliant on time limited funding streams such as rural mobility fund.• Public perception and adoption: introducing new transport models like DRT may face resistance or scepticism from the public who are accustomed to traditional fixed-route services. Raising awareness and demonstrating the benefits of DRT can be crucial in gaining acceptance and encouraging adoption. Some user groups may be more resistant to elements of DRT than others. UK research is currently showing that DRT services are seeing a higher uptake of younger users and less concessionary travellers than fixed route buses. This could be a resistance to technology in older groups and the familiarity with similar systems, such as Uber, by younger users. |
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3. DRT in context

National context

- 3.1 The UK Government has demonstrated its interest in trialling DRT, including reference in its Future of Mobility Strategy. DfT produced a DRT toolkit for those local authorities considering introducing schemes, including assistance in estimating demand, offering case study examples, and providing regulatory guidance of relevance to DRT operations.
- 3.2 DfT identified several benefits of DRT¹⁰ including:
- Addressing suppressed travel demand – demand which exists but cannot be currently served by traditional fixed route travel economically and so are potential passengers currently forced into private car or taxi services
 - Encouraging active travel – many users of active travel especially cycling are more likely to adopt this as their main mode of travel if longer-distance bus travel is available and in rural areas this is likely to be a DRT solution.
 - Acting as a feeder service into fixed bus routes – bus services provide better journey times and are more efficient when operating more directly with less deviations. In rural locations having DRT services as feeder services can help facilitate this
- 3.3 In 2015, DfT awarded Total Transport funding to 36 authorities to implement pilots designed to identify where cost savings could be achieved by bringing together public transport, NHS transport and dial-a-ride services, to improve efficiency via integrated provision.
- 3.4 Specialist transport services, including non-urgent patient transport also offers opportunities to increase efficiency by integrating vehicles and providing a cost saving when combined with a countywide DRT operation. Challenges in this area stem from the NHS procurement methods and the often-fragmented nature of NHS trusts across the country. An NHS report¹¹ published in 2021 identified DRT as a means of providing non-specialised health journeys; this option could be explored as part of a CPCA DRT scheme. The cost of non-emergency transport to the NHS was £38 per journey - much higher than traditional public transport or DRT. Therefore, using NHS funding to help

¹⁰ <https://www.gov.uk/government/publications/demand-responsive-transport-local-authority-toolkit>

¹¹ [NHS England » Improving non-emergency patient transport services: Report of the non-emergency patient transport review](#)

fund DRT could help to share overall costs and provide lower cost travel solutions for non-emergency patient transport.

- 3.5 In 2020, DfT launched a competitive bidding round for local transport authorities to apply for Rural Mobility Fund (RMF) funding to pilot DRT services in England. In March 2021, 17 authorities were advised of the success of their bids¹². In total, £19.4m was awarded. Most RMF-funded schemes are three-year pilot schemes introducing new DRT services. There is a requirement for each scheme to collect and share data with DfT for national and local analysis during and at the end of the pilots.

Policy context

England's Economic Heartland Regional Strategy

- 3.6 The Strategy¹³ challenges the region to achieve a net zero carbon transport system by 2040. Three of the five points contained within the Strategy's Plan of Action have relevance for the development of DRT:

- Focus on decarbonisation of the transport system by harnessing innovation and supporting solutions which create green economic opportunities
- Promote investment in digital infrastructure as a means of improving connectivity
- Champion increased investment in active travel and shared transport solutions to improve local connectivity to ensure that everyone has the opportunity to realise their potential

- 3.7 The Strategy also indicates that "Delivering new approaches, ownership and business models that facilitate access to transport will be a key part of the transition to net zero." DRT is named as an approach which will be supported where appropriate.

Cambridgeshire and Peterborough Local Transport and Connectivity Plan (LTCP)

- 3.8 The Local Transport and Connectivity Plan¹⁴ outlines how the Combined Authority's long-term strategy can influence transport, considering ongoing regional developments. An Independent Commission on Climate set a target for CPCA of reducing car mileage by 15% by 2030, which will require modal shift away from cars to

¹² [Rural mobility fund: successful bids - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/rural-mobility-fund-successful-bids)

¹³ [Connecting People, Transforming Journeys: Regional Transport Strategy \(eeh-prod-media.s3.amazonaws.com\)](https://eeh-prod-media.s3.amazonaws.com/Connecting+People,+Transforming+Journeys:+Regional+Transport+Strategy.pdf)

¹⁴ <https://cambridgeshirepeterborough-ca.gov.uk/what-we-deliver/transport/local-transport-plan/>

bus, walk and cycle. The LTCP recognises and will seek to deliver a transport system that is efficient, improves access and life chances, is affordable and addresses pollution

- 3.9 The draft Plan¹⁵ indicates that improvements will be tailored to local needs, including DRT in rural areas, feeding into the towns that are then connected by major routes to Cambridge and Peterborough.

CPCA Bus Strategy

- 3.10 CPCA approved an ambitious Bus Strategy in March 2023¹⁶ outlining its long-term plan for buses in the region. The key priorities within the Strategy are:

- Significant enhancement of the bus network, with every aspect improved, to double bus patronage by 2030
- A bus network that is convenient, attractive, and easy to use
- A comprehensive, coordinated network that is understandable
- A fixed route network for cities, inter-urban areas and market towns, which is necessary to accommodate volume
- Service frequencies and co-ordination to facilitate interchange between services
- Areas of dispersed travel demand to be addressed by feeder or more flexible/responsive service

- 3.11 The Strategy¹⁷ highlighted that public consultation revealed that 65% of bus users wanted to see more reliable bus services and 58% of non-bus users cited inconvenience as a reason for not using buses. The Strategy aims to improve reliability through bus priority measures and a refined network and to reduce inconvenience by providing much greater rural coverage and more direct bus links to major centres with reduced journey times.

Greater Cambridge Partnership (GCP) Making Connections

- 3.12 Greater Cambridge Partnership is the local delivery body for the Cambridge City Deal, which will see £500m of Government funding over 15 years targeting improvements to

¹⁵ <https://yourltcp.co.uk/wp-content/uploads/2022/05/Draft-Regional-Section.pdf>

¹⁶ <https://cambridgeshirepeterborough-ca.gov.uk/wp-content/uploads/documents/transport/buses/Cambridgeshire-Peterborough-Combined-Authority-Bus-Strategy-March-2023.pdf>

¹⁷ <https://cambridgeshirepeterborough-ca.gov.uk/wp-content/uploads/documents/transport/buses/Cambridgeshire-Peterborough-Combined-Authority-Bus-Strategy-March-2023.pdf>

housing, infrastructure, transport and education, with the emphasis on improving the prosperity and quality of life for residents.

- 3.13 GCP has outlined plans for significant improvements in public transport and active travel across the Cambridge travel to work area, which would be funded by a proposed road user charge in Cambridge¹⁸, which has been subject to public consultation in late 2022.
- 3.14 The vision for bus for Greater Cambridge produced by GCP includes an intensive fixed route network of urban, inter-urban, arterial, and orbital services, complemented by DRT in areas of lower demand to feed into the core network.
- 3.15 Greater Cambridge Partnership¹⁹ has proposed six DRT zones focussed on:
- Coveney to Ely or Chatteris
 - Rampton Cottenham, Longstanton, Chatteris or Haddenham
 - Yelling to Cambourne, Huntingdon or St Neots
 - Abbotsley to Cambourne or St Neots
 - Horningsea to Newmarket Rd P+R, Bottisham, Ely and Newmarket
 - Shudey Camps to Linton, Haverhill, and Saffron Waldon
- 3.16 Operating hours would be 06:00 to 22:00 Monday to Saturday and 08:00 to 22:00 on Sundays and bank holidays. Bookings, it is suggested, would be available between one week and five minutes in advance with fares covering, not only the DRT journey, but also onward travel to the end destination by connecting bus. CPCA's LTCP also supports this model of DRT, acting as feeder services into fixed bus for onward travel.

Cambridgeshire and Peterborough Bus Service Improvement Plan (BSIP)

- 3.17 In March 2021 Government published the National Bus Strategy (NBS)²⁰ 'Bus Back Better', which outlined long-term ambitions for the bus industry in the wake of challenges resulting from the Covid-19 pandemic. The NBS outlined the need for closer partnership working between operators and local authorities, including on infrastructure, network development, marketing and branding.

¹⁸ <https://www.cambridgeindependent.co.uk/news/58-oppose-cambridge-congestion-charge-gcp-consultation-res-9314541/>

¹⁹ [Interactive bus map launched so people can see how journeys would be transformed by GCP proposals \(contensis.cloud\)](#)

²⁰ [Bus back better - GOV.UK \(www.gov.uk\)](#)

- 3.18 A core element of the NBS is the requirement for every Local Transport Authority to adopt an Enhanced Partnership model for future bus operation, unless following a Bus Franchising approach.
- 3.19 CPCA had already indicated an intention to undertake an assessment of bus franchising, so has not adopted an Enhanced Partnership (EP). The assessment work is ongoing, and will consider how the aspirations of the BSIP might be achieved through bus franchising compared to an EP.
- 3.20 CPCA's BSIP outlines the following targets relevant to DRT operation:
- More comprehensive coverage especially in evenings and weekends – this is likely to include fixed route but in rural areas out of hours coverage may take the form of DRT or DRT feeders into main connections.
 - Semi flexible and semi scheduled services being used as feeders from rural locations via key interchanges, and Mobility hubs into the main bus network with either £1 add on fares for through travel, or integrated ticketing for DRT plus onwards connections.
 - Demand Responsive Transport (DRT) – learning from the trial in West Huntingdonshire, DRT services will be rolled out across other parts of the area outside of Cambridge and Peterborough, to ensure complete public transport coverage. Services will replace infrequent and market day only services, and be planned as an integral part of the overall public transport network"
- 3.21 A new BSIP is currently being formulated to replace the original produced in 2021. This will be the plan by which the aspirations of the Strategy will be delivered and will be subject to annual review.

Current travel trends

- 3.22 According to the Greater Cambridge Partnership²¹, over the past ten years, traffic levels have increased by 10% and Cambridge's morning and afternoon peak periods, with peak traffic volumes and worst congestion, have lengthened by up to 2.5 hours.
- 3.23 Cambridge is currently the 16th most congested city in the country²². This not only impacts commuters by car but also increases the resource required to maintain bus service headways, decreases the attractiveness of public transport journey times which increase with congestion and decreases the reliability of bus services.

²¹ [Transport \(greatercambridge.org.uk\)](http://greatercambridge.org.uk)

²² [Making Connections \(amazonaws.com\)](http://amazonaws.com)

3.24 In 2021/22, across Cambridgeshire and Peterborough, 13.9 million vehicle miles were operated on local bus services (see

3.25 Table 3-1), of which 1.7 million miles (12.2%) were supported by local authorities²³.

Table 3-1 Commercial and supported vehicle miles in CPCA area in 2021 (millions)

| Authority Area | Supported | Commercial | Total |
|----------------|-----------|------------|-------|
| Cambridgeshire | 1.4 | 9.2 | 10.6 |
| Peterborough | 0.2 | 3.1 | 3.3 |
| CPCA | 1.6 | 12.3 | 13.9 |

3.26 **Error! Not a valid bookmark self-reference.** shows how the demand for bus travel has fallen considerably per head of population since before the pandemic²⁴, which similarly challenges the viability of commercial services and puts increasing pressure on local authorities to step in with support. Lower demand, however, can make DRT a more appropriate transport solution.

Table 3-2 Bus journeys per head of population in CPCA area in 2018/19 and 2021/22

| Authority Area | 2018/19 | 2021/22 |
|----------------|---------|---------|
| Cambridgeshire | 30.5 | 18.3 |
| Peterborough | 46.6 | 26.0 |

²³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1141450/bus02_mi.ods

²⁴ [bus01.ods \(live.com\)](#)

4. Case studies

- 4.1 Currently, there are over 30²⁵ DDRT systems in operation in the UK, 17 of which are pilot schemes which were implemented with DfT's Rural Mobility Fund. This chapter considers a cross section of case studies of DRT in operational service in the UK and beyond, highlighting their relevance to Cambridgeshire and Peterborough and identifying lessons learnt.

Call Connect

- 4.2 Call Connect commenced operation in Lincolnshire in 2001. It has expanded its services beyond its county boundary to include Peterborough and Rutland, as well as Gainsborough in North Lincolnshire.



- 4.3 Call Connect operates across a number of zones, Monday to Friday 07:00 - 19:00 and Saturdays 08:00 - 18:00. Registration for the service is free and available to anyone. Bookings can be made online, via telephone, or by dedicated app. Bookings can be made from seven days to one hour in advance. Payment can be made on the vehicle.
- 4.4 Fares are based on distance. Children under 16 travel for half fare and concessionary travel pass holders travel free.
- 4.5 Lincolnshire has been using booking apps by both Padam and Via in various elements of its provision.
- 4.6 Alongside fully flexible services, Call Connect vehicles also include some timetabled services and ones that deviate on demand. Call Connect vehicles incorporate home to school transport runs into their schedules too, which help to increase utilisation and spreads the cost across different budgets.
- 4.7 A pilot with Padam in Gainsborough has used two vehicles to provide a flexible service, along with home to school transport. Within the software platform, an algorithm was set to ensure that both vehicles were not able to be directed into the same area within

²⁵ [Digital demand responsive transport > Existing schemes and operators \(como.org.uk\)](#)

45 minutes of one another. This ensured that vehicles weren't drawn to unfairly serve one area more than another, but also encouraged aggregation of journeys from the same area, helping to improve utilisation.

- 4.8 Call Connect has developed and adapted to changing circumstances over time and looked for opportunities to integrate with other services (social care transport, home to school transport and dial-a-ride) to achieve efficient provision, including the operation of vehicles by the County Council's own in-house company.

Lessons learnt: Continually adapt and develop services and look for opportunities to integrate different demands.

Oxford Pick Me Up

- 4.9 Oxford Pick Me Up was a commercially provided DRT service, operated by Oxford Bus Company, aimed at improving connectivity within the eastern arc of Oxford and the city centre. It was a two-year minibuss pilot, implemented from 2018 to 2020.

- 4.10 The Pick Me Up service operated seven days a week, including public holidays, from 06:00 - 23:00 Monday to Friday, 07:00 to midnight on Saturday, and 09:00 to 21:00 on Sunday. The service offered an average response time of 10-15 minutes.

- 4.11 Fares were designed to be competitive, but above regular bus fares, particularly for journeys that could have been made on the fixed bus network. Single fares were £3 (peak) and £2.50 (off-peak), with a £1 surcharge for journeys



after 21:00. If the same journey could be made using an existing Oxford Bus Company conventional bus route, an additional charge of £2.50 or £3 was applied. An extra £0.50 was added to journeys to and from the city centre. No discount was made for concessionary travel pass holders, as reimbursement rates were considered to be too low and would undermine the service's viability.

- 4.12 At peak times, vehicles faced delays, which reduced the capacity of the service. Furthermore, vehicles were drawn into the city centre, so then not available to meet

travel requests in the suburbs. These factors impacted negatively on the operational efficiency of the service and user experience.

- 4.13 The service did, however, highlight the willingness of users to pay a premium for convenient transport options. The app was very popular, with approximately 38,000 downloads and facilitated over 300,000 journeys. Despite this success, the service was not financially sustainable, and the operator withdrew the service.

Lessons learnt: Whilst it is clear that people are willing to pay a premium for a DRT service and use it rather than a cheaper conventional bus service, there are operational difficulties of trying to run DRT in congested urban areas. Overall, it demonstrated that it is difficult to achieve commercial viability.

Slide, Bristol

- 4.14 Operated by RATP as a fully commercial venture, the Slide²⁶ DRT service operated in Bristol between 2016 and 2018, providing a ride-sharing minibus service at peak times only (Monday to Friday 06:45 – 09:45 and 15:30 – 19:30). It was aimed at commuters and provided shared shuttles to railway stations and city centre locations. Fares ranged from £4 to £7, or £120 for a month.
- 4.15 The service saw 40,000 trips over 2 years, but could not reach commercial revenue levels.
- 4.16 Slide cited a reason for closure as the introduction of the Metrobus Bus Rapid Transit (BRT) system in Bristol moving people to mainstream public transport²⁷.
- 4.17 Slide also operated in Ealing in London²⁸ (as part of trial for Transport for London) from November 2019 until May 2020, when the trial was cut short by the Covid-19 pandemic. The service used ten accessible 10-seat minibuses, had a flat fare of £3.50 and operated 06:00 - 01:00 daily.

Arriva Click

- 4.18 Arriva Click was amongst the pioneering DRT services in the UK and deployed over time in different locations – Sittingbourne, Liverpool, Leicester and Watford. Each location had different characteristics and experiences with DRT.
- 4.19 Arriva Click was first trialled in Sittingbourne in 2017. During peak hours, the service carried up to 11 passengers per vehicle per hour, while off-peak hours saw only 1-2

²⁶ <https://www.slidebristol.com/>

²⁷ <https://www.bbc.co.uk/news/uk-england-bristol-46360299>

²⁸ <https://content.tfl.gov.uk/drt-research-report-july-2021.pdf>

passengers per vehicle per hour. It was estimated that there needed to be an average of about 8 passengers per vehicle per hour to achieve commercial viability.

4.20 During the pilot, over half the customers surveyed indicated that they had switched away from the car. 61% of users used the service a few times a week or more; 43% adopted the service for their daily commute and 90% said they would recommend it to a friend.²⁹

4.21 Arriva Click commenced in Liverpool in 2018. Arriva worked with the transport authority to roll out the app-based service, initially with six 15-seat buses, but with a view to running 25 vehicles by summer 2019. Most of the service was withdrawn in 2020, except



for the Speke area. The service operated Monday to Saturday 08:00 - 17:00, with fares varying based on time and distance. Payment was only available via the app, utilising Via technology.

4.22 Using developer funding, Arriva Click (with Via software platform for bookings and vehicle scheduling) was put in place to serve the new residential area of New Lubbethorpe, on the edge of Leicester. This provided a flexible service for the area as it developed, when demand remained low. The contract has since passed to another provider, with some fixed service provision now possible as the development grows.

4.23 Arriva Click, using technology provider Ioki (based on similar partnership working in the Netherlands, introduced DRT into Watford in 2020, under a contract with Watford Borough Council. This was to provide a service for a new housing development and to enhance connections with the wider network.

4.24 The service, which utilises seven high specification 16-seat minibuses with features including Wi-Fi, USB charging and air conditioning, operates seven days a week between 06:00 and 22:00. A typical journey costs £3.50.

4.25 The service has so far failed to meet the anticipated demand. The first quarter of 2022 saw 5,000 passenger journeys, against a predicted 75,000.

²⁹ Future of mobility: urban strategy (publishing.service.gov.uk)

- 4.26 The various experiences of Arriva Click again highlight the challenges for DRT in achieving commercial viability, and in establishing appropriate provision alongside conventional services in urban settings.

Lessons learnt: DRT has not achieved commercial viability to date, but can be a way of meeting needs in new developments where initially there is low demand.

Flexibus and IndieGo, Warwickshire

- 4.27 Flexibus services were introduced in Warwickshire over 20 years ago, replacing fixed route services where demand was no longer sufficient but it was considered important to maintain vital lifelines in rural areas.
- 4.28 Flexibus services are fixed line routes³⁰, which operate one return journey on a limited number of days per week. Roaming zones are included where the vehicle can deviate from the fixed route in a defined area. Bookings are required for the bus to deviate, but regardless of bookings each journey operates. However, return journeys may only run part of the route, then only beyond on demand.
- 4.29 Services can be used by anyone using cash fares, contactless or concession passes. Vehicles are used on school journeys before and after Flexibus services, achieving some economies in overall provision. Contracts are awarded on the basis of a vehicle having a full week's work.
- 4.30 Often, return journeys will operate a shorter route and then continue "'on request' and terminate early if no one remains on the vehicle.
- 4.31 Flexibuses³¹, as registered local bus services, are available to all and can be used without pre-booking on certain elements; booking is only needed on the flexible sections of route. However, each service only operates on certain days of the week in certain targeted areas.
- 4.32 More recently, Warwickshire County Council has launched an on-demand DRT service (IndieGo PLUS), following a successful bid to the Rural Mobility Fund. Operated by Stagecoach, with 3 minibuses (plus a spare), and using the Liftango booking and scheduling platform, it operates in the Hatton area west of Warwick area.
- 4.33 Journeys can be made between any two points (virtual stops) in the rural zone or from the zone to/from destination points in Warwick and Kenilworth. Pick-up and drop-off

³⁰ <https://www.flexi-bus.co.uk/Flexibus/flexibus.html>

³¹ <https://www.warwickshire.gov.uk/flexibus>

points should be within 250m walk of home or destination point, or nearer for people with mobility impairments.

- 4.34 The service operates Monday – Saturday 06:00 – 19:30. Journeys can be booked between 1 hour and 2 weeks in advance using the app or by phone. Single fares are £4 and concessionary travel holders may travel free after 09:00 on weekdays and all-day Saturday.



- 4.35 Early indications (April 2023) show that about 25% of bookings were being made by phone. The cost per passenger journey was running at £12-£13.³²

HertsLynx

- 4.36 Hertfordshire County Council was awarded Rural Mobility Fund (RMF) support for its HertsLynx DRT service, operated under contract by Uno Bus and using the Padam back-office for bookings and scheduling. It offers fully flexible travel anywhere within an operating zone covering 400km², or to a number of defined locations in six surrounding towns.

The zone includes a number of villages that previously had no bus service.

- 4.37 The service was launched in September 2021 with three 16-seat minibuses, each equipped with a wheelchair space. The fleet expanded to four vehicles in



³² Presentation at DfT DRT Forum, 27 April 2023

September 2022, with plans to add an electric vehicle in the future.

4.38 Passengers are able to book up to 30 days in advance, or in real-time up to three minutes beforehand. The service operates 07:00 - 19:00 Monday to Saturday and 10:00 - 16:00 on Sundays and public holidays. More recently, the service has been extended into the evening on Fridays and Saturdays.

4.39 Fares are based on distance, ranging from £3 (up to 2 miles) to £6 (over 10 miles). The service accepts cashless payments, allowing passengers to pay via credit/debit card or purchase a credit bundle. Free travel is available for English National Concessionary Travel Scheme (ENCTS) pass holders.

4.40 In its first year, HertsLynx surpassed its target of 12,000 trips within 10 months³³. Notably, 25% of passengers are SaverCard holders (aged 11-25), with one of the top three pick-up and drop-off points being the college in Buntingford. The high level of use by students means that during college holidays the service is significantly quieter.



4.41 ENCTS pass holders account for 10% of passengers. 20% of all trips are made to or from transport hubs (bus/train), perhaps indicating transfer to other public transport services.

4.42 80% of passengers book trips via the app, 15% book online and 5% book via the call centre.

4.43 Over time, the algorithms that manage the booking and scheduling parameters of the service have been adjusted to optimise the operation, increasing average utilisation to 1.9 passengers per trip. However, journeys are quite long, which influences utilisation, and vehicles can be impacted by congestion.

4.44 Using the HertsLynx experience, it is intended to modernise the parallel dial-a-ride services, using the same platform for bookings and adopting a similar modern-looking livery on the vehicles. This would enable some use of vehicles across the two operations, assisting at busy times.

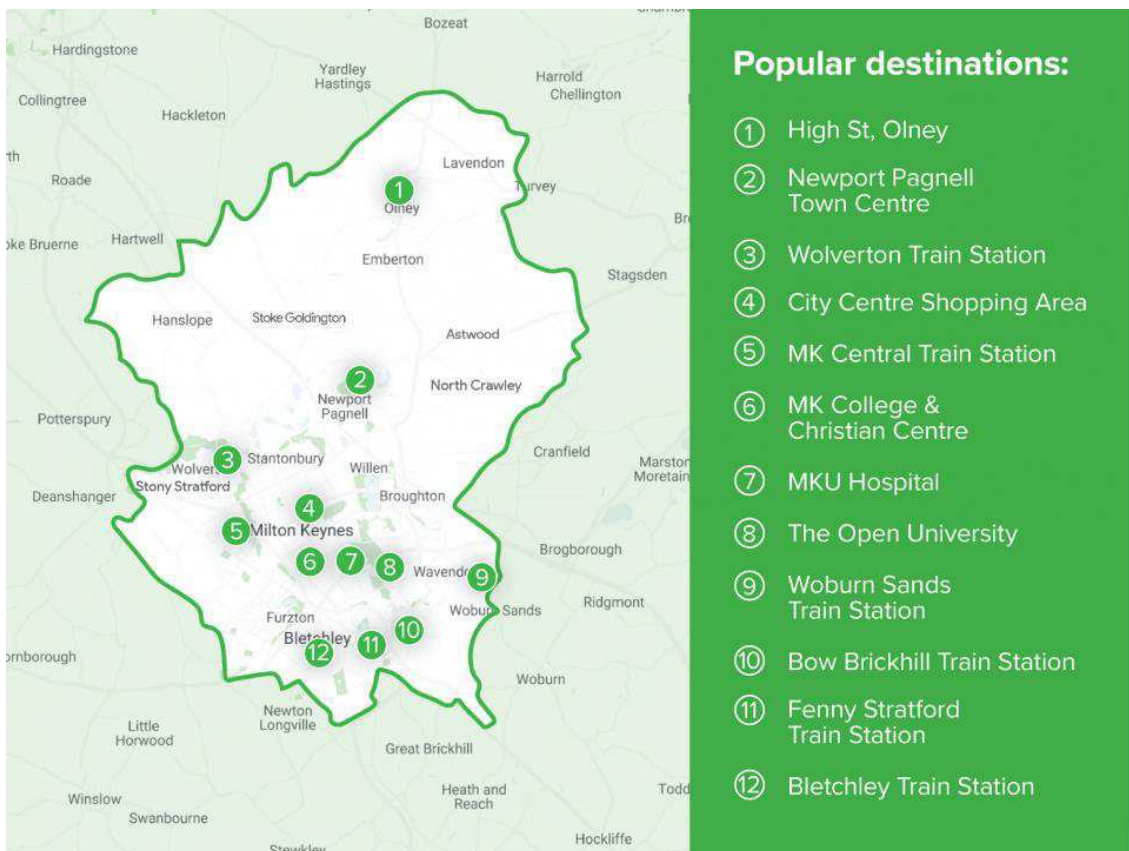
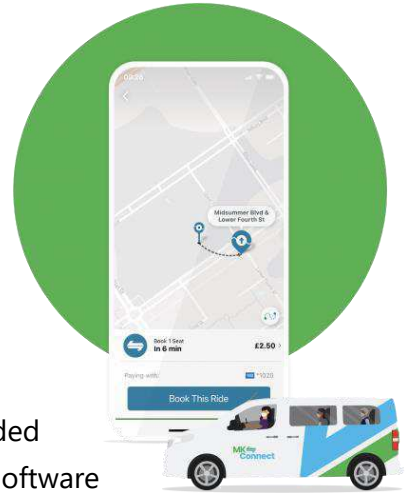
³³ [HertsLynx case study: DRT serving local communities \(transportxtra.com\)](https://transportxtra.com)

Lessons learnt: DRT services can appeal more to younger people if designed to meet their needs. Equally, reliance on a particular user group can lead to peaks and troughs in usage.

MK Connect

4.45 As a car-dominated place, with relatively low population density, Milton Keynes is a challenging place for fixed route commercial bus operation. With rising costs associated with the Council-supported bus services, the decision was taken to replace them with an area-wide DRT service.

4.46 MK Connect was introduced in April 2021, covering the entire area of Milton Keynes City Council. Via was awarded the contract to provide the entire operation, including software platform and vehicle operation using 26 Private Hire Vehicles (PHV) of up to 8 seats (some of which are electric).



- 4.47 The service operates 06:00 – 22:00 Monday – Saturday and 09:00 – 18:00 Sunday. Unlike other DRT services, MK Connect has no advance booking – all bookings are in real time with target wait times of no more than 30 minutes in urban areas and 60 minutes in rural areas. Whilst journeys may be made from anywhere to anywhere, bookings will not be accepted for trips that could be made on the conventional bus network, and the app will inform users of those available services.
- 4.48 At commencement, fares were £3.50 (peak) / £2.50 (off-peak). In April 2023, these rose to £3.85 and £2.75 respectively.
- 4.49 The contract for MK Connect required a service that met particular standards and requirements, rather than the provision of a certain number of vehicles. Therefore, it is left to the operator to meet those requirements. Therefore, at busy times, the operation might draw in other PHV resources, rather than just relying on MK Connect branded vehicles.
- 4.50 Provision of MK Connect costs £1.9m p.a., compared to the cost of the previous fixed route supported services of £2.9m p.a.
- 4.51 Bookings are mainly by app, with just 5% by phone. Between 1200 and 1500 passenger journeys are made each weekday. Average utilisation is above 3 passengers per vehicle hour.³⁴
- 4.52 Service data is monitored closely to help adjust operational parameters to optimise the service. Trip data and usage patterns is made available to bus operators on request, to help identify new opportunities for fixed route bus services.

Lessons learnt: Specifying an outcome-based contract provides the flexibility for operators to decide how to deliver the service, including bringing in more capacity at peak times from other operators. It is important not to abstract use from the fixed route network and to promote bus use through the app. The grid road system of Milton Keynes is suited to DRT.

FoxConnect

- 4.53 Leicestershire is a rural county with an unstable commercial bus network following the pandemic and lower patronage. Many rural areas are served by supported bus services, which are facing rising costs, with increasing pressure on County Council budgets.

³⁴ Presentation to DfT DRT Forum, 27 April 2023

- 4.54 Launched in July 2022, FoxConnect is a three-year RMF pilot to improve access in suburban and rural areas between Narborough and Hinckley. It has an 85km² operating area with 17 different communities served.
- 4.55 The service is focussed on access to large employment sites, out-of-town shopping, rail stations and a Park & Ride site, for onward travel into Leicester. The service is available 06:00 - 19:30 Monday to Saturday. It operates cashless with flat fares of £3.50 adult single, half-fare for under-16 and free for concessionary travel pass holders.

Where available, passengers are referred to local bus services rather than being booked onto the DRT service, to avoid undermining those services. However, fixed route services are infrequent, meaning that journey opportunities are limited.

Lessons learnt: Whilst evaluation is still to be undertaken, the service aims to demonstrate the ability of DRT to complement the wider public transport network (train, bus and Park & Ride) and avoid operational inefficiencies of DRT vehicles going into congested urban areas, increasing service availability in the rural area.

WM On Demand - Coventry

- 4.56 WM On Demand was introduced in Coventry, funded by DfT's Future Transport Zones (FTZ), University of Warwick and section 106 funding. In January 2023, the service was integrated with the existing Ring & Ride service (a long-standing dedicated door to door service for people with mobility problems), with the aim of achieving operational efficiencies. With the 'co-mingling' of the services, the Ring & Ride brand has disappeared in Coventry and users of that service helped in moving to WM On Demand, with the ability to book in the same way as they always had by phone, but also on an app.
- 4.57 WM On Demand operates Monday to Friday 06:00 - 23:00, Saturday 08:00 - 23:00 and Sunday 08:00 - 15:30. Passengers can book journeys up to 7 days in advance through the Via app or dedicated call centre. Journeys can be made anywhere within the designated zone, and beyond to/from specific locations aimed at the needs of university students. Whilst journeys are 'corner to corner' (with a network of virtual stops), a door-to-door service is provided for former Ring & Ride users.
- 4.58 Whilst still early days since the services were integrated, overall patronage has increased by 30% compared with the two previous separate services.

Lessons Learnt: Demonstrates the ability to integrate DRT and long-standing Ring & Ride services to achieve overall operational efficiencies and improved vehicle utilisation.

Flecsi, Wales

- 4.59 Flecsi is a general brand applied to a number of different DRT schemes across Wales, supported by Transport for Wales and the local authorities in which each scheme operates. All the services are managed through a single operating platform provided by Via, with a single app and call centre. Transport provision is contracted to local operators. Some services aim to provide improved rural connectivity; some have replaced fixed timetabled services.
- 4.60 The primary objectives of Flecsi were:
- Improved accessibility – to enhance transport services in rural and underserved areas, enabling people to access essential services, employment opportunities and social activities.
 - Cost-effectiveness – to optimise resource utilisation by dynamically allocating vehicles based on demand, reducing inefficiencies and operating costs.
- 4.61 Different services are achieving different levels of use. A highly utilised service operates in a relatively tightly defined area of Denbigh and neighbouring village of Henllan. Journeys are short and focused on a small number of attractors in the town, enabling good levels of passenger aggregation (8 passengers per vehicle hour).
- 4.62 A 3-vehicle Flecsi service in Conwy is achieving 2-3 passengers per vehicle hour.
- 4.63 During 2021-2022 a pilot Flecsi service ran in Newport, with 9 vehicles. It offered guaranteed pre-booking as well as on-demand. 2,500 passenger trips per week were achieved, with an average of 4 passenger journeys per vehicle hour, reflecting shorter journeys across an urban area.

Lessons learnt: Establishing a strong brand for DRT can be important in creating an identity for the service. Equally, economies of scale can be achieved through using a centralised app, software system and call centre. Tight geographical areas of service can help achieve higher levels of utilisation.

Essex Dart 3

- 4.64 Dart 3 is a well-established DRT service in the North Braintree area, with bookings and scheduling using FlexiRoute. Replacing a fixed route supported service, it offers flexible and semi-scheduled elements, including timetabled journeys to/from Sudbury that divert on demand. Some semi-scheduled journeys are aimed at transporting students to/from interchange points to connect with fixed route services to/from college.
- 4.65 The service is operated under contract by Arrow Taxis, using 8-16 seat vehicles, with the operator interworking vehicles with other contract services, including home to school transport. The service operates Monday to Saturday 06:00 – 20:00. All journeys must be pre-booked up to 2 hours beforehand.
- 4.66 Fares are distance related and range from £2.50 (<2 miles) to £8 (>10 miles) or £3.50 - £12 return.
- 4.67 The service has built up regular travel patterns and the semi-scheduled elements that the service enjoys reasonable levels of utilisation, compared with completely flexible DRT services.

Lessons learnt: When replacing fixed services with DRT, it can be advantageous to maintain some familiarity through semi-scheduled service elements, which also help achieve higher utilisation. Integration of different travel flows can also help with this and achieve overall operational efficiencies.

East Cambridgeshire Connect

- 4.68 East Cambridgeshire Connect³⁵ was a pilot DRT operating in the Soham and Ely area from 2017 to 2019, with funding under the DfT's Total Transport initiative. It aimed to improve local access to facilities and services, particularly where bus services were limited, but also achieve integration efficiencies by meeting general and specific demands (such as travel to adult day care and local dial-a-ride) together.
- 4.69 The service had a similar overall cost to the specialist and dial-a-ride services it replaced. However, it offered additional benefits of being open to all residents.
- 4.70 Despite having to pay a reduced fare of £2 per journey to use the service, 42% of users were concession holders, indicating the perceived value of such a service. Analysis of journeys suggested that users were travelling to a greater range of destinations than previously possible, indicating some latent demand for public transport in the area.

³⁵ [Cambridgeshire community transport schemes | Care Choices](#)

- 4.71 The service used the FlexiRoute software to optimise transport routes and schedules, improving efficiency and service provision.
- 4.72 After 11 months of operation, the DRT service had 868 registered users, with 487 utilising the DRT service and 381 using the day care service. The cost per passenger journey was estimated at £17. Whilst quite high, it was similar to that incurred in the provision of dedicated transport, plus the Connect service offered wider benefits to other users, enabling them to make trips that were not previously possible.
- 4.73 The project successfully showcased social benefits by integrating different types of transport and providing new travel opportunities that were not previously available through local bus services. Several case studies highlighted the positive impact on individuals, demonstrating the project's effectiveness in improving mobility and accessibility.
- 4.74 The service ceased when no operator could be found when the service was re-tendered.

Lessons learnt: Integration of different services can help achieve efficiencies and open up new journey opportunities.

DRT beyond the UK

TAD IDFM, Paris region

- 4.75 DRT has been operating in Paris since 2018 when a pilot scheme was introduced in partnership with bus operator Transdev in one area of the city. This scheme was expanded to a further region in 2018.
- 4.76 In 2019 a new system was introduced, utilising one app and a central call centre for future DRT development. Padam³⁶ was awarded the contract, working with local partners to deliver a unified back office, app and booking centre.
- 4.77 The system has since been rolled out to 40 areas covering almost the entire Paris city region, with eight local operators providing the vehicles and operational knowledge. A total of 120 vehicles are deployed.

³⁶ <https://futuretransport-news.com/wp-content/uploads/sites/3/2022/03/Padam-Mobility-How-did-Paris-Launch-Demand-Responsive-Transport.pdf>

- 4.78 The system is achieving an 80% pooling rate (i.e. more than 1 person per trip) and 95% of users are booking via the app with only 5% by phone. The app is downloaded approximately 400 times per month³⁷.
- 4.79 Data is collected through DRT bookings to identify trends and demand patterns, which is shared with other local transport providers and can be used to help shape the main fixed bus network.

MUVA, Berlin

- 4.80 In September 2022 BVG Muva³⁸ was introduced to cover a 60km² area of east Berlin. BVG is the municipal bus operator for the city of Berlin and wanted to extend the fixed route network with DRT options to incentivise modal shift and provide services to previously inaccessible areas.
- 4.81 Via was awarded the contract to provide technology solutions and the service operates 24 hours per day, seven days per week.
- 4.82 This service replaced the BerlKönig³⁹ pilot service also operated by Via and BVG which operated in Berlin from 2018 until 2022, a taxi-based ride sharing service which at its peak involved 150 taxis and carried 1.85 million passengers.

Netherlands

- 4.83 Public transport in the Netherlands is provided under a series of regional and/or provincial concessions. A single contract usually covers the provision of the entire bus network in a particular area, ensuring a fully integrated and consistent approach. There is a requirement for all areas of a region to have at least some level of service available. In more rural areas this tends to be through the provision of a DRT service, which may offer travel anywhere in a particular zone or to the nearest large village or town.
- 4.84 In the Groningen region, DRT allows people in designated operating zones to travel between any two points up to 15km, where no fixed service is available. It will also take people to designated hubs to transfer to mainline bus services. The provision of DRT has enabled the mainline bus services to take more direct routes and operate limited stop. This has increased their attractiveness and led to significant growth in patronage.

³⁷ [Running the world's largest demand-responsive transport system around Paris \(intelligenttransport.com\)](https://www.intelligenttransport.com/news/running-the-worlds-largest-demand-responsive-transport-system-around-paris)

³⁸ <https://ridewithvia.com/news/via-provides-transitech-software-for-bvg-muva-berlins-new-and-innovative-public-transport-service?lang=en-gb>

³⁹ <https://www.berlin.de/en/news/7586619-5559700-collective-taxi-berlkoenig-ends-on-20-jun.html>

- 4.85 In the same region, contracts for DRT services also include the provision of specialist door to door transport for people with mobility difficulties and home to school transport for pupils with special educational needs and difficulties. 7 area-based contract packages have been specified and awarded to local taxi operators, who are required to provide sufficient vehicle resources to meet the outputs/requirements set out in the contract. Such integrated contracts help achieve operational efficiencies overall and there is a desire to try and include travel for medical appointments as well.
- 4.86 One particularly successful DRT service is the TexelHopper, which operates on the island of Texel. This replaced a number of fixed route services in 2014, achieving a cost saving. It's focus on meeting the ferry from the mainland means that it operates more on a many to one or one to many basis, helping levels of utilisation with 4-5 passengers per trip. Journeys must be booked 30 minutes beforehand via app, website or phone, and cost 3 Euros.

Lessons learnt: Integration of different services helps achieve overall efficiencies. DRT should be planned to complement the main bus network. Outcome-focused contract specifications provide flexibility for operators to determine the best way of meeting them and to take responsibility for deciding on providing suitable vehicles.

Conclusions from case studies

- 4.87 The case studies summarise experiences and findings from the last 20 years of DRT development and implementation.
- 4.88 As yet, the more recent services implemented in the UK have yet to be evaluated, so it is difficult to draw conclusions. Indeed, an assessment of schemes funded by DfT and others over recent years questioned the lack of financial analysis and effectiveness.⁴⁰ In particular, the assessment was critical of the lack of detailed financial analysis and assessment of DRT schemes, as it is difficult to measure the value for money and cost-effectiveness of these initiatives.
- 4.89 The case studies show there is no single approach to providing DRT. It is important to carefully design services to meet identified needs and tailor them to local circumstances and situations. In all cases, being clear on the objectives that are to be met is useful, so the service can be developed accordingly.

⁴⁰ [Failing DRT schemes will have cost £100m, analysis reveals \(transportxtra.com\)](#)

- 4.90 A benefit of DRT is the ability to adjust and refine the service in the light of experience and usage data.
- 4.91 DRT use and operational efficiency can be influenced by many factors – size of area, journey distances, demand patterns, road layout and traffic levels. Service design will also have an impact – times of operation, number of vehicles and the level of flexibility offered. Furthermore, integration of different services can help achieve overall efficiencies and increase utilisation, as shown in the Coventry example and the Netherlands. However, it is important to recognise that DRT is not necessarily cheaper than other types of service, as vehicles and drivers cost much the same as for other types of service.
- 4.92 The Oxford Pick Me Up and Bristol Slide case studies demonstrate the challenges of operating in congested urban areas and the difficulty in trying to achieve commercial viability.
- 4.93 A number of the other case studies highlight the ability of DRT to improve rural connectivity and to effectively replace conventional bus services. Including some semi-scheduled elements or constraining journey options can help aggregate usage.
- 4.94 There are clear advantages in ensuring that DRT complements the overall public transport network, feeding into it and not competing with it.
- 4.95 Procuring services according to outcomes sought has advantages in providing flexibility for operators to determine the best way of providing a service. Again, it can facilitate integration with other services. Equally, it provides opportunities for flexible vehicle fleets, drawing on spare capacity in other vehicle fleets to meet times of greatest demand (as in Milton Keynes).
- 4.96 The various software platforms and apps have made DRT a modern and attractive service that can be attractive to all types of users. The digital algorithms can achieve real-time booking and scheduling, can drive the aggregation of demand and efficient vehicle deployment, as well as ensuring against competition with fixed route services where available.
- 4.97 There is clearly a need for different types of booking, but in time phone bookings will probably reduce even further.
- 4.98 As pilot schemes come to the end of their funding, there will be increasing interest in ways of achieving cost savings and other efficiencies. This might result in shorter periods of operation or lower levels of service. However, it may also drive greater integration across different service types and collaboration across areas, perhaps sharing the use of back-office systems and platforms.

- 4.99 Having brought DRT into the digital age, it is likely that there will be further developments, such as integration into wider MaaS initiatives, considering travel options across a range of modes.
- 4.100 Although the full integration of DRT into MaaS apps is in its infancy, the HiGo MaaS app launched in June 2021 by the Highlands and Islands Transport Partnership (HITRANS), integrates multiple transport and travel options into one application, providing more reliable journey planning capabilities, easier access to travel information, in-app ticketing and a hassle-free payment system. As well as DRT, the app includes access to buses, trains, ferries, taxis, car clubs, car rental, bike hire, flights and hotels to allow users to plan bespoke door-to-door journeys with ease.
- 4.101 In England, Solent Transport is leading the charge with Future Transport Zones backing, but the rapid technological developments in this area make it unlikely to be a fully integrated MaaS solution for wider implementation in the short to medium term.

5. Ting

5.1 Ting operates in across a wide rural area in West Huntingdonshire.

5.2 Vectare was awarded the contract to provide both the back-office system and the transport service – the contract for the trial service was previously held by Stagecoach using the Via software.

5.3 Introduced in November 2021, Ting covers a dispersed rural area, with an operating

zone comprising 46 villages, plus the town of St Neots, Cambourne business park, and a limited number of stops in Huntingdon, including the railway station. The service is available 06:00 - 20:00, Monday to Saturday. Bookings are made via phone, or an app developed by Vectare. Provision is generally door-to-door.

5.4 There is a simple fare structure - £2 for adults and £1 for under 19s. ENCTS passes are accepted. Refunds are not available for cancelled bookings.

5.5 The service is provided with three branded vehicles - two 8-seat vehicles and one 16-seat minibus. An additional spare vehicle is available.

5.6 Although users can request a booking up to 30 days in advance, the booking system may only confirm the bookings 24 hours prior to the journey, which could create some uncertainty for users or limit their ability to make alternative arrangements if the booking cannot be met. It is likely that those people who try and book in advance are doing so to get some certainty that they can or cannot make a particular journey.

5.7 From Vectare's perspective, not guaranteeing advanced bookings, avoids the situation of people then cancelling the booking nearer the time, having, in the meantime, prevented others from booking journeys. It also provides more opportunity to



aggregate journeys, improving vehicle utilisation and the number of passengers carried per vehicle hour.

Ting survey

- 5.8 A survey of Ting users (295 respondents) and users of timetabled bus services 150, 400 and 401 (93 respondents) in the Huntingdon area was undertaken in February 2022, to understand relative usage and thoughts regarding fixed versus flexible service options.
- 5.9 The headline survey results were:
- 19% of Ting survey respondents were aged 60+, compared to 63% of the timetabled bus survey respondents.
 - 20% of Ting respondents were aged 16-20, compared to 3% for timetabled bus
 - 55% of Ting respondents had access to a car.
 - 27% of trips made by Ting were for employment, compared to 9% for scheduled bus, reflecting the differing age profile of the two types of service.
 - 22% of trips made by Ting were for daily errands, compared to 59% of trips for timetabled bus.
 - 94% of Ting respondents would choose Ting if given the choice of Ting or a timetabled bus service.
 - 80% of timetabled bus respondents would use Ting if it was the only option.
 - 55% of Ting respondents lived in St. Neots; the rest lived in rural areas
 - The majority of journeys are to Huntingdon, Cambourne or St Neots – this was verified through discussions with the operator. It was also suggested that quite a number of trips are made wholly in and around St Neots.

Ting operator data analysis

- 5.10 Some analysis was undertaken of data for the service in the period from 15 November 2022 to 1 April 2023. During that period, 3093 trips were completed, which would equate to about 7,750 passengers in a full year.
- 5.11 Based on the 122 operating days assessed, there was an average of about 25 passenger trips per day, suggesting relatively low usage at that time. However, this suggests there should be plenty of capacity to improve usage. Equally, currently Ting runs in parallel to other existing fixed route services. If these were amended or removed at any time, this might increase usage of Ting.

Future refinements

- 5.12 Ting is clearly filling gaps in the provision of public transport in the area. Equally, it seems to appeal to younger people. However, in the future, there may be opportunities to refine the Ting operation to try and improve utilisation and customer experience, as follows:
- Consider options to split the single area of operation into smaller zones (perhaps north and south), focused on more local travel opportunities.
 - Move from door-to-door to corner-to-corner provision, to speed up operations.
 - Where there is some evidence of common passenger flows, look to introduce some semi-scheduled elements of service.
 - Where feasible, provide regular feeder services from villages into main bus services or rail stations.
 - Ensure that bookings cannot be made for journeys that could be made by conventional bus.
 - Look to incorporate some home to school transport onto the service.
 - Consider whether the provision of guaranteed advanced booking might work, allowing other bookings for similar journeys to be encouraged alongside.
- 5.13 It is noted that there was some confusion amongst users when the service moved from Stagecoach to Vectare, also necessitating the need to move to a different app. This situation could be avoided in the future by CPCA taking responsibility for the back-office system. This could then remain constant throughout, regardless of transport operator.

6. Future DRT developments

- 6.1 DRT will continue to evolve with technological advances. As more schemes are rolled out, opportunities for further integration with other local transport schemes will emerge. Below are the key current DRT developments.
- 6.2 **Advancements in technology:** Technology will continue to play a crucial role in the future of DRT. The development of increasingly advanced algorithms, real-time data, and automation will enable more efficient route planning and optimisation of DRT services. Integration with emerging technologies such as autonomous vehicles and smart city infrastructure may further enhance the effectiveness of DRT systems.
- 6.3 **Sustainability and environmental considerations:** With growing concerns about climate change and sustainability, future DRT systems are expected to prioritise low-emission options. Electric vehicles, shared rides and optimised routing algorithms to reduce congestion and carbon emissions will become essential ingredients of DRT systems. UK Government legislation is imminent regarding the end date for the sale of buses which are not zero emission; future DRT services should move towards or launch with zero emission vehicles.
- 6.4 **Collaboration and partnerships:** Collaboration between public and private companies will be essential for the success of DRT in the future. Local authorities, technology providers and private transport operators will need to work together to design and implement efficient and sustainable DRT solutions. Further integration may come from ride sharing companies, such as Uber, where a DRT bus could be included on its system for shared journeys.
- 6.5 **Smart Roads:**⁴¹ Smart roads could play a significant role in facilitating DRT in the following ways:
- Smart roads can incorporate intelligent traffic management systems that monitor real-time traffic conditions, including congestion, accidents, and road closures. This information can dynamically route the bus to an alternative route bypassing traffic, alter drop off and pick up points and develop algorithms further.
 - Real-time data sharing - smart roads enable seamless communication between vehicles, infrastructure, and passengers. By integrating various sensors and communication technologies, real-time data on road conditions, traffic patterns, and passenger demand can be shared between

⁴¹ <https://www.tfwm.org.uk/who-we-are/our-strategy/innovation-and-future-transport/connected-and-autonomous-vehicles/>

different stakeholders. This enables demand-responsive transport providers to gather accurate and timely information about passenger needs, allowing them to adjust their services accordingly.

- Intelligent charging infrastructure - for electric demand-responsive transport services, smart roads can incorporate intelligent charging infrastructure. This allows vehicles to receive information about nearby charging stations' availability, reducing downtime and ensuring efficient energy usage.

Mobility as a Service (MaaS)

6.6 MaaS⁴² is widely recognised as the next step in DDRT. It brings together DDRT, traditional bus, cycle hire, scooter hire, car sharing and other modes into one subscription-based transport solution. MaaS works through one app providing all services and payment for all and offers a more complete transport offer than any individual mode could previously.

6.7 One of the first MaaS systems, introduced by Arriva, was Glimble in the Netherlands. Glimble combining bus, rail, DRT, car sharing and cycle hire.

6.8 The integration of DRT into MaaS platforms is likely to become more prevalent. DRT services are able to complement fixed-route public transport by offering flexible and on-demand options for first- and last-mile connectivity. Integration with other transport modes within a single platform will provide users with an easier and more intuitive experience. MaaS may help raise awareness of DRT services and what they offer.



Mobility hubs

6.9 Mobility hubs have the potential to increase the efficiency and cost-effectiveness of DRT operations⁴³, connecting passengers with other modes to complete their journeys. Additionally, mobility hubs may offer amenities such as secure waiting areas, shelters,

⁴² <https://www.intelligenttransport.com/transport-news/128065/arriva-maas-app/>

⁴³ [Mobility hubs – a transport planning concept whose time has \(transportxttra.com\)](#)

ticketing facilities and bicycle parking, making public transport more comfortable and user-friendly for rural passengers.

- 6.10 Rural areas frequently face last-mile connectivity issues, where public transport options may not directly reach specific destinations. Mobility hubs can address this challenge by integrating demand-responsive transport (DRT) services or providing connections to community transport services. This helps bridge the gap between public transport stops and rural communities, ensuring that residents have access to reliable transport options for their entire journey.
- 6.11 Mobility hubs promote multi-modal integration by combining different modes of transport within a specific location. For example, rural bus services can be integrated with regional rail services at the hub, allowing for seamless transfers and coordinated schedules. This integration enhances the overall efficiency of rural public transport systems and provides passengers with more convenient and flexible travel options.
- 6.12 Mobility hubs can serve as community gathering spaces, fostering social interaction, and creating opportunities for local businesses. They can be designed to accommodate shops, cafes, and other services, generating economic activity in rural areas. This integrated approach to transport and community development can contribute to the overall vitality and sustainability of rural communities.

Autonomous vehicles

- 6.13 A significant cost in providing DRT services is the driver. Autonomous vehicles have the potential to reduce this cost. However, whilst trial autonomous bus services are being introduced currently, they are on fixed routes and still require a driver to be available to take over driving if needed, or at certain points of the journey.
- 6.14 It therefore seems many years away before there is the ability to have a fully autonomous DRT service in operation that would be capable of finding its way around a range of varying routes.

7. Recommendations for DRT in Cambridgeshire and Peterborough

- 7.1 The Cambridgeshire and Peterborough area is varied and includes rural, peri-urban and urban areas. As such, different models of DRT will be needed to respond to different needs.
- 7.2 There are significant rural areas with little or no public transport that could benefit from DRT. There are other areas with reducing bus services, as usage remains low following the pandemic, which might be better served by DRT.
- 7.3 There are also existing community transport services that offer transport to specific groups. There may be opportunities to build these into wider DRT services, as well as looking at integration possibilities with other dedicated forms of transport, such as home to school and social care transport.
- 7.4 Network planning for a future enhanced bus network is ongoing as part of the ambition for buses being expressed through the Bus Service Improvement Plan, in response to the new Bus Strategy. The network will look to improve connectivity across the area and will also facilitate interchange to widen overall journey opportunities. DRT could clearly play a part in ensuring all areas are linked into the main network, in the same way as happens in the Netherlands.

How DRT could be used

- 7.5 Although much evaluation work is still to be undertaken across the UK to fully understand the value of DRT, it is recommended that CPCA look to implement further DRT pilot projects, to test different models. Given that Ting offers a many-to-many service, future pilots might focus on different models, such as feeder services, many to few, semi-scheduled services and the achievement of greater integration with other transport.
- 7.6 Given the experience of urban DRT services elsewhere, it is recommended that any pilots be introduced in either peri-urban or rural areas. Wherever, possible some level of integration should be sought with other transport.
- 7.7 Use of a single back-office system for DRT should be used that can be applied to all services and potentially rolled out to other types of service, such as community transport.

Future DRT pilots

Wittering area

- 7.8 Wittering and the villages of Wansford, Ailsworth, Castor and Long Thorpe are poorly served by public transport. Previous timetabled services have proved unviable and current provision is by Lincolnshire's Call Connect service, which offers a bookable DRT service, plus one timetabled journey into and out of Peterborough at peak times.
- 7.9 Despite this service being available, local concerns have been raised, suggesting that Call Connect does not meet needs. As such, there is a desire to see a fixed timetabled service reinstated.
- 7.10 The area could benefit from a more locally-focused DRT service, designed more around the needs of the communities in the area and identifying the potential demands. This could operate as a many to many or many to few service. If particular patterns of use emerged, the next step would be to introduce timetabled or semi-scheduled elements.

Wisbech area

- 7.11 Wisbech itself and the villages north of the A47 between Wisbech and Guyhirn are served by limited fixed route bus services. There is an opportunity to replace these existing services with a DRT service, with the aim of improving levels of availability and potentially choice of destinations. Limiting destinations in Wisbech or operating on a semi-scheduled basis in the town could help achieve good levels of utilisation.
- 7.12 The area is relatively compact with a road network that would facilitate alternative routing for DRT vehicles, depending on where bookings existed. There would be an ability to travel to connect with other bus services at Guyhirn or Wisbech to reach other more distant destinations, including March, Peterborough or King's Lynn.

East Cambridgeshire

- 7.13 Given the success of the previous pilot here and other initiatives, such as the Ely Zipper service, there is scope to investigate a DRT service for the area and to seek wider integration, as previously, with other types of service.
- 7.14 This could provide more flexible travel options than a fixed route service in and around Ely and nearby villages, along with connections with trains and buses to other destinations. The scope of the service would need to be considered alongside other network aspirations for the area being considered within the BSIP.

Longstanton area

- 7.15 Longstanton is situated about six miles northwest of Cambridge city centre. It benefits from good transport links, particularly with a Park & Ride facility on the Busway between St Ives and Cambridge. However, some of the surrounding communities are relatively poorly served and links within and between some of the new areas of housing development are limited.
- 7.16 It is suggested that a DRT service could include the settlements of Over, Swavesey, Boxworth, Dry Drayton, Madingley, Bar Hill, Oakington and Longstanton.
- 7.17 This service would demonstrate the principle of connecting peri-urban populations into the Busway, for onward connections at Longstanton, or to regular bus services at Bar Hill or Madingley Park & Ride.
- 7.18 To maximise take-up, the service could be branded and co-ordinated as an extension of the Busway itself, as a Busway feeder service, similar to Great Western Railway's bus branch line schemes in Devon and Gloucestershire.⁴⁴

Implementation

- 7.19 DRT works most efficiently when plugging gaps or feeding passengers into existing public transport networks. Given the aspirations within the BSIP to significantly enhance the bus network, there will be opportunities to build in DRT services to serve areas either with sparse populations or to create specific links into the main bus network (i.e. feeder services).
- 7.20 Continuous monitoring and evaluation of DRT services is vital to understand patterns of usage and to consider ways of amending parameters of service operation to increase demand, change response times and/or improve utilisation and improve operating efficiency. Equally, app-based services enable data to be collected on where requests for the service outside of current parameters were made. Therefore, DRT services should not be seen as fixed entities; they should be under constant review and refinement.
- 7.21 Where regular patterns of use start to emerge, consideration can be given to the provision of fixed timetabled services at certain times, with more flexible operation at other times.
- 7.22 Baseline data should be collected prior to commencement and evaluation should commence six-months after the start of each pilot project, to determine the extent to

⁴⁴ <https://news.gwr.com/news/new-partnership-helps-to-deliver-better-bus-and-rail-connections-in-south-devon>

which the services are meeting their objectives. Table 7-1 provides an overview of the timescales for DRT implementation.

Table 7-1 Timescales for Implementation

| Time period | Action |
|---------------------------|---|
| Within two to three years | <ul style="list-style-type: none"> • Procure an areawide DDRT back office • Implement up to four pilot schemes • Design and implement integrated ticketing between DRT and scheduled bus • Evaluate success of pilots at the end of year three • Undertake a feasibility study into the scope of a potential MaaS application for CPCA area |
| Within five years | <ul style="list-style-type: none"> • Integrate DDRT with community transport and home to school transport as appropriate • Implement further pilots based on the evaluation at the end of the previous period • Integrate DDRT into an areawide MaaS app as appropriate • Implement integrated ticketing across a range of modes as part of MaaS rollout • Evaluate success of integration with community transport, school transport and MaaS |
| Within 10 – 20 years | <ul style="list-style-type: none"> • Area-wide DRT coverage as appropriate • Explore option for driverless DRT vehicles in operational service – towards end of period |

DRT costs

7.23 Table 7-2 provides ballpark costs for the provision of one DRT pilot. It is assumed that, owing to the relatively small geographical size of each pilot area, each pilot would require two vehicles which will cost £150,000 per vehicle per year to operate. The operator would be responsible for providing and operating the vehicles.

- 7.24 In some instances, it may be possible to not have to have fully dedicated vehicles to provide the service. A base level of one vehicle might be operated, supplemented at other times by spare capacity with other existing vehicles through a brokering arrangement.
- 7.25 There will be ongoing monthly costs to operate the back office and variable costs relating to a charge per journey booked. It is assumed that the back-office costs will include a passenger app, a driver app and a call centre facility to be available in the interpeak (i.e. between 09:30 and 15:00).
- 7.26 Project management costs are included, although following 'go live' contract management may become a 'business as usual' task within the local authority.
- 7.27 Promotion costs are included which will continue for the duration of the pilot, as will monitoring and evaluation.
- 7.28 It is assumed that 65% of passengers will be fare paying and 35% will be concessions with a flat fare of £2.50 and concessionary reimbursement of £2.
- 7.29 The net cost of operation over three years would be approximately £909,000, or £300,000 per year for three years. The pilots use two vehicles rather than the three (plus operational spare) vehicles which are used for Ting currently, hence the lower annual cost.
- 7.30 Back-office costs might be reduced by partnering with an existing DRT operating authority to pool back-office resources rather than procuring a CPCA-specific system. The front-end app could be tailored for CPCA purposes and CPCA would pay for the extension into new zones.
- 7.31 There may also be scope for the services to operate with community transport operators providing DRT journeys. Similarly, there may be options for community transport providers to be included in a brokerage arrangement with other operators rather than tendering for a single DRT transport service provider.

Table 7-2 Ballpark costs for one DRT pilot (£'000s)

| Costs £k | Year 1 | Year 2 | Year 3 | Total |
|---------------------------|--------|--------|--------|--------|
| Set-up costs | 35 | - | - | 35.0 |
| Transport operating costs | 300 | 300 | 300 | 900.0 |
| Back office - monthly | 14.4 | 14.4 | 14.4 | 43.2 |
| Back office - variable | 3 | 4 | 4 | 11.4 |
| Project management | 8 | 5 | 5 | 18.3 |
| Promotion | 12 | 3 | 3 | 18.3 |
| Monitoring/evaluation | 5 | 5 | 3 | 13.3 |
| Total gross costs | 377.4 | 332 | 330 | 1039.6 |
| Less fares revenue | 35 | 43 | 52 | 130.0 |
| Total net costs | 342.4 | 289 | 278 | 909.6 |

Assessing DRT costs and benefits

- 7.32 The next phase of this process will be to assess the costs and benefits of DRT provision. The proposed approach to the economic appraisal of DRT in order to forecast and quantify the anticipated benefits will consist of the following elements:
- 7.33 **Improved access to employment** – economic benefits through increased access to employment
- 7.34 **Social value** – supporting health and wellbeing by enabling easier access to services, facilities, social networks, and community initiatives and promoting community cohesion through providing more opportunities for people to interact.
- 7.35 **Reduced car use** – reducing congestion through modal shift to shared transport from private cars

Measuring success of DRT

- 7.36 The success of DRT services can be measured using several metrics dependent on the scheme aims and objectives:
- Access to services: How many more households have access to a public transport service within 400m or 800m of their home compared to current provision.
 - Passenger loadings per vehicle: The number of passengers utilising the service is a fundamental measure of success. Services should be aiming for higher vehicle loadings than a taxi would accommodate to demonstrate value for money provision.

- **Service Efficiency:** Assessing the service's ability to meet passenger demand is crucial. This includes measuring factors such as wait times, on-time performance, and overall service reliability.
- **Customer Satisfaction:** Gathering feedback from passengers through surveys provides insights into their level of satisfaction. Measuring satisfaction against previous fixed bus services or DRT schemes is essential.
- **Cost-effectiveness:** Evaluating the service's financial performance is important and an element that can be lacking as outlined earlier in this report. Comparing the operating costs of the service to the revenue generated. Efficient resource allocation by measuring passenger trips per vehicle hour and revenue generation vs alternative fixed bus services and the budget allocated.
- **Environmental Impact:** Assessing the service's contribution to reducing traffic congestion, greenhouse gas emissions, and overall environmental sustainability is important. The most principal factor here will be modal shift from car to DRT and any negative shift from alternative bus to DRT should be monitored.
- **Community Impact:** Considering the impact on the local community is valuable. This can involve evaluating accessibility improvements, social inclusion, and economic benefits generated by the service. Many DRT services cost more than traditional fixed bus services but can demonstrate social benefits which may outweigh this so careful consideration needs to be paid to non-financial benefits.

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