

SustAccess



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dHC

Review of Park and Ride in Aberdeenshire

Aberdeenshire
COUNCIL



Interreg North Sea Region

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Executive Summary

The aim of the European Union funded SustAccess programme is to promote sustainable accessibility between hinterlands and gateways around the North Sea. As part of the SustAccess project in North East Scotland, Aberdeenshire Council commissioned the University of Aberdeen and DHC to review Park and Ride within Aberdeenshire to assess its contribution to the aims, objectives and targets of Local Transport Strategy and North East Scotland Transport Partnership (NESTRANS) Modern Transport System (MTS).

Park and Ride is commonly defined as passenger mode transfer from private car to public transport. It varies in formality, from highly informal on-street parking in the suburbs with lift-sharing into the town or city centre, to formal dedicated terminals and services with car parking facilities provided.

Aberdeenshire Council's Local Transport Strategy (LTS) establishes Park and Ride as a means to decongest existing road-space, by transferring journeys from car to bus over those sections where road-space is most congested. Regional policy envisages a Park and Ride network as part of a package of major schemes to be implemented by 2011 in the area. At a national level Park and Ride provision is identified as a way to increase bus and train use and reduce traffic in towns and cities.

To date development work has been undertaken on six bus based Park and Ride schemes in Aberdeenshire at: Banchory, Ellon, Fraserburgh, Mintlaw, Parkhill, and Peterhead. Only one scheme at Ellon has been fully implemented. Failure to proceed on the other schemes is for many reasons, such as: perceived inappropriateness of the selected sites, a belief that Park and Ride would damage the local retail economy, and preference for town-centre based interchange. Options are being considered for the other sites with a town-centre interchange has now been proposed in Peterhead, and proposals at Parkhill currently being stalled pending a decision on the route of the Aberdeen the Western Peripheral Road.

The approach to bus based Park and Ride from Ellon, operating from a landward town is unusual, since most bus Park and Ride operates from edge of town sites using local bus services. The experiences from the successful Ellon scheme therefore provide important lessons for Park and Ride development more generally. The Ellon scheme uses existing inter-urban bus services, but provides a focal point for car users to interchange with these services. The relatively high travel time and distance to destination is also associated with poorer service frequencies and higher absolute fares than edge of town schemes. Nevertheless the cost per mile is considerably lower than for edge of town schemes such as those operating from Kingswells and Bridge of Don in Aberdeen.

The existing Bridge of Don and Ellon Park and Ride schemes serve the same corridor into Aberdeen so comparisons between the markets for the sites are of particular interest. Until October 2005, Bridge of Don Park and Ride charged for parking, with no on-bus fare, so groups paid the same price as

individuals. This made it far better value for large groups to use Bridge of Don rather than Ellon. A group ticket was introduced at Ellon to make it relatively more competitive, but the higher operating costs of providing more capacity on the longer bus journey from Ellon means that Park and Ride from the landward town has been less competitive for group travel than continuing in by car to Bridge of Don and using the Park and Ride from there.

The cost of parking in Aberdeen city centre has increased, with long-stay parking for a full working day in the city centre being similar to or above the cost of using Ellon Park and Ride. Overall the cost structure for Ellon Park and Ride should be attractive to individual commuters, but will be less competitive for groups, short-stay visitors, or those with free parking at their destination.

Bus services from the Ellon site are focused on Aberdeen, with at least three services per hour during the day and more services at peak periods. Vehicles vary in type, although tend to be coaches. The Park and Ride site consists of: a car park for up to 250 cars; a bus boarding/turning circle; a drop off area; cycle lockers; and a main building with a passenger waiting area, toilets, telephone and attendant's office. No charge is made for parking, with users paying individually as local bus passengers.

The scheme has been evaluated against its objectives, by reviewing available bus patronage and traffic flow data and undertaking surveys of users and organisations with knowledge of the scheme. These show that:

- Usage has grown steadily year-on-year since opening, with particular growth between August and December. Average weekly bus patronage in 2004 was 1,350 people; an increase of nearly 300 passengers from 2003. Each year much of the growth between August and December continues into the new year, suggesting that new users are being attracted in the run-up to Christmas, when parking in the city centre is most difficult, and continuing to use the service thereafter.
- The existence of the Park and Ride has helped to support other local development, and is considered by the Council to have influenced the location of a new local supermarket, now proposed on adjacent land. It is expected that this hub will start attracting other local development in line with the local development plan aspirations.
- Delivery costs the authority less than 20% of what it would cost to implement conventional dedicated Park and Ride services at the same location.
- Ellon Park and Ride appears to have contributed to stabilisation and slight growth in the bus market along the corridor. 94% of all passenger boardings at the site were onto commercial services, mostly to Aberdeen. 6% were onto supported services, to Dyce and Inverurie. It also contributes to the viability of rural bus services, rather than potentially undermining them
- Use is heavily peaked with approximately two thirds of all passengers boarding buses at the site between 06:30 and 08:30. Almost 80% of users

are adults, and over two thirds of users are female. Half of users live in Ellon. A high proportion of those living outside Ellon live in the Ellon-New Deer corridor. The purpose of most journeys is commuting or education, with travellers for shopping and other leisure pursuits choosing other travel options, largely car travel and walking.

- Just under three quarters of users of the site (72% of those surveyed) both “park” and “ride”. Car-based lifts to the site and interchange between buses are also both significant ways of accessing bus services from the site. This emphasises the importance of the site as an interchange between various modes.
- The most common reason for first using Ellon Park and Ride was an inability to find parking spaces in Aberdeen, and the ease of access of the Park and Ride site. However, a number of people were also attracted since the service was originally cheaper than the local bus. Negative aspects of driving to Aberdeen included: hassle, speed, cost and driving in heavy traffic. For Park and Ride, negative aspects related more to the bus service/journey rather than problems with the site itself. However the exposed and remote nature of the site was commonly mentioned. The most commonly stated negative aspect of the bus service and journey was overcrowding.
- Ellon Park and Ride is dealing with around 5% of with-flow peak car traffic on the Balmedie Bypass. Any impacts on overall traffic levels cannot therefore be robustly identified due to the different scales of trip making associated with the two modes, and the continuing rise in traffic levels.
- Park and Ride-related fare suppression at Ellon improves accessibility for Ellon residents relative to other parts of Formartine or Buchan. Improvements in accessibility can help promote employment or reduce social exclusion. The majority of people using Ellon Park and Ride are doing so for work or education journeys.

In the short term, future development of Park and Ride at Ellon depends on current problems being overcome particularly: bus overcrowding, Park and Ride fares reflecting those elsewhere on the local bus network, and improved targeting of marketing. In the long term, the success of the scheme is largely a function of the transport policy delivery. Of particular importance will be parking policies within Aberdeen City, and how this relates to the wider policies of Aberdeenshire Council and NESTRANS.

The approach at Ellon demonstrates a highly effective way to make accessible attractive bus frequencies to a small market without significant revenue commitment by the local authority. By avoiding significant revenue expenditure, the scheme is relatively cost effective in comparison to conventional Park and Ride, and more sustainable. However its impacts need to be monitored, Specific issues identified included the need to:

- Eliminate overcrowding on buses.
- Avoid suppression of fares.
- Acknowledge the responsibilities of each partner in the scheme.

- Target the scheme at individual commuter journeys to Aberdeen.
- Focus marketing of the scheme on Ellon residents and those living immediately to the north of Ellon.

Overall successful future Park and Ride delivery depends on:

- A targeted approach being taken to scheme development, using available rail and bus services, and enhancing these as required maximising accessibility in line with the potential market.
- Community engagement being more clearly structured towards practical and acceptable outcomes to help build consensus on scheme design and implementation. This involves working with parallel land use development and tailoring scheme objectives to local needs in addition to strategic concerns.

In planning locations for future Park and Ride sites, preparatory work should be done to clearly identify the needs of those likely to use the services provided. This should include factors like: their particular demographics, the likely requirements of their journeys and the capacity for behaviour change. The location of Park and Ride sites, and the specification of the facilities at each, depends on the current and potential travel markets being captured. From very local basic facilities, to regional, highly specified facilities, the different approaches to Park and Ride sites will attract different types of user for specific types of journey. Using this hierarchical approach to planning the sites has the potential to deliver significant growth in public transport usage from areas that have been traditionally hard to serve by local bus.

1.0 Introduction

- 1.1 SustAccess is a European Union sponsored project within the Interreg North Sea Programme, and involves 10 regional partners including Aberdeenshire Council and has participants in every EU Member State in the North Sea Region and Norway. SustAccess is short for Sustainable Accessibility between Hinterlands and Gateways around the North Sea.
- 1.2 The overall aims of SustAccess are, on the one hand to make gateways more accessible from their hinterlands, and on the other to support an increased use of more sustainable modes of transport. It covers both goods and passenger transport and includes partners ranging from gateway cities to smaller towns in hinterland areas. Partner activities and pilot projects include a wide variety of activities such as supporting the development of different gateway cities and their connection to their hinterland or improving public transport and making it more accessible.
- 1.3 As part of the SustAccess project, Aberdeenshire Council commissioned the University of Aberdeen and DHC (Derek Halden Consultancy) to review Park and Ride within Aberdeenshire. The study aims were to:
- Review the development of existing and proposed inter-urban Park and Ride sites in Aberdeenshire.
 - Benchmark the existing site's (Ellon) performance against (any) similar schemes in the United Kingdom, drawing out best practice.
 - Evaluate outcomes of the existing site (Ellon).
 - Identify further areas for development of Park and Ride.
 - Assess contribution to aims, objectives and targets of Local Transport Strategy and North East Scotland Transport Partnership (NESTRANS) Modern Transport System (MTS) strategy.
- 1.4 The report has been divided into chapters:
- Chapter 2 defines Park and Ride and considers the approach to Park and Ride in Aberdeenshire.
 - Chapter 3 outlines the current policy context.
 - Chapter 4 sets Ellon Park and Ride in context against other Park and Ride schemes.
 - Chapter 5 describes Ellon Park and Ride and documents the history of scheme development in Aberdeenshire.
 - Chapter 6 describes the method adopted to evaluate Ellon Park and Ride.
 - Chapter 7 analyses available monitoring data and the results of user and boarding surveys.
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- Chapter 8 assesses the contribution of Ellon Park and Ride.
- Chapter 9 provides a series of recommendations and proposals for further development.
- Chapter 10 summarises this report.

2.0 Park and Ride Defined

2.1 This chapter:

- establishes the meaning of the term “Park and Ride”
- highlights the car park and interchange functions in most Park and Ride schemes
- discusses the approach to Park and Ride adopted by Aberdeenshire Council.

2.2 This chapter is based on a short literature review, which is expanded further in the benchmarking chapter.

Standard Definitions

2.3 Park and Ride has been defined¹ simply as any passenger “intermodal transfer facility”. However, in Great Britain the term implies transfer from private to public mode. Commonly these modes are car and bus or rail. In the case of rail, park and ride typically accounts for around a third of all trips. However other high-volume public transport modes such as tram and light rapid transit are sometimes used.

2.4 Park and Ride varies in formality, from highly informal on-street parking in the suburbs with lift-sharing into the town or city centre, to very formal dedicated terminals and services with car parking facilities provided. The term tends to be applied only to formal schemes, where specific terminal infrastructure including car parking is provided, and the public transport services linking the terminal to the town/city centre are actively promoted as a unified product.

2.5 Park and Ride sites may be regarded as car parks, or interchanges, or some combination of the two.

2.6 For bus-based park and ride the car park analogy predominates². In this, the public transport element of the scheme is largely irrelevant to the users – they simply want to park and access the town/city centre, minimising the cost and time associated with doing so. The success of car park-focused schemes is therefore primarily a function of relative cost of Park and Ride to town/city centre parking, and time taken to use Park and Ride (including time diverting to drive to the site, transferring vehicles, and public transport in-vehicle time). Clearly in policy terms such schemes are more than simple car parks; they are co-ordinated approaches to achieve modal shift over congested sections of a route.

¹ Spillar, R. J., (1997), Park-and-Ride Planning and Design Guidelines, Parsons Brinckerhoff Quade & Douglas, Inc.

² The TAS Partnership, (2003), "Park and Ride Great Britain 2003: A Survey and Report."

- 2.7 The interchange analogy is normally a secondary aspect of Park and Ride schemes. The term does not simply imply the provision of facilities at interchanges. Rather it stresses the Park and Ride site as:
- a place to access the public transport network as a whole,
 - a hub on the public transport network where passengers feel they can safely and reliably transfer between public transport modes, and/or
 - tangible evidence of the existence of bus services.
- 2.8 For many schemes, the interchange role has evolved over time. Most early bus-based Park and Ride schemes were provided as local-authority led initiatives, independent of the local public transport network. Gradually, the number of commercially operated Park and Ride schemes has increased³, and in parallel there has been greater integration of Park and Ride services into the mainstream local bus network. While the interchange aspect of Park and Ride has become slightly more important, Park and Ride sites still tend to be situated at “edge of town” locations, where they are normally judged to be best able to attract people who would otherwise drive to the town/city centre.

Aberdeenshire Considerations

- 2.9 The Aberdeenshire approach is distinguished by some less common and innovative features for Park and Ride:
- It stresses “inter-urban” bus Park and Ride – interchange onto public transport for journeys between urban centres, rather than over the (invariably) most congested urban section of the journey, from the “edge of town” to the centre.
 - It also places slightly greater emphasis than usual on the use of the Park and Ride site for interchange between modes.
- 2.10 Although there are examples from the United States⁴, inter-urban bus Park and Ride remains a largely academic concept⁵. Almost all other formalised Park and Ride schemes⁶ within Great Britain utilise “edge of town” sites.

³ The TAS Partnership, (2003), "Park and Ride Great Britain 2003: A Survey and Report."

⁴ Including links between Dallas-Fort Worth, Albuquerque-Santa Fe, Seattle-Tacoma, Denver-Boulder, and Northern New Jersey-New York City. Spillar, R. J., (1997), Park-and-Ride Planning and Design Guidelines, Parsons Brinckerhoff Quade & Douglas, Inc.

⁵ For example, Parkhurst, G., (2000), A Long-Range Strategy for Car-Bus Interchange: The Link-and-Ride Concept.

⁶ 97 sites were identified by TAS in 2003, although this number has almost certainly expanded since.

- 2.11 Similarly, while a number of local authorities have developed the concept of small local rural public transport interchanges in small towns and villages (such as Lancashire’s “Carnforth Connect”), to our knowledge, none have actively sought to provide Park and Ride facilities or market the service as “Park and Ride”. For larger towns such as the Ferry Toll Park and Ride in Inverkeithing, the Park and Ride is not primarily serving a local catchment, but instead is a more traditional Park and Ride to by pass the most congested section of route into Edinburgh.
- 2.12 Rail Park and Ride however has a strong track record in the inter-urban market. Aberdeenshire have also from time-to-time promoted rail-based Park and Ride. Rail-based Park and Ride schemes tend to be regarded slightly differently from bus-based schemes, because in most cases they merely attempt to formalise what has already been happening – people driving to the station car park and boarding a train. Since there is rarely any additional service or facility provided, rail-based Park and Ride tends to be perceived as a normal rail service.
- 2.13 This is not always the case. In a few cases new infrastructure (stations and parking) has been developed for rail-based Park and Ride. Notable types are:
- Local – for example, a site near St Erth to provide seasonal access to St Ives in Cornwall.
 - Long-distance “edge of town” – for example, Bristol Parkway, which primarily provides direct access from the Northern Fringe of Bristol to the inter-city rail network.
 - Long distance “edge of hinterland” – for example, Tiverton Parkway, which functions as the principal point of access to the inter-city network for much of North Devon – it is completely isolated from any settlement, but well connected by the local road network.
- 2.14 However, inter-city access from “edge of town” areas is still commonly provided via historic stations serving established towns, merely with enhanced services and facilities – for example, Stevenage and Watford provide access to the inter-city network from the northern fringe of London.
- 2.15 So while this report focuses on bus-based “Park and Ride”, it also considers parallel and similar initiatives, such as rail-based schemes and the development of conventional interchanges such as the rail project and interchange project at Inverurie.

3.0 Policy Context

- 3.1 This chapter summarises current local, regional and national policy related to Park and Ride – it summarises published aims and strategies. The purpose of this chapter is to establish the current policy background, which will be used to inform the review of scheme development in chapter 5.0 and used in evaluating the scheme in chapter 8.0.
- 3.2 This review is based on desktop research, using extracts from public strategy documents.

Current Local Policy

- 3.3 Aberdeenshire's current Local Transport Strategy (LTS) was written in 2000. The document is currently being updated. The LTS is the principle statement of the authority's transport strategy.
- 3.4 The LTS establishes Park and Ride as a means to decongest existing road-space, by transferring journeys from car to bus over those sections where road-space is most congested. From the executive summary:

"Park and Ride enables car drivers to beat and ease congestion on some primary routes into Aberdeen."

- 3.5 Park and Ride is one of five key approaches to transport integration⁷:

"Park and Ride by bus and rail: to remove a significant proportion of road traffic from busy arterial roads, particularly those into Aberdeen."

- 3.6 Promotion of the development of Park and Ride is one of three key public transport strategy objectives:

"Although Park and Ride is not as sustainable a transport choice as conventional public transport, it serves an invaluable purpose in relieving congestion on routes into Aberdeen. The Council is committed to its innovative inter-urban Park and Ride initiative, to encourage more motorists to take the bus into the City. The Park and Ride facility at Ellon was opened in October 2000 and other sites are being considered at Mintlaw and on the A947 and A93 corridors. Rail-based park and ride services will also be investigated."

- 3.7 In addition, the LTS outlines the policy towards bus priority:

⁷ The LTS states, "integration of transport modes refers to the ways in which journeys, involving all types of transport, can be made more easily, where changes between modes are made as convenient and painless as possible."

"The Council will seek to give advantage to public transport in its management of the network through the appropriate provision of means to improve the speed and reliability of bus services, such as dedicated lanes, junction priorities and bus-only routes."

- 3.8 No specific targets have been set for Park and Ride, except to implement a total of three schemes by 2006, however, the LTS comments:

"In reality all of the projects within the Strategy will contribute in some way to the change in growth of road traffic on the Aberdeenshire network."

- 3.9 Given the focus on journeys to Aberdeen, it is important to consider Aberdeen City's LTS. In particular, parking policy, which affects the relative attractiveness of Park and Ride.

- 3.10 Aberdeen City's LTS establishes the basis for restricting the supply of car parking:

"Controls on the price and supply of car parking are seen ... as one of the most important policy tools to influence the way that people travel. ... it will be important to recognise and provide space for cars at home ... whilst reducing the supply and/or increasing the cost of parking at destinations where alternative travel modes are viable."

- 3.11 It goes on to differentiate between short-stay and long-stay (commuter) parking, and focuses policies for controlling parking on long-stay:

"This is being done by expanding the area of controlled parking; decreasing the availability and increasing the costs of longstay public spaces; and applying a maximum limit to car parking standards for private and commercial developments."

- 3.12 Aberdeen City's parking policy is therefore primarily restricting the ability of city-centre commuters to park.

- 3.13 Aberdeen City's LTS considers Park and Ride alongside bus services in general. Buses are regarded as a more sustainable mode of transport. The authority seeks to implement measures that improve the efficiency and attractiveness of bus.

Current Regional Policy

- 3.14 The Aberdeen and Aberdeenshire joint development plan, "North East Scotland Together", outlines Park and Ride sites at "edge of city communities" (on the periphery of Aberdeen), as well as Ellon and Mintlaw.

- 3.15 Regional policy is steered by NESTRANS (the North East Scotland Transport partnership). NESTRANS' key strategy is the Modern

Transport System (MTS). This provides a package of major schemes envisaged to be implemented by 2011, one of which is a Park and Ride network.

3.16 NESTRANS 2005 Annual Report⁸ states that:

"This [Park and Ride] has obvious benefits in terms of reducing congestion, improving air quality and providing wider transport choices."

3.17 The report outlines a £10.4 million expansion programme (to be implemented by 2011), with Park and Ride sites covering all major corridors into Aberdeen. The majority of the sites proposed are on the periphery of Aberdeen, at junctions with the proposed Western Peripheral Road:

- A96 at Chapelbrae (west of Dyce)
- A947 at Parkhill (north of Dyce)
- A90 south at an unconfirmed location.

3.18 One long-range Park and Ride site is listed, A93 at Banchory, approximately 15 miles south-west of Aberdeen. Funding was secured from Scottish Executive in 2004 for both the Banchory Park and Ride, and additional facilities at Inverurie improving connections between bus, rail and taxi facilities.

3.19 The 2003 NESTRANS Annual Report contains a similar set of proposals, with the addition of a park and Ride site at Mintlaw, north of Ellon.

Current National Policy

3.20 Clear support for developing Park and Ride is provided by current Scottish Executive transport policy in "Scotland's Transport Future", a white paper published in June 2004⁹. Park and Ride is considered in the context of improving "integration", as a tool to achieve seamless passenger journeys. The white paper reads:

"We will promote park and ride provision in the right places because it can increase bus and train use and reduce traffic in towns and cities. In Aberdeen [at least] 600 daily car journeys have been removed from the roads by park and ride, reducing the amount of traffic travelling into the city centre."

⁸ NESTRANS, (2005), "Annual Report 2005."

⁹ Scottish Executive, (2004), "Scotland's Transport Future."

- 3.21 Integration is just one of five themes outlined. Park and Ride will almost certainly contribute to accessibility objectives by reducing journey times, and potentially contribute towards environmental objectives, notably reduction in vehicle emissions and improvement in air quality.

Summary

- 3.22 Overall, the leading objective of Park and Ride in Aberdeenshire is to transfer journeys from car to bus over the most congested sections of road. The policy is focused on journeys to Aberdeen. Aberdeenshire's policies are not identical to those for the City, but are largely complementary:
- Aberdeenshire is attempting to intercept journeys to Aberdeen City centre at points within Aberdeenshire, while Aberdeen City is attempting to intercept journeys at the city periphery.
 - Aberdeenshire is focusing on congestion, which tends to occur during the morning and evening peaks and the Aberdeen City policy is reducing the need for commuters to take their cars into the city by providing alternatives such as Park and Ride.

4.0 Park and Ride in Context

4.1 This chapter:

- Reviews Park and Ride in Great Britain.
- Examines Ferrytoll inter-urban Park and Ride in Fife.
- Examines Aberdeen City Park and Ride schemes.

Park and Ride in Great Britain

4.2 It is important to set Ellon Park and Ride in context with other Park and Ride initiatives in Britain, and to highlight any similarities and differences. However, it is important to clarify that Ellon differs from most Park and Ride schemes, which are at “edge of town” sites, and are not served by inter-urban local bus services.

Approach

4.3 Comparison between Park and Ride schemes will be based on an existing review of Park and Ride data, rather than collecting new data. The primary source is ‘Park and Ride Great Britain 2003: A Survey and Report’ by the TAS Partnership. This work is based on a survey of local authorities and operators across Great Britain. This part of the investigation will be carried out using secondary sources in order to avoid the need to re-survey authorities and operators, especially when comprehensive data is available from the TAS report. Additionally, it would not be possible to carry out a full literature review due to time constraints.

4.4 Aberdeenshire Council provided comparable data for Ellon Park and Ride. The operator, Stagecoach Bluebird, made very limited data available. This was due, in part, to difficulties extracting data from older ticket machines. This meant that certain figures had to be estimated. As the Ellon data is for 2005, and not 2003, differences in fare level will be overstated, although other variables can still be compared directly.

4.5 Four case study areas were chosen to compare with Ellon Park and Ride. The sample was limited by the lack of benchmarking data – many schemes listed within the TAS work were provided without detailed usage data. The case study areas were chosen to represent a range of different Park and Ride schemes which have been implemented in Britain, and were chosen from the following criteria:

- Size/Characteristics of town or city served.
- Size and scale of provision (parking spaces and frequency of services).
- Charges (for parking or for travel). The charging mechanism will influence how groups of people use the service – paying only to

park will be cheaper for a group of people than if each pays individually on-bus for travel.

- Nature of operation/partnership (supported or commercial). Some Park and Ride schemes are local authority led, with the bus service paid for directly by the authority, others are run entirely by operators as commercial services.
- Complementary policies (for example, city centre parking policy).
- Legislative environments (specifically Scotland or England/Wales).

Comparison

4.6 The table below displays the data gathered, allowing the similarities and differences between all case study areas to be seen. Note that while Ferrytoll is in Fife, it primarily serves Edinburgh, just as Ellon primarily serves Aberdeen city.

Table 1: Park and Ride Scheme Characteristics

Variable	Ellon (Aberdeen)	Swansea	Oxford	Ferrytoll (Edinburgh)	Maidstone
Population ¹⁰ (000s)	185	223	134	430	139
Number of Park and Ride Sites	1 ¹¹	2	5	1 ¹²	4
Located on Edge of City	No	Yes	Yes	No	Yes
Total Parking Spaces	250	1,100	5,140	500	1,638
Passengers per year (000s)	35	115	1,793	162	641
Parked Cars per year (000s)	24	52	1,494	120	471
Average Parking Space Utilisation (cars per space per year)	106	47	291	240	288

¹⁰ Census 2001. Population totals are for the relevant district or city served by the scheme.

¹¹ Aberdeen City is also served by two further “edge of city” Park and Ride sites. These are not considered within this comparison.

¹² The City of Edinburgh is currently in the process of developing a network of Park and Ride sites, using both bus and rail.

Aberdeenshire Park and Ride

Variable		Ellon (Aberdeen)	Swansea	Oxford	Ferrytoll (Edinburgh)	Maidstone
Frequency of Services to City Centre (minutes)	<i>Monday to Friday peak¹³</i>	15-20	12-15	Every 10 or less	5-10	12-15
	<i>Saturday</i>	20	12-15	Every 10 or less	10	12-15
	<i>Sunday</i>	30	12-15	15-30	20	No Service
Serves intermediate stops		Yes	No	Limited stops	Limited stops	Limited stops
Maximum Duration of Journey (minutes)		50	20	15	25	10
Payment for Use of Park and Ride		On bus payment	Charged by car	Charged by car and on bus	On bus payment	On bus payment
Fares ¹⁴ (bus or car)	<i>Monday to Friday peak return</i>	£3.25	£1.50	£1.70	£3.50	£1.40
	<i>Off-peak and weekend return</i>	£3.25	£1.50	£1.70	£3.50	£0.80
City Centre Parking Cost	<i>8 Hours</i>	£7.00	£5.50	£12.00	£6.00	£4.00
	<i>4 Hours</i>	£5.00	£4.00	£5.00	£3.00	£2.40
Estimated Annual Revenue ¹⁵ (£000s)		£76 ¹⁶	£173	£4,124	£567	£513

¹³ 'Peak' journeys describe core commuter journeys, typically those started before 09:30.

¹⁴ Discounted fares are also available on many services, which include multi-journey tickets and period passes.

¹⁵ Estimated revenue is based on the charge per passenger and does not make allowance for discounted tickets. It also assumes that passengers are fare paying, which is problematic if fares are charged per car. (The TAS Partnership, (2003), Park and Ride Great Britain 2003.)

¹⁶ Estimate assumes two thirds of passengers travel at the full fare. This attempts to account for those passengers that travel at reduced fare (children, passes) or no fare (pensioners).

Aberdeenshire Park and Ride

Variable	Ellon (Aberdeen)	Swansea	Oxford	Ferrytoll (Edinburgh)	Maidstone
Nature of Operation	Commercial	Secured	Commercial	Commercial	Secured
Legislative Environment (country)	Scotland	Wales	England	Scotland	England

Source: 'Park and Ride Great Britain 2003: A Survey and Report', TAS Partnership, 2003. Except Ellon values, which are current values unless stated.

- 4.7 With the notable exception of Edinburgh, all the Park and Ride schemes serve small cities or large towns of approximately the same size (around 150-200,000 people). This is typical of Park and Ride schemes as a whole. While Park and Ride tends to occur within larger cities, it is less formalised and does not use dedicated services (for example, car parks at railway stations in suburbs).
- 4.8 Ellon and Ferrytoll are different to all other Park and Ride schemes, as they do not sit on the edge of a city. Both Ferrytoll and Ellon are located at the point where all road traffic from the hinterland they serve combines. In the case of Ferrytoll, almost all traffic from Fife to Edinburgh is funnelled onto the Forth Bridge. In the case of Ellon, traffic from Buchan is funnelled onto the A90 south of Ellon.

Frequency and Service

- 4.9 The scale of provision varies, from just 250 spaces at Ellon to over 5,000 around Oxford. Consequently it is not surprising that usage varies considerably between these locations. Car park utilisation is a useful way of comparing actual usage, because it relates the number of spaces to usage. Car park utilisation varies significantly between schemes, with Oxford and Maidstone both achieving the equivalent of full car parks every weekday, while Ellon achieves the equivalent of a full car park only two days a week. These values may reflect a number of different factors, including recently introduced schemes that are still growing patronage or over-optimistic planning assumptions.
- 4.10 The Ellon Park and Ride bus services are slightly less frequent than other services compared. Buses run every 15-20 minutes in peak times, instead of less than 15 minutes, as is the case elsewhere. When examining data for the whole of Britain, 47% of Park and Ride schemes had a regular frequency of every 10 minutes in peak times, which again is a much higher frequency compared to Ellon¹⁷. 10-15 minutes is generally regarded as the frequency below which passengers will not consult timetables, and will "just turn up" and travel. This behavioural pattern reflects services in urban areas. It is not clear whether the extended journey time to Ellon, and/or the rural

¹⁷ The TAS Partnership, (2003), "Park and Ride Great Britain 2003: A Survey and Report."

location will mean passengers are prepared to accept a longer average waiting time.

- 4.11 Ellon Park and Ride services serve all bus stops between the park and Ride site and Aberdeen. Elsewhere Park and Ride services do not serve local stops. For example, in Swansea the Park and Ride bus is a dedicated service, making no other stops. In Oxford, limited stops are made by buses to and from Park and Ride sites. Additional stops often increase journey times, and may lead to the Park and Ride service being regarded as lower quality, particularly where existing local bus services have a poor reputation for quality. Additional stops do tend to encourage use, both from the Park and Ride to destinations along the route, and by people making local journeys that do not involving the Park and Ride. They can also prevent the Park and Ride service from undermining local bus services, since they tend to lead to harmonisation of fares.

Charges

- 4.12 There are two key ways of charging for Park and Ride services – either charging on-bus for travel, or charging at the site for parking. In Ellon, Edinburgh and Maidstone, charges are made on the bus per person. In Swansea charges are made for parking. Oxford is unusual in charging for both parking and travel. When charges are made for parking there is normally no delay in bus boarding, but cash collection is required at the site. In collecting a bus fare, the bus operator has the responsibility for handling cash. When charging per person there is then a disincentive for high occupancy use, due to the cost imposed on each person.
- 4.13 Only in Maidstone do fares vary between the peak and off-peak. Although fares from Ellon are above average for Park and Ride, these will reflect the distance travelled. When fares are expressed as a proportion of journey time, Ellon is cheaper than many other Park and Ride schemes.
- 4.14 There is considerable variation between city centre parking charges. 8-hour charges will tend to reflect the price paid by commuters, 4-hour charges by shoppers. In Oxford and Edinburgh, 8-hour charges are considerably higher than 4-hour charges, which is not the case in Swansea. Oxford's parking charges are also considerably higher than the Park and Ride fares. It is reasonable to conclude that this balance has contributed to the relatively high usage of the Park and Ride (expressed as car park utilisation).
- 4.15 It can be seen that there are a mixture of Park and Ride services, those that are commercial, and those which are secured by the Local Authority. Both Ellon and Ferrytoll are integrated with existing commercial local bus services. Oxford's services are provided commercially, but still exist as a series of dedicated routes.

Summary

- 4.16 Overall, Ellon is different in fundamental ways to most other Park and Ride schemes. The geographical location of Ellon relative to the place it serves is significant, with most Park and Ride schemes positioned on the edge of the towns or cities they serve. Likewise, most Park and Ride schemes are operated with dedicated services, and are not simply served by existing local bus services. The only scheme directly comparable to Ellon is Ferrytoll. However this is serving a much larger destination – Edinburgh.

Ferrytoll Park and Ride

- 4.17 In order to provide a more in depth understanding of schemes which are similar to Ellon, Ferrytoll Park and Ride has been examined in more detail. Both Ferrytoll and Ellon Park and Ride are served by existing inter-urban local bus services, and both are situated some distance from the edge of the cities they primarily serve.
- 4.18 Ferrytoll Park and Ride scheme opened in 2000, with additional parking spaces opened in 2005. It lies on the outskirts of Fife and is in a good location to intercept car journeys before they cross the Forth Road Bridge to Edinburgh.
- 4.19 The information reviewed in this section is based on:
- The site's official website, www.ferrytoll.org (on 20 July 2005).
 - A telephone interview with Tony McRae, Lead Officer for Public and Integrated Transport, Fife Council, on 22 July 2005.
 - Other documents and data made available by Fife Council, as noted in the text.

Background

- 4.20 The Ferrytoll Park and Ride scheme was developed with European Regional Development Funding (ERDF). The Scottish Executive's Public Transport Fund funded the second stage of the Park and Ride scheme's development, comprising a multi-storey car park, which increased parking spaces to over 1,000 in 2005¹⁸.
- 4.21 Fife Council built the Ferrytoll Park and Ride site, but receive no income from it¹⁹. The costs of operating Ferrytoll are shared between the Council and Stagecoach with Stagecoach Fife staff operating the facility, and Fife Council maintaining the car park area.

¹⁸ Telephone call with Tony McRae, Fife Council.

¹⁹ Telephone call with Tony McRae, Fife Council.

Aims

- 4.22 The main aim of the Ferrytoll scheme was to encourage modal shift and in turn reduce the build up of cars en route to the Forth Road Bridge. Traffic growth in Fife over the last 10 years has increased by 35%. Flows across the Forth Road Bridge regularly exceed its intended capacity of 60,000 vehicles per day, with nearly 80% of those being single occupancy cars²⁰.
- 4.23 Ferrytoll Park and Ride aims to reduce the volume of traffic travelling to and from Edinburgh²¹ by providing a frequent bus service to passengers. The location of the Ferrytoll Park and Ride site provides the ability to intercept journeys from Fife before they all converge to cross the Forth Road Bridge. The introduction of bus lanes on the route into Edinburgh has meant that taking the bus into Edinburgh from Ferrytoll has the potential to be quicker than taking a car, thus encouraging modal shift on the basis of time savings.

Site Location

- 4.24 Ferrytoll Park and Ride is situated on the A90 South at the Ferrytoll Interchange at Inverkeithing. Its location allows easy access to and from the motorway via the Ferrytoll Interchange.

Site Facilities

- 4.25 The site includes both covered and non-covered parking spaces which are free to park in. The site is secured by Close Circuit Television (CCTV). In addition to car parking spaces, it offers 17 cycle lockers.

Figure 1: Ferrytoll Main Building and Car Park



- 4.26 The building facilities include one staffed building equipped with a vending machine, television, toilets, ticket machine and card phone. The car park and waiting area are locked when the service is not

²⁰ Fife Council, (2003), "Taking a Pride in Fife: Case Study Ferrytoll Bus Park and Ride"

²¹ www.ferrytoll.org

running. Ferrytoll opens 06:30 until Midnight on weekdays. It opens 06:30 until 00:30 on a Saturday, and 10:30 to 19:30 on Sundays.

- 4.27 In future the Council plans to improve Ferrytoll Park and Ride site by building of a slip road into the Park and Ride for cars and buses using the Park and Ride only. This will mean that cars and buses using the facility will not then have to queue to get off the M90 at the Ferrytoll interchange due to the high volumes of traffic on the M90²². This should improve bus service reliability.

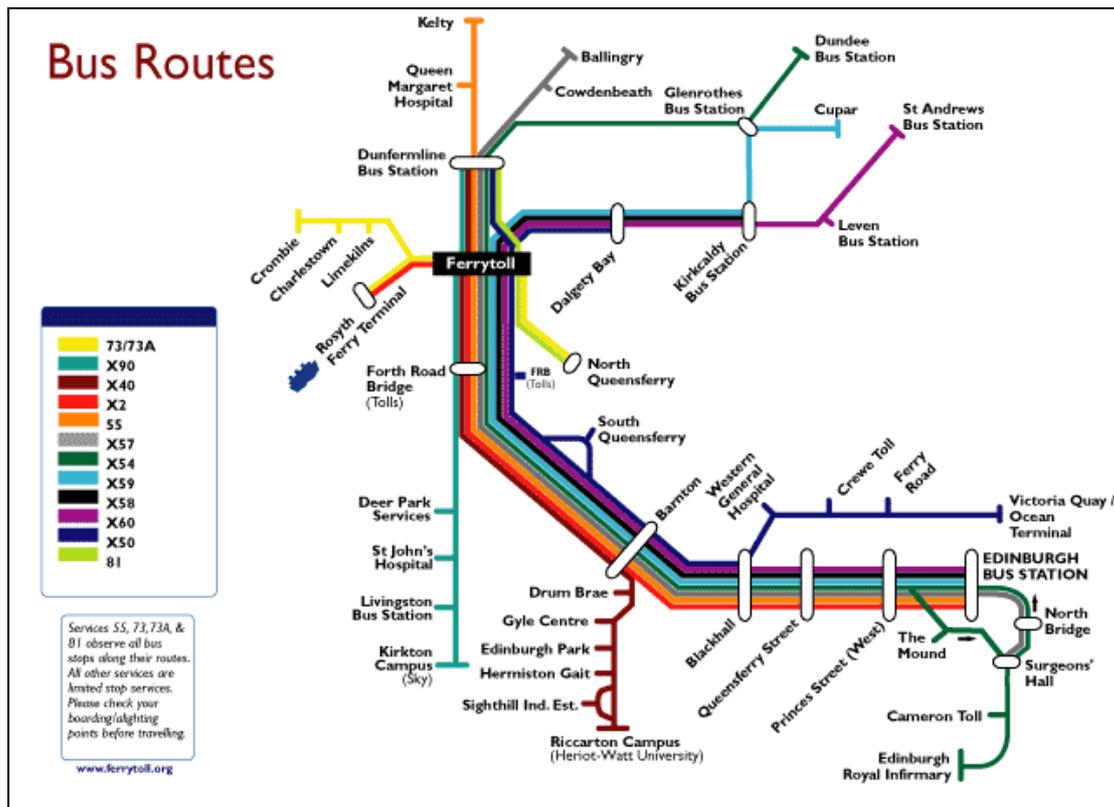
Service

- 4.28 Buses operate to Edinburgh city centre every 10 minutes during the daytime. Services also go to other locations in Edinburgh and the outskirts, including the Gyle Shopping Centre and Victoria Quay. There are a limited number of stops while travelling to Edinburgh which vary depending on the service.
- 4.29 Buses pick up passengers from the turning circle outside the waiting room at Ferrytoll. Buses are then able to use the dedicated southbound bus lane from Ferrytoll to the Forth Road Bridge. Once across the bridge, the buses make use of the traffic signal assisted bus lanes into Edinburgh which allow them to bypass queues of other vehicles.
- 4.30 Four bus companies currently serve Ferrytoll. Stagecoach Fife is the main operator, however E&M Horsburgh, Rennies of Dunfermline, and Yellow Taxibus (part of Stagecoach Group) also serve the Ferrytoll Park and Ride site²³.

²² Telephone call with Tony McRae, Fife Council.

²³ www.ferrytoll.org

Figure 2: Bus Routes Serving Ferrytoll Park and Ride



Source: www.ferrytoll.org

- 4.31 Buses which serve Ferrytoll Park and Ride are full length single or double-decker buses, and coaches. Some buses are able to provide disabled access²⁴. Vehicle type and age is not consistent across all services.
- 4.32 There are no dedicated bus services. Existing local bus services have been co-ordinated to pass through Ferrytoll. Figure 2 shows that 13 bus routes currently serve the site.
- 4.33 All buses which serve Ferrytoll are re-routed existing bus services, but had previously operated solely between town centres (such as Dunfermline). The main competing public transport mode is rail, with a regular train service to Edinburgh. Although the Park and Ride site is located parallel to the railway line, there is no provision for interchange onto rail.
- 4.34 Subsequent to the original research, Stagecoach withdrew Yellow Taxibus services.

²⁴ www.ferrytoll.org

Fares

- 4.35 Fares are charged per person on the bus. Car parking is free.
- 4.36 The cost of the bus depends on which operator is used. For example, the Rennies of Dunfermline adult return fare to Edinburgh is £6, however the Stagecoach fare is £4 for an adult day return. This compares with long-stay parking charges of over £10²⁵ per day.
- 4.37 The Yellow Taxibus offers a “dial-a-ride” style service in a limited area, but picks up from any stops along its route, which include Ferrytoll Park and Ride. The charges on the Taxibus also vary depending on the number of passengers who are travelling. Stagecoach also offer a range of discounted tickets available for regular travellers and groups. The Ferrytoll Megarider is £16, which allows 6 consecutive days return journeys to be made. The family scheme allows each adult who purchases a day return to take up to two children free²⁶.

Marketing and Publicity

- 4.38 Ferrytoll Park and Ride has a comprehensive website covering the service which it provides. This includes current relevant news about the service including fares, times, service and objectives.
- 4.39 When Ferrytoll was initially built there were radio advertisements and posters to raise awareness of the new initiative²⁷.
- 4.40 Variable message signs on the approach to Ferrytoll on the M90 also provide up to date information regarding the number of spaces left in the Park and Ride. The signs provide up-to-the-minute information for drivers travelling to Edinburgh²⁸.

Performance

- 4.41 Ferrytoll was originally designed as a “commuter car park”. This reflected the desire to target single-occupancy vehicles crossing the Forth Road Bridge (see 4.22). Figure 3 below shows annual average weekday passenger totals, split between those arriving before 10:00 (“peak”), and additional vehicles arriving between 10:00 and 14:00 (“off-peak”).

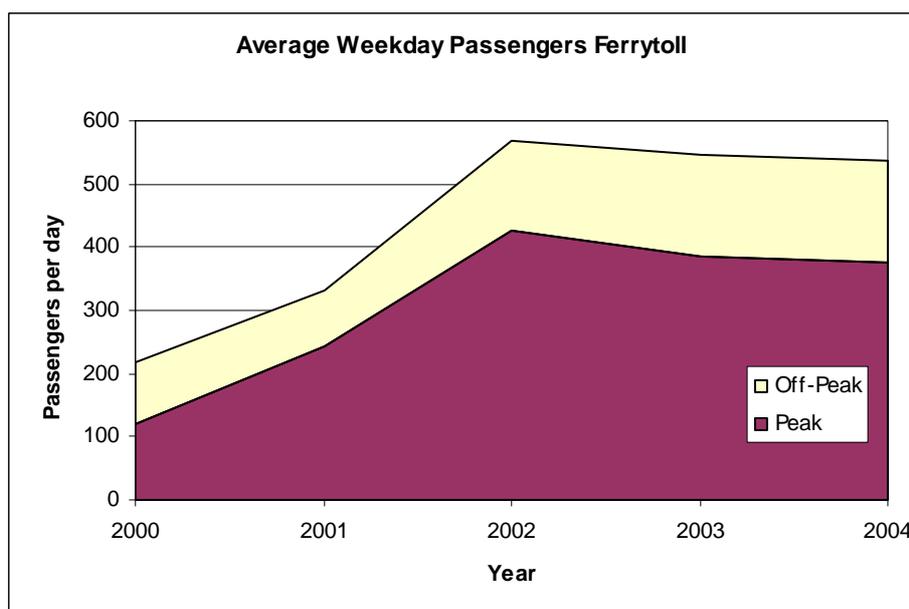
²⁵ For example, NCP’s St James Centre car park costs £13 for 7-9 hours, while their Castle Terrace car park costs £10.10 for 6 to 9 hours.

²⁶ www.stagecoachbus.com (21/07/05)

²⁷ Telephone call with Tony McRae, Fife Council.

²⁸ Telephone call with Tony McRae, Fife Council.

Figure 3: Average Weekday Passengers Ferrytoll



Source: Fife Council.

- 4.42 Figure 3 shows that the vast majority of users are using Ferrytoll Park and Ride in peak times. It is also displayed that there was an increase of approximately 350 passengers in the first two years of service. However the number of passengers between 2002 and 2004 had steadied off-peak and started to decline slightly at peak times.
- 4.43 Data from 2003 states that on average, 400-500 cars were using the Ferrytoll Park and Ride site each day, with a throughput of passengers which was approaching 600-650 per day²⁹.
- 4.44 It seems that the available car parking space (500) was inadequate to meet demand by 2003, and it was this shortage of capacity that suppressed demand. Fife Council decided to double the capacity of the Park and Ride site from 500 to 1,040 spaces in May 2005 by building a £5.5 million multi-storey car park³⁰. Stagecoach note that during this period parts of the site were closed to allow the site to be expanded.
- 4.45 Usage figures for Ferrytoll Park and Ride were not available for 2005. In May 2005 an electronic counting system has been installed but it is not currently in operation. Therefore, all data for Ferrytoll usage of both passengers and cars relates to the previous 500 space car park. It is said that 85% of the existing (1040 space) car park is used

²⁹ Fife Council, (2003), "Taking a Pride in Fife: Case Study Ferrytoll Bus Park and Ride"

³⁰ www.fifedirect.org.uk (20/07/05)

regularly³¹, suggesting a significant increase in usage following the increase in capacity.

Summary

- 4.46 Ferrytoll Park and Ride aims to encourage modal shift for journeys from Fife into Edinburgh, particularly those made by individuals at peak times.
- 4.47 It intercepts traffic immediately before it crosses the Forth Road Bridge, the point at which most traffic from Fife to Edinburgh converges.
- 4.48 It has delivered this service by re-routing many existing bus services via the Park and Ride site, which means that a frequent service can be provided without tangible additional resources (vehicles, drivers, and similar) and at marginal cost to the operator. However, this means it is not possible to brand vehicles, or even provide a consistent vehicle type.
- 4.49 Any operator can provide services from the site, which has caused inconsistencies in fare levels. This may be regarded positively – it encourages competition between operators on price.
- 4.50 Bus priority measures improve services' speed and reliability, which will tend to make it attractive for existing car users.
- 4.51 Extended journey times (when compared to an edge-of-city site) cause an above average fare level. However high long-stay parking charges in Edinburgh city centre mean Ferrytoll Park and Ride is still financially attractive for individual motorists.
- 4.52 The quality of facilities and information provided is high, including the use of variable message signs on nearby roads.
- 4.53 Initial growth in usage occurred over the first three years of the scheme. Subsequent growth was constrained by lack of capacity, which has only been relieved by expansion of the site in 2005.

Park and Ride in Aberdeen City

- 4.54 Park and Ride schemes in Aberdeen City have been examined in order to provide a comparison with Ellon Park and Ride: Bridge of Don Park and Ride to the north of the City, and Kingswells Park and Ride to the West of the City.
- 4.55 The examination of both Bridge of Don and Kingwells Park and Ride in Aberdeen is intended to provide a comparison of alternative

³¹ Telephone call with Tony McRae, Fife Council.

approaches to addressing the same issues – travel to Aberdeen city centre. Comparison of Ellon with the Bridge of Don site is particularly relevant, because both sites serve the same corridor – people travelling from Buchan to Aberdeen could use either site.

- 4.56 Park and Ride services in Aberdeen City provide a link to the City Centre and a number of key locations on the route. They are operated on a commercial basis by First Aberdeen³². Aberdeen City was the first city in Scotland to develop formal bus-based Park and Ride. Both Park and Ride schemes integrate into the network of bus services through the city, although the service is still operated with dedicated, branded vehicles.
- 4.57 The information contained in this section is based on:
- Published public information, including websites.
 - A telephone interview with Andrew Stokes, Technical Officer, Transportation, on 22 July 2005.
 - Documents and data made available by Aberdeen City Council, as noted in the text.

Background

- 4.58 Bridge of Don Park and Ride was a ‘flagship’ Park and Ride Scheme in 1994. It was part of the ‘Buses Mean Business’ initiative, which was funded by the Department for Transport as a demonstration of the role buses could play in the delivery of transport policy. The Kingswells Park and Ride scheme was then opened in 2001 after Aberdeen City Council submitted the proposal to the Scottish Executive’s Public Transport Challenge Fund.
- 4.59 Both Park and Ride schemes are part of a component of the Modern Transport System, being developed by the North East of Scotland Transport Partnership (NESTRANS). The Modern Transport System aims to implement an integrated package of transport measures to 2011 to improve the economy, accessibility and the environment of the North East of Scotland³³.

Aims

- 4.60 The Park and Ride network aims to provide car users with a quick and simple journey as an alternative to the car in order to reduce the number of cars travelling into Aberdeen³⁴.

³² www.aberdeencity.gov.uk/acc_data/service/park_&_ride_-_infrastructure.asp (21/05/05)

³³ NESTRANS, (2005), Annual Report.

³⁴ www.aberdeencity.gov.uk/acc_data/service/park_&_ride_-_infrastructure.asp (21/07/05)

Site Location

- 4.61 Kingswells Park and Ride is situated on the A944, 7 miles west of the City Centre next to the Kingswells roundabout. Bridge of Don Park and Ride is situated next to the Aberdeen Exhibition and Conference Centre on the A90 (south) with good access to the A956, the main route into Aberdeen City Centre from the north.

Site Facilities

- 4.62 Both Park and Ride sites in Aberdeen include similar facilities. Each site offers parking for over 900 cars, staffed waiting rooms, vending machines, cycle storage facilities, real time information, CCTV and toilets.

Figure 4: Passengers Boarding Bus at Bridge of Don Park and Ride



Service

- 4.63 A single bus route operates between Bridge of Don Park and Ride facility and Kingswells, via the City Centre. The same bus route serves both sites. Some of the services to Kingswells Park and Ride site have been extended to serve Kingswells village. As the Kingwells Park and Ride service remains quieter than the Bridge of Don service the service now extends into Kingswells Village.
- 4.64 From Monday to Saturday, a 10-minute peak service and a 15-minute off-peak service run. The Bridge of Don Park and Ride service starts at 06.45 and runs until 18.05 on weekdays, except on Thursdays when the service is extended until 20:05 for late night shopping. On Saturdays the service from Bridge of Don runs from 08.18 until 18.00. At Kingswells Park and Ride the service starts at 06.55 until 18.20, except on Thursdays where again there is an extension until 20.20.

On Saturdays the service runs from 08.15 until 18.15. There is no service on a Sunday from either site.

- 4.65 First Aberdeen operates the route with dedicated Park and Ride-branded buses. There are a number of dedicated stops along the route, all of which are branded with the Park and Ride logo³⁵. Single-decker articulated and non-articulated vehicles are used. These vehicles are of a similar age and quality to those used on other local bus services in the area.
- 4.66 Other routes serve both the Bridge of Don and Kingswells areas, but do not serve the Park and Ride sites. Although the Park and Ride service is separately branded from other services in the Aberdeen area, standard First tickets are valid for travel on all services, and many people will use the Park and Ride service for journeys that involve neither Park and Ride site.
- 4.67 Both Park and Ride sites are able to utilise the extensive bus lanes to make the journey quicker and more reliable.

Fares

- 4.68 Tickets are issued from machines on site. Up to five people travelling together can make a return journey to the city with their car parking all day and onward journeys for only £2.30. The Park and Ride ticket entitles users to a free onward journey (taken within 60 minutes of the start of users' journeys) with First from any of the existing Park and Ride stops. Incentives such as five people travelling on the Park and Ride encourage people to travel together to the Park and Ride, in an aim to reduce the number of single occupancy cars.
- 4.69 This contrasts with both Ellon and Ferrytoll, where fares are paid per passenger, and there is strong evidence to suggest a high proportion of users are driving alone.
- 4.70 At the Kingswells and Bridge of Don sites, tickets are issued at ticket machines on site. This saves time at the start of the journey as tickets do not have to be bought on the bus.
- 4.71 Subsequent to the original research, First moved to a per-adult payment, rather than a payment per vehicle. This is discussed further in 7.57.

Marketing and Publicity

- 4.72 The publicity to advertise both Park and Ride sites includes advertising in local newspapers and radio. Leaflets were distributed to residents in the City and in Aberdeen's surrounding towns to encourage those

³⁵www.aberdeencity.gov.uk/acc_data/service/park_&_ride_-_infrastructure.asp (21/07/05)

travelling from further a field to use the service. The location of the sites would make them unattractive for most city residents, since they are on the edge of the city. Businesses along the route of the Park and Ride have also been targeted in order to make them aware of the service and the advantages of using it.

- 4.73 Real Time Information is provided along the Park and Ride bus corridor, as well as on other bus routes³⁶.

Performance

- 4.74 Since 1994, when the original Bridge of Don site was opened there has been year on year growth in patronage³⁷.
- 4.75 In the financial year 2004/5, a total of 237,700 passengers used both Kingswells and Bridge of Don sites, with 150,600 vehicles parking between the two sites³⁸. Assuming 6-day opening, this equates to 765 passengers per day, and 485 cars parked per day.
- 4.76 Average car occupancy is 1.6 persons per vehicle, which is relatively low given the strong bias towards multi-occupancy vehicles in the fare structure. It may, however, be indicative of a high proportion of commuter users – such a bias is suggested by the variation in service frequency.
- 4.77 Assuming each of the 485 cars parked contributes £2.30, daily revenue is just over £1,100 per day. This is spread across the nine vehicles required to operate the service at peak, six off-peak. We estimate approximately 80 bus hours are required each day to provide the service. This gives just under £14 per bus hour in revenue. This is therefore not amongst the most profitable bus services and may not be covering its full operating costs³⁹. It may be that additional revenue from local passengers will be important for the long-term commercial sustainability of these services.
- 4.78 73% of passengers use Bridge of Don, and 27% use Kingswells, which partly reflects the travel patterns and routes served by these sites. The relative success of Bridge of Don is interesting, because this is the one corridor served by a “competing” Park and Ride site (at Ellon). The extent to which there are characteristics of the demography of the area (either fewer people, or fewer people likely to

³⁶ www.scotland.gov.uk/library3/transport/gobs-07.asp (21/07/05)

³⁷ www.british-publishing.com (21/07/05)

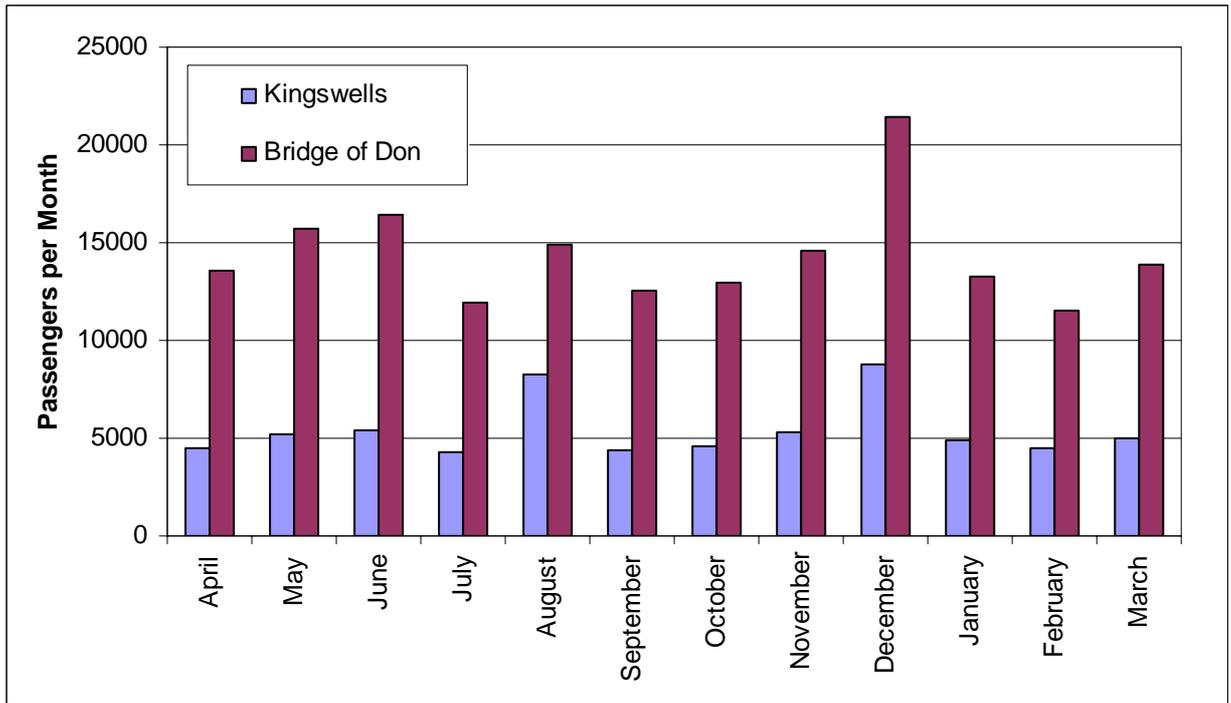
³⁸ Telephone interview with Andrew Stokes, Aberdeen City Council (22/07/05)

³⁹ Although precise details are unknown for First Aberdeen, in many parts of the United Kingdom, labour costs alone are approaching £10 an hour. Typically labour accounts for 60% of operating cost.

be attracted to Park and Ride) or differences in factors such as perceived congestion on each corridor, is something that could be investigated in more detail in future.

4.79 Monthly variations are in shown in Figure 5. The pattern is largely seasonal, with a peak at Christmas.

Figure 5: Numbers of Vehicles in 2004/5 using Aberdeen City Park and Ride



Source: Aberdeen City Council.

4.80 To improve the reliability of journey times, Ellon Road has been widened. Amongst other benefits, this improves access to the Park and Ride site, provides greater priority for buses through new and longer bus lanes and associated bus gates⁴⁰.

Summary

4.81 Aberdeen City Park and Ride offers frequent services which are run from two different sides of Aberdeen.

4.82 They aim to reduce congestion over a short distance into Aberdeen City Centre, by encouraging modal shift, particularly at peak times.

4.83 Bus priority measures have been implemented to provide a reliable and fast service.

⁴⁰ Aberdeen City Council: Environmental Strategy (2001) – Summary of Progress, September 2001-August 2002

- 4.84 The service is provided commercially, however our analysis suggests poor commercial performance, and it is not clear whether the current style of operation is sustainable. This is particularly true for Kingswells, where usage is far lower than at Bridge of Don.
- 4.85 In spite of having a fare structure that encourages use by users of multiple-occupancy cars, the average car occupancy is just 1.6.

Conclusions

- 4.86 Five case studies were examined in order to compare Ellon to other locations and types of Park and Ride scheme. Two similar schemes were then examined in further detail: Ferrytoll, another inter-urban Park and Ride, and the two Park and Ride schemes in Aberdeen, which have similar objectives to Ellon and carry passengers to the same destination.
- 4.87 Analysis of key variables such as car park utilisation, suggests Ellon is neither performing poorly or spectacularly when compared to other schemes. Further work would be needed to identify the level of mode shift that has been achieved, and the impact on the local bus network.
- 4.88 While service frequencies are relatively poor, and absolute fares relatively high, these are countered by above average travel time and distance to destination. When fares are expressed relative to journey time, Ellon is cheaper than many other Park and Ride schemes, particularly for individuals. There is some evidence to suggest Park and Ride schemes with high usage are simply those with the greatest difference between the Park and Ride fare and the cost of parking in the town/city centre served.
- 4.89 Although many aspects of Ellon Park and Ride are common to other schemes, key differences include:
- The geographical location of the site relative to the primary destination served is unusual – all except Ferrytoll are located on the edge of the city they serve, not within the rural hinterland.
 - The site is served by existing local bus services, with no dedicated services – again, all except Ferrytoll are served by bespoke services.
 - The scheme objectives were less specific than for most Park and Ride – As a more strategic scheme the target locations and travel markets for accessibility improvements, modal shift and impacts on congestion are not implicit in the scheme design.
- 4.90 Most other schemes are not directly comparable to Ellon. However some comparisons can be drawn between Ellon and Ferrytoll or the Aberdeen City Park and Ride schemes.
- 4.91 There are similarities between Ferrytoll and Ellon Park and Ride regarding the operation of the scheme, for example, neither has

- dedicated Park and Ride bus services. In contrast, Aberdeen City Park and Ride schemes do have dedicated Park and Ride buses, although there is a move towards greater integration with conventional local bus services – for example, the decision to serve Kingswells village.
- 4.92 Aberdeen City, Ferrytoll, and Ellon are all operated on a commercial basis, with no direct revenue support from local authorities. Ferrytoll and Ellon have a significant advantage in that there are minimal operating costs associated with providing the service, because they make use of existing services. In contrast, analysis of the Aberdeen City services suggests the approach adopted for the Ellon Park and Ride will require less long term investment.
- 4.93 Usage of all three Park and Ride schemes has grown progressively over several years following their introduction. In the case of Ferrytoll, growth seems to have been constrained by lack of car park capacity, which has only recently been addressed.
- 4.94 Current information regarding the number of parking spaces available at Ferrytoll Park and Ride is available to those travelling southbound on the M90, as well as at the entrance to the car park. This facility is not available at Ellon Park and Ride. It might be argued that Ellon does not need this level of technological provision until such time as the car park is regularly reaching maximum capacity, though this might serve as a positive indication to motorists.
- 4.95 All Park and Ride schemes reviewed have high quality waiting areas, which include buildings with facilities such as toilets. These facilities compare favourably to those available at most bus and railway stations. Ellon Park and Ride has a slightly above average level of facilities provided – for example, introduction of internet access so that onward long distance coach journeys can be booked from the site.
- 4.96 Ellon, Ferrytoll and Aberdeen City Park and Ride sites are staffed. This is in contrast to most other rural public transport terminals which would not usually be staffed. These Park and Ride sites are staffed in a comparable way to a car park, not a bus stop.
- 4.97 Aberdeen City, Ellon and Ferrytoll Park and Ride sites offer discounted tickets for regular travel. Group travel is also encouraged, which means that a number of people can travel on one ticket and allow a number of people to travel on it. However, Aberdeen City charges per car parked, while Ellon and Ferrytoll charge per passenger. This should create an incentive for multiple-occupancy car users to make use of the Aberdeen City scheme, however average car occupancy was still found to be relatively low (just 1.6).
- 4.98 Ferrytoll Park and Ride operates by buying tickets to board the bus at the bus terminal or on the bus itself. Ellon tickets are purchased on-bus. In contrast, at Aberdeen City Park and Ride schemes the ticket is

bought to pay for parking. This will tend to improve boarding speeds at Aberdeen City sites, however given the modest usage, the advantage of such a method of ticketing is less clear.

4.99 Both Ferrytoll and Aberdeen City Park and Ride schemes use bus priority measures to speed up the bus service, arguably, providing users with a more reliable service. Ellon Park and Ride scheme does not have its own purpose-built bus priority measures, however, it is able to use those within the Aberdeen City network.

4.100 Table 2 summarises these points.

Table 2: Summary of Comparison

Variable	Ferrytoll	Aberdeen City	Ellon
Primary market	Edinburgh city centre	Aberdeen city centre	Aberdeen city centre
Bus service	Existing local	Dedicated	Existing local
Nature of operation	Commercial	Commercial but poorly performing	Commercial
Growth after opening	Growth constrained by car park capacity	Incremental growth year on year	Incremental growth year on year
Driver information	Fixed and variable message signs	Unknown	Fixed signage
Quality of site facilities	High	High	Very high
Staffed	Yes	Yes	Yes
Charges	Per person	Per car	Per person
Ticket sales	On-bus	Off-bus	On-bus
Bus priority	Yes	Yes	Aberdeen city only
Car spaces	1,040 ⁴¹	1,800+	250
Passengers per year (000s) ⁴²	166	238	35
Cars parked per year (000s)	115	151	24

4.101 It has been possible to identify “alternative” practice – for example, different approaches to the operation and charging. However the differences between schemes, slight variations in objectives or places

⁴¹ Usage data is for a period when only 500 spaces were available.

⁴² 2004/5, except Ferrytoll, which is 2003/4.

served, and limits on the scope of the analysis, make determining “best” practice difficult. NESTRANS may be well placed in the future to review who is using sites like Bridge of Don Park and Ride and why in order to identify the most effective way to meet each objective.

5.0 Park and Ride in Aberdeenshire

5.1 This chapter:

- Describes the only completed scheme, Ellon Park and Ride.
- Documents the history of scheme proposals.

Ellon Park and Ride Description

5.2 This section describes the existing Park and Ride scheme at Ellon, documenting existing facilities, marketing and services. The purpose of this chapter is to assist with the benchmarking and evaluation of the scheme (in stages two and three of the project respectively), and to provide further background information with which to inform the review of scheme development contained in the second section of this chapter.

5.3 The description of the scheme is based on a combination of a site visit (on the morning of 1st July 2005), publicity and timetables, and additional information from Aberdeenshire Council officers.

Local Context

5.4 Ellon is a small town of just under 10,000 people⁴³ 16 miles north of Aberdeen. Smaller rural villages and hamlets surround it.

5.5 In 2001, 75% of all journeys to work by people in Ellon were by car, with just 7% by bus⁴⁴. 50% of the working population travel to work in Aberdeen City - almost 2,000 people. While we don't know what proportion of these people travel on any given day, if we assume people work at least three quarters of weekdays, there are 3,000 (one-way) journeys to Aberdeen City to or from Ellon each weekday for the purposes of commuting.

5.6 Ellon lies in the A90 corridor – the route between Aberdeen, Peterhead and Fraserburgh. It is the point at which routes from most of Buchan to Aberdeen converge. The town of Ellon is bypassed on the eastern and northern sides. Over half the route between Aberdeen and Ellon is dualled, although there are sections of single-carriageway highway. The section of the route within Aberdeen City includes extensive peak-only bus lanes.

5.7 The area is not served by rail, leaving bus as the primary form of public transport. The dominant operator is Stagecoach Bluebird, although there are some services provided by smaller operators. The

⁴³ 8,750 from 2001 census, but forecast to grow by 1,000 to 2006.

⁴⁴ 2001 census, derived from postcode AB41 9(xx).

bus network is focused on services to Aberdeen, and primarily made up of three service groups, each of which operates at least hourly during the day:

- Aberdeen – Ellon – Fraserburgh (267/268)
- Aberdeen – Ellon – Peterhead (260/263)
- Aberdeen – Ellon via A90.

5.8 The first two service groups are operated using coaches and marketed under the banner “The Buchan Link”. Services are operated commercially.

5.9 In addition Ellon is served by infrequent bus services to:

- Aberdeen via Pitmedden – run by Stagecoach
- Dyce – run by Stagecoach
- Ellon town service – run by Watermill Coaches during the first half of 2005, now run by Stagecoach
- Inverurie – “jointly” run by Stagecoach, Kineil Coaches and Bruce Coach Hire.

5.10 Aberdeenshire Council contracts the Dyce and Inverurie services.

5.11 From August 2003 Stagecoach started to operate services from Fraserburgh via New Deer to Aberdeen such that they terminate at Ellon Park and Ride on weekdays. Passengers for Aberdeen transfer onto other services to Aberdeen at Ellon Park and Ride.

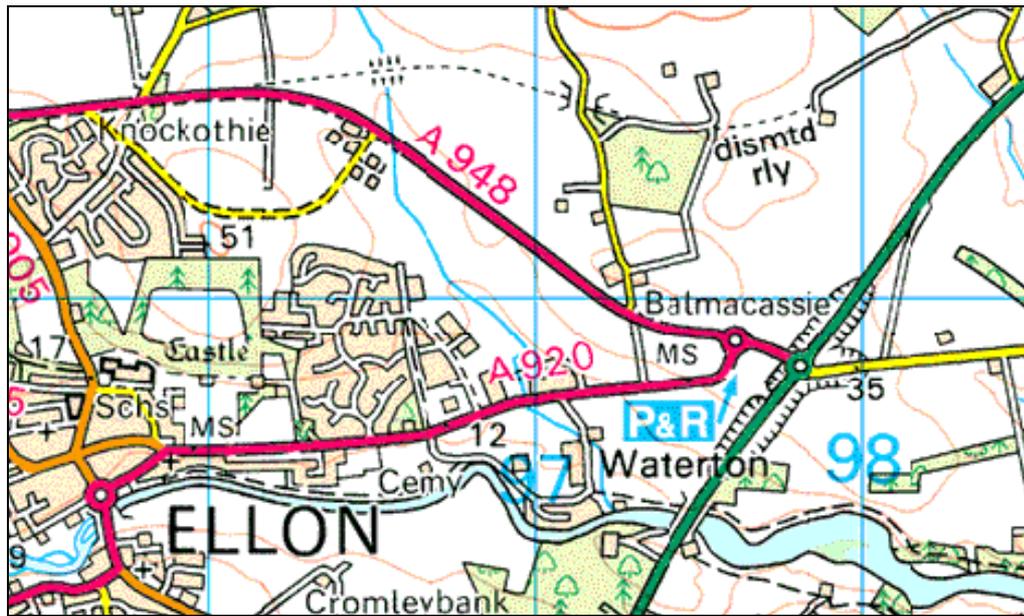
5.12 Formal Park and Ride facilities exist within the corridor at Ellon and Bridge of Don (on the northern fringe of Aberdeen). The Bridge of Don site is a more conventional “edge of town” site within Aberdeen City. It is not part of this review, although is considered in the context of benchmarking (stage two).

Site Location

5.13 The Ellon Park and Ride site is situated to the east of the town, at the junction of the A90, A948 and A920. The A90 carries traffic between Aberdeen and Peterhead. The A948 intercepts traffic from central Buchan.

5.14 There is currently no safe walk route between the town and the site. Although the site is only within a mile of Ellon town centre, it feels relatively remote, surrounded by open land. It is intended to provide a safe walk/cycle route from Ellon, and ultimately much of the surrounding land is likely to be used for retail and housing.

Figure 6: Location Map



Source: Crown copyright by permission of Ordnance Survey Ltd, licence no LA09022L. The site location is shown "P&R".

Site Facilities

- 5.15 The site cost approximately £650,000 to design and build. It was opened on 5 November 2000.
- 5.16 The Park and Ride site consists of:
- car park for up to 250 cars (including various recycling facilities)
 - bus boarding/turning circle (used by non-terminating services in both directions)
 - drop off area (used by taxis, lift-shares and terminating bus services)
 - main building (includes a passenger waiting area, toilets, telephone and attendant's office)
 - cycle lockers (8).
- 5.17 The site is theoretically open 24-hours a day, since there are no gates preventing entry to the car park, however the main building is only open between 06:30 and 19:30 Monday to Saturday, one hour later on Thursday (for late night shopping in Aberdeen). Comments from users suggests that almost all use occurs when the main building is open.

Figure 7: Main Building



The bus bay can just be seen to the left of the main building. Blue cycle lockers are visible in front of the building. The drop-off area and car park are to the right of the camera.

- 5.18 Main building facilities include seating, a drinks machine, children's play table, television, public transport information (bus maps and timetables, including information of First services in Aberdeen), and non-transport information (tourist guides, free newspapers). A computer with broadband internet connection was installed during Summer 2005, to allow bookings to be made onto long distance coach services. A baby-changing facility is also due to be introduced.
- 5.19 The building is heated under-floor. The attendant reported that it is well used during unpleasant weather, but during summer many passengers prefer to wait in the bus shelter by the bus boarding/turning circle. The building also serves as a crew rest point for drivers of terminating bus services.
- 5.20 When the main building is open, an attendant is present. Two attendants work each day – one in the morning, one in the afternoon. The attendant is responsible for monitoring security in the car park, which they do by both use of CCTV security cameras and walks around the site. The attendants provide informal passenger information, and also administer access to cycle lockers.

Figure 8: Waiting Area



- 5.21 There is scope for information to be improved. Some users commented that they are unsure precisely when the next bus will arrive and real time information could overcome this. The attendant sometimes provides information, since they are able to comment how long it has been since the previous bus departed. Perhaps the most important type of information provided by the attendants is reassurance that “buses are running and one will be along fairly soon”.
- 5.22 The principal operating cost of the site is the attendants – estimated at £35,000 per year. No figures were available for other costs, such as maintenance or utilities. No major maintenance work has been carried out since the site opened.

Fares

- 5.23 There is no charge for parking. Passengers pay on-bus as normal local bus passengers.
- 5.24 At the time of writing Stagecoach offer a £3.25 day return to Aberdeen (or Inverurie or Dyce), with a £15 “Commutercard” giving 7 days travel to Aberdeen. The Commutercard also allows travel with one other adult and 2 children free at weekends. Commutercards are not sold on-bus. An off-peak group ticket is available for £6.50, allowing 2 adults and 2 children, or 3 adults, to make a return journey to Aberdeen after 09:00 Monday to Friday or anytime at weekends. Standard concessionary fares arrangements (free travel for Old Age Pensioners) apply.

Figure 9: Fares Publicity Displayed in the Main Building



- 5.25 All Stagecoach fares to Aberdeen allow onward travel on Stagecoach's Aberdeen city network. However, it should be noted that Stagecoach are not the dominant operator in Aberdeen, and consequently not all destinations within the city will be available without additional fare.
- 5.26 Fares are broadly comparable to those offered for local journeys from Ellon (town) to Aberdeen.

Marketing and Publicity

- 5.27 A range of publicity is routinely produced, including individual timetables/service leaflets by Stagecoach, and at-site timetables, website and posters by Aberdeenshire Council. The publicity does not create a consistent image, varying from professionally designed and printed material to fairly basic posters. A comparison of Figure 9 above, with Figure 10 below, shows the branding.
- 5.28 A user competition and associated publicity occurs in the run-up to Christmas, a time when shoppers tend to be making more journeys to Aberdeen. In addition, occasionally (three times since 2000) leaflet drops are made to households in Ellon and the surrounding area.

Figure 10: Timetable Leaflet

MONDAYS TO FRIDAYS	
route number	260 267 268
Aberdeen bus station	0655 0730 0745
Ellon Park + Ride	0738 0808 0833
route number	X50 267 260
Aberdeen bus station	1005 1030 1045
Ellon Park + Ride	1040 1108 1123
route number	260 267 X50
Aberdeen bus station	1345 1400 1415
Ellon Park + Ride	1425 1438 1453
route number	260 X50 267
Aberdeen bus station	1635 1700 1715
Ellon Park + Ride	1721 1740 1755
route number	268 268
Aberdeen bus station	2130 2230 2245
Ellon Park + Ride	2208 2308 2323
SATURDAYS	
route number	X50 X50
Aberdeen bus station	0705 0800 0815
Ellon Park + Ride	0740 0840 0855
route number	X50 267
Aberdeen bus station	1205 1230 1245
Ellon Park + Ride	1240 1308 1323
route number	X50 268
Aberdeen bus station	1605 1630 1645
Ellon Park + Ride	1640 1708 1723
route number	268 260
Aberdeen bus station	1930 2030 2045
Ellon Park + Ride	2008 2118 2133
SUNDAYS	
route number	260 268
Aberdeen bus station	1000 1030 1045
Ellon Park + Ride	1043 1113 1128
route number	260 268
Aberdeen bus station	1600 1630 1645
Ellon Park + Ride	1643 1713 1728

Services

5.29 The Park and Ride site is served by conventional bus services, re-routed to serve the site. There are no dedicated services, although a few of the vehicles operating between Ellon and Aberdeen are branded “Park + Ride”. The bus boarding bay/turning circle at Ellon Park and Ride may need to be improved to allow the operation of larger articulated coaches (which Stagecoach run elsewhere in Scotland).

Figure 11: “Park + Ride” Branded Coach



5.30 Destinations served are shown in the table below.

Table 3: Service Level by Destination from Ellon Park and Ride

Destination	Weekday Peak	Weekday Daytime	Weekday Evening	Saturday Daytime	Sunday Daytime
Aberdeen (including Bridge of Don/King Street)	Every 15-20 minutes	Every 20 minutes	Hourly	Every 20 minutes	Every 30 minutes
Dyce	5 journeys		None	None	None
Ellon town service	Occasional	Hourly	None	Hourly	None
Fraserburgh	Every 30-60 minutes	Hourly	Hourly	Hourly	Hourly
Fraserburgh via New Deer	4 journeys			3 journeys	None
Inverurie	8 journeys			5 journeys	None
Mintlaw	Every 30-60 minutes	Every 30-60 minutes	Hourly	Hourly	Hourly
Peterhead	Hourly		Occasional	Hourly	Hourly

Source: Published timetables, correct at July 2005.

5.31 Saturday and Sunday service levels reflect those operating during the daytime. Note that headways between Ellon and Aberdeen are not always even, with some bunching of services at certain times.

5.32 All Aberdeen services terminate at Guild Street bus station (for interchange with rail), but also serve the eastern end of Union Street, the main commercial centre of Aberdeen. Guild Street bus station generally has lower quality facilities than Ellon Park and Ride, in spite of being far better used. It should be noted that many Park and Ride users board and alight at stops on Union Street, and do not use the bus station itself. A new bus station is due to be opened next to the existing Guild Street site in Autumn 2006.

5.33 Bus vehicle types are not consistent, with some step-entrance single and double-deckers in use, and minibuses on services to Dyce and Inverurie. However the majority of vehicles on services to Aberdeen are coaches – many less than one year old. The quality of passenger accommodation on these vehicles is high, and overall standards of cleanliness and maintenance good. No low-floor wheelchair accessible vehicles are in use.

5.34 The Park and Ride site is typically used by individuals, or small groups, who drive to the site, park, and then board a bus to Aberdeen. However, there are some other notable uses:

- Private cars that drop off people who then board the bus.
- Taxis dropping off people who then board the bus.

- Informal lift-sharing – people who drive to the site, park, and then share a car with someone else for the core part of their journey.
- Interchange between bus services – for example, journeys from Peterhead to Inverurie.

Summary

- 5.35 The Ellon Park and Ride site is situated 16 miles north of Aberdeen, approximately 13 miles from the urban fringe of the city.
- 5.36 The site provides a high standard of interchange from private modes to local bus services. The site is staffed Monday to Saturday daytime.
- 5.37 No charge is made for parking, with users paying individually as local bus passengers. Fares are comparable to those from Ellon. Some initiatives have been taken to reduce the cost to groups of people travelling together at off-peak times.
- 5.38 Marketing and publicity is inconsistent – varying in quality of design and image presented.
- 5.39 The site is served only by conventional local bus. The most frequent service is provided to Aberdeen. Vehicles vary in type, although tend to be coaches.

History and Development

- 5.40 This section describes the historical development of “Park and Ride” in Aberdeenshire. It identifies proposed Park and Ride schemes, and describes the:
- approximate timeline of events
 - objectives of each scheme
 - funding and implementation history
 - reasons for not progressing the scheme, if relevant.
- 5.41 The purpose of this section is to identify how Aberdeenshire proposals similar in nature to Ellon Park and Ride have been developed, and identify how approaches have evolved.
- 5.42 This section draws heavily on interviews with Aberdeenshire Council officers Richard McKenzie and Ewan Wallace. Information is also taken from the original bid document⁴⁵.

⁴⁵ TRL, (1999), The Scottish Office Public Transport Fund, Aberdeenshire Council and Bluebird Buses, Submission Document, 1999-2000.

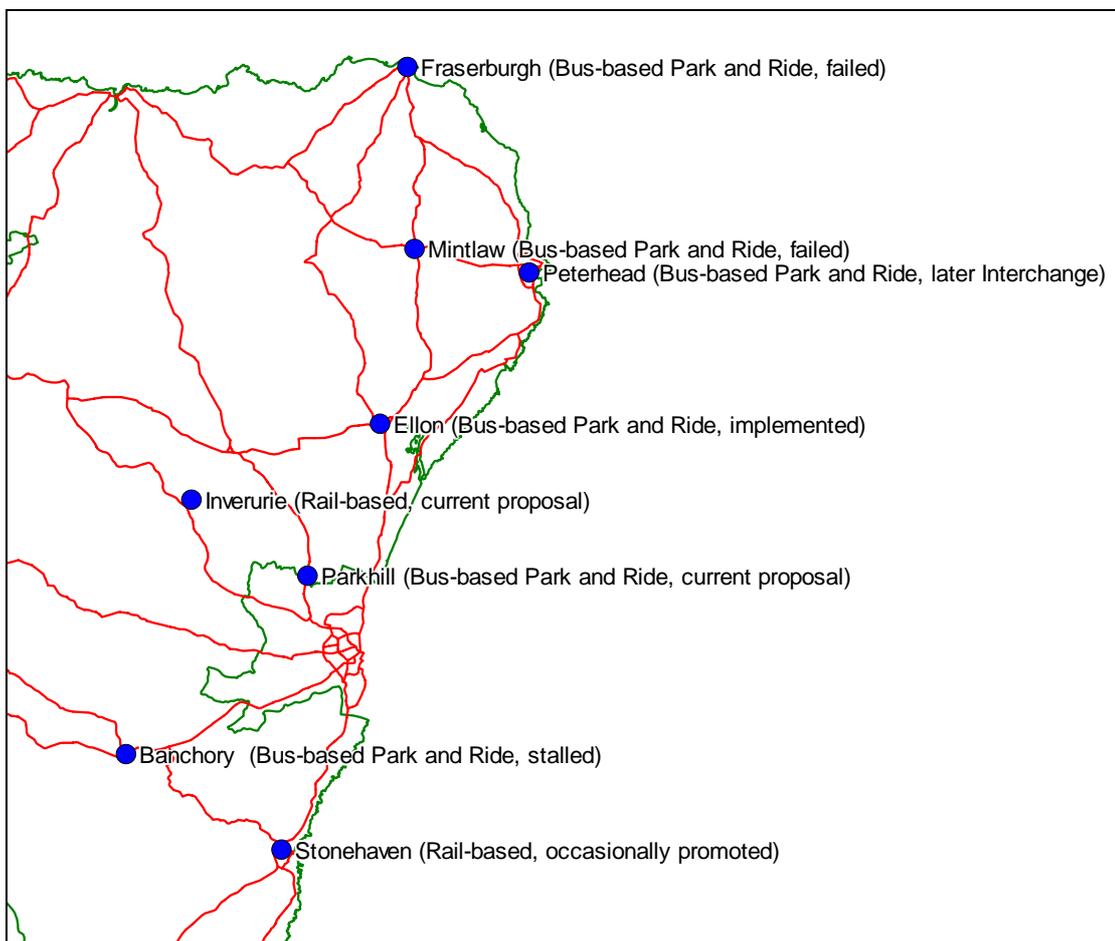
Early Development of Park and Ride

- 5.43 Park and Ride in the Aberdeen area first emerged in the late 1980s. The opening of a new shopping centre in Aberdeen caused traffic gridlock, forcing the local authority (then Grampian Region) to consider alternative forms of transport to ensure access to the city centre. The short term outcome was a Christmas-only Park and Ride service, operated from Woodhill House (in the western suburbs of Aberdeen) to the centre of Aberdeen. The concept of Park and Ride was formalised in policy as part of the 1995 Grampian Local Transport Strategy.
- 5.44 During the 1990s, a more formal, full time Park and Ride was established at Bridge of Don, on the urban fringe of Aberdeen. The scheme was part of the “Buses Mean Business” initiative, part funded by the Department of Transport. It included extensive bus-lanes on the road between the site and the city centre (along King Street). The site continues to be operated on a commercial basis by First Aberdeen. Bridge of Don was intended to attract commuters, however initially much of the patronage was shoppers. Initially the site followed a very traditional model of Park and Ride provision, with dedicated bus services and payment for parking only. Further background to Bridge of Don will be provided in the context of benchmarking.
- 5.45 In 1997, Aberdeenshire Council consulted on their transport strategy, “Accessibility in the Millenium”. Some residents of Buchan, particularly Peterhead, commented that they shouldn’t need to drive most of the way to Aberdeen before using Park and Ride – they would prefer to use a site closer to home. Given the distances involved – 20 or 30 miles in some cases – this appeared to be an entirely rational perspective.
- 5.46 The authority was also aware of the existence of informal Park and Ride from Ellon to Aberdeen: People parking or being dropped off in the centre of Ellon, and then boarding the bus to Aberdeen. They were attracted by the high frequency from the centre of Ellon (higher than suburban areas and the surrounding hinterland), and the facilities available (such as shelters). Indeed, as early as 1983, car parking had been provided at Ellon specifically for the use of bus passengers.
- 5.47 The decision to develop inter-urban Park and Ride was regarded as an experiment: One possible way of developing a more sustainable transport system (in simple terms, one not entirely dependant on car). It was intended to contribute towards reducing congestion and improving overall road safety. It complemented Aberdeen City Council’s policies, which had steadily been reducing city centre parking, particularly for commuters.
- 5.48 Stagecoach Bluebird, the dominant operator in the area, were involved early in formulating the proposals. This involvement was a reflection on the existence of close partnership working between Stagecoach

and Aberdeenshire Council. The main factor behind Stagecoach’s participation is thought to be the possibility of long-term growth in patronage on commercial services. However other factors may have been relevant, such as creating indirect competition with First Aberdeen for Park and Ride passengers (First already operated Bridge of Don, which serves the A90 north corridor, the area proposed for the first schemes).

5.49 The involvement of only Stagecoach directly in Park and Ride does not reflect any bias on the part of Aberdeenshire Council. Stagecoach’s dominance in the area simply means they are very likely to be the main operator at any given location.

Figure 12: Summary Map of Proposed Park and Ride Schemes



Blue dots show scheme locations. Red lines are A-roads. The green line is the Aberdeenshire Council boundary.

Buchan Corridor Proposals

5.50 The Buchan-Aberdeen corridor was selected for a series of inter-urban Park and Ride schemes because:

- It was where the original consultation discussions had occurred.

- There was already extensive bus priority on the corridor within Aberdeen (along King Street).
 - The corridor was not rail-served.
 - The local bus network supported a “reasonable” frequency of service commercially.
- 5.51 In August 1998, Aberdeenshire Council and Stagecoach Bluebird jointly applied for funding from the Scottish Office/Executive.
- 5.52 A package of four schemes was proposed in the corridor, with sites at Ellon, Fraserburgh, Mintlaw and Peterhead.
- 5.53 The bid outlined a series of objectives for the schemes:
- promote and encourage a modal shift in favour of public transport
 - reduce road traffic volumes for long distance and local travel
 - promote employment and reduce social exclusion
 - provide innovative and sustainable means of dealing with rural transport problems
 - reinforce the role of Fraserburgh, Peterhead, Mintlaw and Ellon as principal town and village centres in Aberdeenshire.
- 5.54 All schemes were based on common themes:
- diversion of existing commercial bus routes to serve the site
 - primarily offering access to inter-urban services to Aberdeen.
- 5.55 The bid suggested that sites might also be used for travel from Park and Ride sites to the local centre, although there is limited scope for this at Ellon and Mintlaw, and in practice such a feature would only have been of use during special local events, when existing car park capacity was exceeded.
- 5.56 The bid was for approximately half the capital cost of designing and building each of the Park and Ride sites. It was originally intended to bid for money to cover the cost of three additional vehicles, with which to enhanced service frequencies. At the time, it was thought that the Scottish Executive would not fund new vehicles, and consequently there was no bid for additional vehicles. Instead Stagecoach agreed to provide and operate two additional peak vehicles.
- 5.57 The proposal was appraised by TRL (Transport Research Laboratory), including site identification, indicative design, costing, economic, financial and environmental assessments.
- 5.58 The bid was successful, except funding for a real-time information component was refused.

Success in the Buchan Corridor: Ellon

- 5.59 The Ellon scheme as implemented did not differ substantially from the scheme proposed. A design and build contract delivered the project and no specific problems were identified during the planning or implementation of the scheme.
- 5.60 Ellon Park and Ride opened on 5 November 2000. The service was publicised using radio and press advertising, with leaflet drops to residents of Ellon and its immediate hinterland.
- 5.61 Unfortunately, the Ellon Park and Ride was greeted unfavourably by certain elements of the media, with accusations that prices were too high. At the time of the bid, a £3.50 return fare to Aberdeen was envisaged, just under £4.00 at current prices, with a comment that this was slightly lower than the equivalent fare from Ellon town, but not substantially lower. Initially the actual pricing strategy was the same as that applied elsewhere in Ellon.
- 5.62 Discussions with the operator lead to the introduction of a cheap day return ticket, priced at £2.95. This was less than the return fare from Ellon town to Aberdeen. However, Ellon fares were subsequently altered by Stagecoach to reflect the Park and Ride price. Since then, Park and Ride (and consequently) Ellon fares have tended to avoid price increases elsewhere – in relative terms, the Park and Ride has suppressed fares between Ellon and Aberdeen. It is not known whether this suppression of fares has been financed through an increase in patronage due to Park and Ride, or whether the policy has been adopted by Stagecoach to avoid bad publicity at a time when Park and Ride may still result in a growth of patronage.
- 5.63 There were also calls by the public for group fares. It is significant that Aberdeen City's Bridge of Don Park and Ride charges are for parking, with no on-bus fare. This means that at Bridge of Don groups pay the same price as individuals, making it far better value for large groups to use Bridge of Don instead of Ellon. Bridge of Don serves the same corridor as Ellon. A group ticket was introduced at Ellon, and 7-day "Commutercards" allowed the families of commuters to travel to Aberdeen at the weekend at no extra cost.
- 5.64 Stagecoach Bluebird had agreed to divert existing commercial services on the corridor into Ellon Park and Ride, as well as adding two extra peak vehicles. The situation has subsequently been confused by a bus network revision and the introduction of concession-related additional peak vehicles. Currently overcrowding is occurring on some peak services in the Buchan-Aberdeen corridor. A bid was recently made to the Scottish Executive to fund new double-decked coach vehicles for Aberdeen to Peterhead and Fraserburgh services, but this was not successful.

- 5.65 Ellon Park and Ride was originally only served by services to and from Aberdeen. However, Aberdeenshire have subsequently extended other supported cross-country services to the Park and Ride site, notably Ellon-Dyce and Ellon-Inverurie. While journeys to Aberdeen remain the focus of the scheme (and the only route on which sufficient frequency is delivered to make the Park and Ride attractive to “turn-up-and-go” users), other destinations are actively promoted.
- 5.66 Usage has grown steadily year-on-year since opening, with particular growth in the run-up to Christmas. However, much of this Christmas peak continues into the new year, suggesting that new users are being attracted in the run-up to Christmas (when parking in the city centre is most difficult), but are continuing to use the service thereafter. It may also be related to the additional marketing effort that takes place around Christmas – competitions and similar – which raise the profile of service.
- 5.67 A number of incremental improvements have been made to the facilities at the site, including drinks machine, children’s play area, and internet access. These have been implemented in response to comments by politicians and local people.
- 5.68 A foot/cycle route is due to be constructed between Ellon town and the Park and Ride site. Ellon itself is expanding in size, with new residential and commercial land due to be developed in the area between Ellon and the Park and Ride site. The existence of the Park and Ride has already influenced the location of a new local supermarket, which is now proposed on land opposite the Park and Ride. While the choice of site for the Park and Ride partly reflected the long-term development plans for the area, it may still be argued that the site itself will start attracting other local services, such as transport interchanges such as railway stations have historically.
- 5.69 Real-time information is still considered by officers to be desirable at Ellon Park and Ride.
- 5.70 No explicit targets were set for Ellon Park and Ride. All targets are “high level” and Aberdeenshire-wide, for example, increasing public transport patronage, or encouraging mode shift. The only specific target set for Park and Ride (in 2000) was to implement three Park and Ride schemes by 2006.

Failures in the Buchan Corridor: Mintlaw, Fraserburgh and Peterhead

- 5.71 The success in implementing the Ellon Park and Ride is mirrored by problems developing schemes elsewhere.
- 5.72 The Mintlaw scheme was originally designed with less parking spaces than Ellon (50-100) and fewer facilities (bus shelters rather than purpose built waiting room). A site was consulted upon to the north of

the town, from which a second site was suggested nearer to the centre of town, on school land. The site would serve three purposes:

- Park and Ride
- Additional parking for Mintlaw town centre (tending to lack capacity at busy times)
- Additional parking at the school.

5.73 Outline design was completed for a new Park and Ride site on former school playing fields. Although the playing fields were rarely used (due to flooding), the design was not deemed acceptable to local residents and parents. While local politicians continued to support the proposal, opposition by local residents and Sport Scotland was felt to be too strong to proceed.

5.74 The Fraserburgh and Peterhead schemes were intended to function both as interchange onto services to Aberdeen, and as conventional “edge of town” Park and Ride for journeys into Fraserburgh/Peterhead. Peterhead, in particular, lacks sufficient town-centre parking capacity. Whether frequencies (not more than half-hourly) would have been sufficient to attract local car journeys is moot.

5.75 Both the Fraserburgh and Peterhead schemes were promoted with strong emphasis on improving links to employment and education. Both towns have suffered from the decline of the fishing industry, and the loss of several major local employers.

5.76 The Fraserburgh scheme failed to develop, after local politicians became concerned that “retail leakage” would occur – people currently using shops in Fraserburgh would instead travel to Aberdeen. While these arguments were never substantiated, the loss of local political support removed the impetus for further scheme development.

5.77 The Peterhead scheme initially made more progress, with local political support in principle, allowing investigations of specific sites to be made. A suitable site was identified within the “Peterhead Gateway” scheme. A full economic impact study was conducted. However, by the time further decisions were sought, local political support had evaporated. A number of factors may have contributed to this, including:

- Perception that Peterhead would suffer the same “retail leakage” as politicians believed would occur in Fraserburgh.
- Desire for a town-centre bus station in Peterhead. It might be feared that the development of a Park and Ride would reduce the chance of the town gaining a bus station.

5.78 The failure to develop the majority of the Buchan schemes reveals the challenges of building local support: The schemes were conceived from suggestions of residents, but yet were ultimately thwarted by

local residents, either directly or via their political representatives. While the rejections inevitably reflected local concern about the precise schemes proposed, there is no evidence with which to conclude the policy itself was flawed. The problems in Buchan raise further questions as to whether the policy was implemented in the best way possible.

Buchan Corridor Revisited: Parkhill and Peterhead

- 5.79 The failure to progress three of the four initial Park and Ride schemes led to a reappraisal of what could be achieved. All four major centres in the Buchan corridor had been in the original proposal, leaving the only option to focus on other corridors. With the approval of the Scottish Executive the remaining funding was transferred to a neighbouring corridor. A new scheme was proposed at Parkhill, just north of Dyce on the A947 corridor.
- 5.80 The Parkhill site is much closer to Aberdeen – in effect, an “edge of town” site. The choice of location is pragmatic:
- Parkhill tends to be a confluence of traffic on the corridor – a site further north, away from Aberdeen, would not have the same potential market catchment.
 - Settlements further north along the corridor tend to be small – the local market would be far smaller than for somewhere like Ellon.
- 5.81 There is also a relatively low level of existing bus provision along the corridor, making it harder to achieve a frequent service from a site further north (although frequencies have been increased recently) – such a service would need a significant number of additional vehicles to be operated, which would in turn require significant revenue support. In contrast, Parkhill has already attracted the interest of a number of operators, who might be prepared to operate services commercially, probably on a similar basis to existing Aberdeen City Park and Ride sites.
- 5.82 The primary objective behind the Parkhill proposal remains reduction of traffic on congested roads, notably on the A947 corridor through Dyce and into Aberdeen.
- 5.83 The Parkhill scheme is currently stalled, awaiting a decision on the Aberdeen Western Peripheral Road. The alignment of the Western Peripheral Road will determine the most suitable road layout around the Parkhill site, so detailed design work for Parkhill cannot progress until the route of the Western Peripheral Road has been determined.
- 5.84 In 2002 a further bid was made to the Scottish Executive for a number of measures, including an interchange at Peterhead.
- 5.85 The Peterhead bus station proposal logically followed from the failure of the Peterhead Park and Ride proposal – it reflected a strong local

political desire for a town-centre facility. A site has been identified which is currently a car park, and proposals are currently moving through the planning process. A partial car park conversion raises the possibility of Park and Ride being provided from the site. However care would be needed to ensure that parking supply was sufficient to market the bus station as “Park and Ride”.

- 5.86 The scheme’s objectives are still focused on achieving mode shift, but by encouraging more conventional bus users. It is therefore a less direct approach than Park and Ride.

Late Addition: Banchory

- 5.87 During the preparation of the 2002 bid to Scottish Executive, Aberdeenshire Council considered the inclusion of an inter-urban Park and Ride at Banchory, on the A93 corridor.

- 5.88 To review the options for the scheme, public consultation began at the start of 2004. Six sites on the outskirts of Banchory were considered, plus one site in the centre of the town. The town-centre site was not wholly satisfactory, and had been included within the short-listing to demonstrate the difficulties in identifying a suitable town-centre site. However, despite this, the town-centre site emerged as the preferred option for the public reflecting a local political desire for some form of scheme to be constructed in the centre of the town.

- 5.89 Other challenges in developing the Banchory site were:

- The town and immediate hinterland has a relatively low population (Banchory itself has a population of around 6,000⁴⁶, while much of the surrounding area is hillier with very low population density).
- There was little opportunity for bus priority⁴⁷.
- Drivers from the area used one of two routes (drivers may be unwilling to use a Park and Ride service that uses a different route to the route they would drive, because they might not perceive that the route taken by the bus is the fastest or most direct route).
- Existing bus services are only just operated commercially, with very modest levels of service provision. In order to achieve a frequency attractive to car drivers (perhaps a bus every 20 minutes), considerable revenue support would be needed to operate the service. Although the Park and Ride might contribute to the viability of bus services on the corridor by attracting passengers, it would be unlikely to result in sufficient patronage increases to justify the provision of more frequent services commercially.

⁴⁶ 2006 population estimate, Aberdeenshire Council.

⁴⁷ Aberdeen City Council’s A93 corridor study had examined this in detail.

- 5.90 Aberdeenshire Council therefore opted to delay implementation. However following receipt of the Local Plan Reporter's positive views on the Banchory Inter-Urban Park & Ride proposal, in response to related public objections, it is now intended that work will be progressed on preparing outline design, land acquisition and planning for the Banchory Inter Urban Park and Ride interchange.
- 5.91 The facility would be similar to the existing Ellon Park & Ride facility. The updated estimated cost of the Banchory Interchange is £890,000 compared with the original estimate of £845,000, resulting in a projected funding shortfall of £45,000.

Rail-Based Schemes: Stonehaven and Inverurie

- 5.92 From time-to-time Aberdeenshire Council have promoted Stonehaven station as a rail-based Park and Ride site. However, the station car park is routinely over-capacity, since it is an attractive interchange for both journeys into Aberdeen from the south, and journeys to Dundee and the Central Belt from Aberdeenshire. NESTRANS is due to undertake a study in Spring 2006, which will examine car park capacity.
- 5.93 A third strand of the 2002 bid was for an interchange at Inverurie. The Inverurie interchange is a rail-focused scheme, primarily to expand existing parking provision at the railway station. Survey work found a high proportion of car park users to be people commuting by rail to Aberdeen. Unfortunately the railway service to Aberdeen is already at capacity during the peaks. Overall frequencies are also poor.
- 5.94 The railway service is due to be enhanced as part of the Aberdeen Crossrail scheme, with services every 30 minutes by 2008, and every 15 minutes by 2012. At this stage it may become feasible to market rail as a form of Park and Ride.
- 5.95 While bus services exist between both these locations and Aberdeen, they tend to be slower than the rail service, and are therefore not the focus of Park and Ride initiatives. However local bus services serve the hinterlands from the site emphasising its role as an interchange.
- 5.96 The decision to focus on either rail or bus is entirely dependent on the services that already exist in each corridor. It is however clear that bus-based schemes tend to progress quicker than rail-based schemes, something which is best explained by the nature of each industry: The bus industry is perceived as receptive to commercially robust ideas, and potentially far more radical. The rail industry is perceived as relatively conservative and harder to work with. This may in part also relate to the peripheral position of Aberdeenshire relative to the core of the Scottish rail network (strongly focused on Glasgow), while in contrast Stagecoach's Bluebird operations are entirely focused on Aberdeenshire, which is their core operating territory.

The Future

- 5.97 Ellon is broadly regarded as a success. It was a capital-intensive scheme, run largely “on the back of” an existing commercial bus network, so requires only very modest revenue support. There is clearly some frustration at not having been able to deliver any other Park and Ride schemes. However, bus-based Park and Ride schemes are being pursued actively for Parkhill, Banchory, Chapelbrae and Schoolhill.
- 5.98 In part, the future is rail-based. Aberdeen Crossrail proposals will increase rail capacity along the A96 (Inverurie) and A90 south (Stonehaven) corridors, potentially allowing further development of rail-based Park and Ride. These schemes may be relatively informal, with little more than station car parks.
- 5.99 Bus-based schemes the size and nature of Ellon seem unlikely. Pragmatically, all the major potential sites for large-scale inter-urban Park and Ride to Aberdeen have already been identified, and, mostly, not implemented for the reasons outlined above.
- 5.100 Instead, smaller bus-based facilities are likely to be developed. Basic interchanges in small rural settlements, with a car park, bus shelter, and little else. No additional bus services will be provided, simply those that already pass the site. Service frequencies will be lower than those conventionally associated with Park and Ride. Sites will lack some of the security features that larger sites can offer (such as on-site attendants). These sites may transpire to be appropriate to the areas they serve, or they could fail to attract car users, who will opt to drive all the way, or make use of more conventional “edge of town” Park and Ride closer to Aberdeen.

Summary

- 5.101 Ellon Park and Ride was intended as one of four sites at major centres in the Buchan to Aberdeen corridor. All four schemes were designed to make use of the existing commercial bus network.
- 5.102 Fares from Ellon Park and Ride were reduced after the site opened in response to media pressure. Fares from Ellon town have changed to reflect those from the Park and Ride site, effectively suppressing fares.
- 5.103 Similar proposals at Mintlaw, Fraserburgh and Peterhead failed to develop because of local peoples’ concerns – either expressed directly, or through their political representatives. These concerns reflected a number of factors, including the perceived inappropriateness of sites, belief that Park and Ride would damage the local retail economy, and preference for town-centre based interchange. A town-centre interchange has subsequently been proposed in Peterhead.

- 5.104 A further bus-based Park and Ride scheme was proposed at Parkhill, as an alternative use for funding not used in Buchan. This location is much closer to Aberdeen City, and the site would serve a neighbouring corridor. It is currently stalled pending a decision on the route of the Aberdeen the Western Peripheral Road.
- 5.105 Following community consultation in Spring 2004 a review of options for development was carried out and discussions with local Councillors indicated a need for greater community involvement. This will be carried out during the first half of 2006 along side a revised bid to the Bus Route Development Grant for bus services between Banchory and Aberdeen.
- 5.106 Rail-based schemes at Inverurie and Stonehaven have or are being developed. However existing service capacity during peak demand and the limited frequency of service is a limiting factor, as is the capacity of the Stonehaven Station car park.

6.0 Approach to Evaluation

6.1 This chapter describes the approach and method used to evaluate Ellon Park and Ride.

Aims and Approach

6.2 This section summarises the aims of Ellon Park and Ride, and outlines the approach adopted for evaluation. The scheme is primarily evaluated against what it set out to achieve – the aims determine the approach. However, it should be noted that outcomes can rarely be linked to specific schemes, nor is it normally possible to say what would have happened, had the scheme not been implemented. Relevant background factors are therefore also identified.

Aims

- 6.3 The objectives of the proposed schemes⁴⁸ were to:
- Promote and encourage a modal shift in favour of public transport.
 - Reduce road traffic volumes for long distance and local transport.
 - Promote employment and reduce social exclusion.
 - Provide innovative and sustainable means of dealing with rural transport problems.
 - Reinforce the role of Fraserburgh, Peterhead, Mintlaw and Ellon as principal town and village centres in Aberdeenshire.
- 6.4 The original proposal for Aberdeenshire Park and Ride included the development of three other Park and Ride sites which were not implemented. The objectives stated were for all four schemes. While most remain relevant to Ellon, some, such as the promotion of employment and reduction of social exclusion, appear to have been primarily targeted at other areas, notably Fraserburgh and Peterhead.
- 6.5 The principal aim of Ellon Park and Ride was to transfer journeys from car to bus over the most congested sections of road, focused on journeys to or from Aberdeen.
- 6.6 An increasing level of congestion causes ever-extended journey times and higher cost. Park and Ride seeks to provide a relatively faster and/or relatively cheaper alternative. So in practice the relative speed/cost of Park and Ride to private transport needs to be considered, and will help explain the outcomes of the scheme.

⁴⁸ For a full review of objectives and the other schemes, see the Stage 1 report.

Approach

- 6.7 In evaluating the scheme, we needed to provide evidence of mode shift from private car onto Park and Ride services at times of day when the road network is congested.
- 6.8 The road network tends to be congested during the morning and evening peaks. So where possible, peak and off-peak data were treated separately.
- 6.9 Absolute assessment of mode shift – did a specific journey transfer from car to bus once the scheme was implemented – needs to recognise travel behaviour change mechanisms. Mode choice and journey patterns are constantly evolving⁴⁹. Tracking the travel behaviour of individuals is therefore complex, and the different scales of impacts need to be assessed at the correct level. For example, it is ultimately meaningless to try to assess the impact of one small scheme on road congestion as a whole.
- 6.10 Instead, we intended to examine the trend in aggregate mode share:
- Road traffic counts to gauge the trend in journeys by private car.
 - Bus Electronic Ticket Machine (ETM) data to gauge both:
 - Trend in journeys by Park and Ride.
 - Trend in journeys by all bus.
 - Park and Ride car park occupancy counts to support the findings from the other data sources.
- 6.11 Since the comparison is between trend and not absolute journeys, the method does allow some useful, but careful, comparisons to be made between vehicle journeys (private car) and passenger journeys (bus). However certain factors will not be picked up by this method, and these must be assumed to remain constant – for example, average car occupancy.
- 6.12 The aims are corridor-specific, with a strong focus on Aberdeen. The corridor is best described as “Buchan to Aberdeen”. The bus network is relatively self-contained within the corridor, with very strong movements to/from Aberdeen. The road network also funnels traffic just south of Ellon, meaning that a single traffic count site is a valid measure of the corridor as a whole.
- 6.13 The outcomes from the scheme need to be set in the context of what would have happened: baseline data needs to be available.

⁴⁹ For example, see Chatterjee, K. (2001), “Asymmetric churn - academic jargon or a serious issue for transport planning?” <http://www.tps.org.uk/library/0001chatterjee.pdf> .

- 6.14 Unfortunately, there is no comparator site – one identical in all regards except for the implementation of the scheme. Sources of baseline data will therefore tend to simply compare trends in different sets of data, that all other things being equal, one would expect to be similar.
- 6.15 The simplest approach is to compare scheme trends to trends across Aberdeenshire. Different areas of Aberdeenshire will have had different measures implemented. The result is a comparison, not between the scheme and “do nothing”, but between the scheme and other types of measure that have been implemented.
- 6.16 When interpreting trend data it is important to be able to understand background factors. These factors may have greater influence on trends than the scheme itself, but may not be evenly reflected within the baseline data. For example, changes to:
- parking policy
 - road networks
 - bus fares or concessionary fares arrangements
 - bus networks or service levels.
- 6.17 Evaluation of an ongoing scheme is not only a case of showing outcomes. It needs to support further evolution of the scheme. This means it is useful to understand current usage in detail. For example:
- Who is travelling?
 - When are they travelling?
 - Where are their journeys to/from – and where do they live?
 - Why are they travelling – and why travel via a particular mode?
- 6.18 The data evaluation process has two strands:
- Analysis of monitoring data already collected – both to address mode shift and changes over time, and to establish current patterns of usage.
 - Collection of additional data via a user survey – primarily to establish current patterns of usage, but also to identify reasons for use of Park and Ride and areas for future improvement.
- 6.19 The method adopted for each of these strands is described in full by subsequent chapters.
- 6.20 This project does not include surveys with non-users. The SustAccess Project funded the Transport Problems and Solutions Project, employing a telephone survey to assess local perceptions, to investigate this area. However, the results of this survey were not available within the timescale for this work.

STAG Approach to Evaluation

- 6.21 The outcomes of the Ellon Park and Ride scheme have been evaluated using the STAG⁵⁰ (Scottish Transport Appraisal Guidance) framework. The Scottish Executive, one of the scheme's principal funders, produces this guidance.
- 6.22 STAG defines evaluation as "ex post appraisal" – past project performance is evaluated against the original objectives of the scheme. When evaluating a project, how effectively that project has met the established objectives must be identified.
- 6.23 An outcome evaluation looks at how well the scheme itself has performed, not specifically how it has been implemented. The evaluation should be carried out when sufficient time has elapsed for the project to deliver its principal outcome.
- 6.24 Evaluations are required to identify whether or not a project is performing as originally intended, whether established objectives are being achieved, and whether the implementation of the project continues to represent value for money.
- 6.25 An outcome evaluation should look at whether clear and measurable outcomes have been achieved from the project. Outcome evaluations are intended to answer questions such as "what is the extent of the identified outcomes and what were the costs of achieving this?" Comparisons can also be made with similar projects.
- 6.26 The main findings in a report evaluating a project should include the topics:
- Reasons for any failures in meeting objectives and the consequences of these failures.
 - A statement of the cost of the project.
 - A statement of those outputs and outcomes from the project which are assessed to be additional.
 - Analysis of performance measures indicated.
 - Interpretation using the criteria of economy, efficiency, effectiveness and equity.

⁵⁰ Scottish Executive, 2003, Scottish Transport Appraisal Guidance: Version 1.0

Monitoring Data Sources

6.27 The main aim of this section is to assess the quality and integrity of the data which is available, in order to ensure that the conclusions of this report are based on sources that reflect the actual situation. Inadequacies and missing data will also be identified. This section identifies:

- What data sources were requested and made available, and whether this data meets the requirements of the analysis.
- What problems exist with the data, including:
 - Systematic errors in collection method.
 - Periods of data missing or incomplete.
 - Periods where trends vary significantly from what would be expected, suggesting the data is inaccurate.

Data Sources

6.28 Data was provided by Aberdeenshire Council covering:

- Park and Ride car park occupancy – maximum number of cars per day, from opening to present.
- Park and Ride passenger usage – weekly totals supplied by Stagecoach, from opening to present.
- Patronage, revenue, and stage-to-stage flows on supported services operating from the Park and Ride site – current data only.
- Traffic count data from a range of survey sites in Aberdeenshire, from the 1990s to present.

6.29 Data was requested from service operator, Stagecoach Bluebird, covering:

- Bus patronage trends – both at the site, on the corridor, and a company-wide comparator.
- Current bus patronage profile – total patronage and revenue, variations by time of day, day of week, and ticket type, and stage-to-stage flows.

6.30 Unfortunately only one series of figures was received, covering annual patronage trends for the entire corridor, from 1998 to 2004.

6.31 Aberdeen City Council provided historic analysis of Aberdeen city centre parking charges, with current charges based on DHC observations.

Park and Ride Car Park Occupancy

6.32 Each day the site is staffed (Mondays to Saturdays, except Christmas and New Year holidays), the attendant records the maximum number

of vehicles parked at the site. The “maximum” is based on a count taken mid-morning. It is assumed that a similar count occurs in the afternoon, and the maximum defined as the higher of the two values. In practice it seems that most users will have arrived at the site by mid-morning. DHC observations suggest that the counts were highly accurate, and reflect the true number of vehicles parked.

- 6.33 Records have been kept from 11 November 2000 to the week commencing 4 July 2005. There is just one week missing (commencing 22 September 2001). Just over 73,000 parked cars have been recorded.
- 6.34 Data was also recorded on Sunday in the run-up to Christmas 2001, but for no other Sundays. Given the low usage (of the order of 10 vehicles parked each Sunday, 25% of weekdays during this period), Sunday data is not particularly significant, and this short series has therefore been ignored from the analysis.

Bus Patronage

- 6.35 Stagecoach Bluebird collects data via Electronic Ticket Machine (ETM) transactions. Although ETMs are primarily cash-registers, and not market research tools, they can often provide very large amounts of data on core variables such as:
- total patronage and revenue,
 - ticket type (often indicative of age and frequency of users),
 - time of day journeys are made, and
 - origins and destinations of bus journeys (although these may not be good indicators of where journeys actually start and finish).
- 6.36 Data may be inaccurate, particularly where no cash transaction occurs (such as when boarding with a pass or return ticket), because there is no *need* for drivers to register a transaction. Accuracy varies by company. The Stagecoach Bluebird drivers DHC observed recorded tickets more accurately than is commonly the case in many larger urban networks, and overall we believe the ETM data to be a broadly accurate reflection of actual travel – overall, within 10% of the true value.
- 6.37 The operator changed their ETM type in 2002, with the result that detailed data on usage was not held by the operator prior to this point. Only corridor-level totals by 4-week periods were stored for 2001 and before.
- 6.38 In practice, Stagecoach Bluebird was only able to provide one series of data: 4-week totals for the period September/October, for their services in the entire Buchan corridor, from 1998 to 2004. The Buchan corridor is defined as existing services 250, 260, 263, 267, 268 and X50. While there have been alterations to details of services within the

corridor, Stagecoach has remained the dominant operator throughout the period, so the totals will broadly reflect the totality of services in the area.

- 6.39 No comparator data was made available, notably a company-wide trend to allow trends on the corridor to be compared to those elsewhere on the network. Such a trend would have helped identify the extent to which factors such as the introduction of concessionary fares were responsible for increased patronage.
- 6.40 Stagecoach Bluebird supply weekly totals for “passengers using the Ellon Park and Ride service” to Aberdeenshire Council. We believe these figures count all journeys *from* Ellon Park and Ride (which is identified separately from Ellon town within the ETM data) on the commercial services that serve the site, but do not count journeys *to* the Park and Ride. Conventionally bus operators “double-count” return journeys – each passenger is counted each time they board a vehicle, so one return ticket is counted as “two passengers”. Given the nature of the Park and Ride service, it is reasonable to assume that all passengers boarding at the site will make a return journey.
- 6.41 Passenger numbers are available from opening to present, but a third of the data is missing in 2001 (individual week or month long periods), and 40% is missing in 2004 (an entire 22 week period March 2004 to the end of July 2004).
- 6.42 Patronage and revenue, by stage were provided for contracted services 493 (all three operators separately) and 747. Data was provided for an agreed 4-week period in September/October 2004. This period was considered by Aberdeenshire Council and Stagecoach Bluebird to be the most representative for a year.

Traffic

- 6.43 The Scottish Executive monitor and collect trunk road traffic using automated traffic counters. Data was available from 1992; however only after 2002 was the data split up into different types of vehicle.
- 6.44 The primary count site used was on the A90 at Balmedie. This location was used because it is south of Ellon but north of Bridge of Don. The vast majority of the traffic travelling from the catchment area of Ellon Park and Ride to Aberdeen will use this route.
- 6.45 Data was provided as a series of monthly average and totals, from July 1992 to July 2005. Hourly totals were also provided for October 2004, which was considered to be a typical month, representative of the entire year.
- 6.46 The Scottish Executive’s data proved to be inconsistent, perhaps due to unreliable automatic traffic counters: A different number of days were surveyed each month. Since traffic flows are not consistent day-

to-day, months with small survey samples are subject to considerable error. The number of days in the month where traffic is counted becomes more consistent in recent years.

- 6.47 Unfortunately, substantial periods of data are still missing. For example, in 1999 only 2 months were recorded, 3 months were recorded in 2000 and no traffic flow data was recorded on the Balmedie bypass in 2001. These missing periods of data make trend analysis difficult, since we cannot make the assumption that the months when data is available will be typical of the remainder of the year.
- 6.48 Data was also provided for the Inverurie by-pass. This location was used to provide some indication of traffic trends and patterns on a neighbouring corridor where no Park and Ride scheme had been implemented.

Survey Methodology

- 6.49 This chapter describes the design of the survey work conducted. It describes two surveys:
- Face-to-face passenger survey.
 - Boarding survey.

Face-to-Face Passenger Survey Approach

- 6.50 The face-to-face survey was intended to establish:
- A profile of the current user base – ages, origins, journey purpose, frequency of use.
 - The reasons for use of the Park and Ride site – including perceived strengths and weaknesses of the site/service.
 - Identify current user problems, concerns, or areas for future improvement.
- 6.51 A number of constraints were imposed on the survey design.
- 6.52 The survey had to be completed in a short space of time. This meant that postal-return surveying was not appropriate, since several weeks would need to be allowed for completed questionnaires to be returned.
- 6.53 The overall user base is low, with fewer than 200 users per day, and a likelihood that many of these users would be regular users. There might only be a few hundred individuals using the site in a given week. This placed greater emphasis on achieving a high rate of return of questionnaires.
- 6.54 Over 90% of the passengers travelling on services via the site are not Park and Ride users. The most effective means of targeting users was

therefore considered to be at the Park and Ride site, rather than on the bus.

- 6.55 The headway of the service (no better than 15 minutes), made it likely that people would be waiting at the site long enough to complete a simple questionnaire.
- 6.56 However, the longer the questionnaire, the greater the chance that the bus would arrive before completion. Consequently minimising the time taken to complete the questionnaire to no more than five minutes was a priority. On average, this would result in a ratio of about three completed questionnaires for every incomplete questionnaire.
- 6.57 Users returning to the site after making a journey tend not to wait for onward travel, so may be reluctant to participate in a survey. Consequently, any on-site survey needed to be targeted towards the morning (when users tend to leave), rather than the afternoon (when they tend to return).
- 6.58 While some users travel alone, some travel in pairs or small groups. The method should be sufficiently flexible to accommodate such groups.
- 6.59 It was intended to use bus operator Electronic Ticket Machine (ETM) data to identify basic demographic factors (usage by children, adults, and concession holders) and variation in time of day of use. In the absence of this data, no robust method was applied to sampling – we assumed the sample achieved was representative of all users.
- 6.60 While no precise data was available to pre-determine what time users arrived at to the site, observations, car park occupancy data, and analysis of parking charges suggested that:
- Usage was much greater in the peak than off-peak, with the majority of users arriving before 08:00.
 - Most journeys were round-trips to Aberdeen, where users spend most of the day away.
- 6.61 Consequently a methodology was developed that targeted surveyor time in the morning peak, when the majority of users would have spare time to complete the survey. Less time was dedicated to the off-peak, when fewer users were expected. No surveying was conducted in the afternoon or evening, when the vast majority of users were expected to be returning home. This approach sought to maximise both the amount of time the surveyor would be able to survey, and ensure the survey sample best reflected the perceived underlying pattern of usage.
- 6.62 Surveys were conducted between the following times:
- Monday 5 September 2005, 06:30-12:30.

- Tuesday 6 September 2005, 06:30-12:30.
- Wednesday 7 September 2005, 06:30-10:30.
- Thursday 8 September 2005, 06:30-10:30.

Face-to-Face Passenger Survey Questionnaire Design

- 6.63 Questions were addressed to groups travelling together collectively. Most answers will apply to everyone in the group.
- 6.64 The survey excluded children and operating staff.
- 6.65 Basic demographic indicators were included in the survey. These can be compared to census data. Age is also a key determinant of fare level – particularly relevant for pensioners.
- Age, for each person in the group – use census-comparable age brackets (16-29, 30-44, 45-59, 60 or over). May be estimated at the end of the interview, not asked.
 - Sex, for each person in the group. May be noted at the end of the interview, not asked.
 - Full home postcode (or address if postcode unknown).
- 6.66 Information about the current journey was included:
- Number of individuals travelling together in the group. May be noted at the end of the interview, not asked.
 - Time and date of interview. May be noted at the end of the interview, not asked.
 - Origin, if not home, which is already known.
 - Destination – in broad terms, such as “Aberdeen City centre”.
 - Purpose – use broad categories that can be compared to the Scottish Household Survey (commuting, shopping, etc).
 - Frequency journey is made – how frequently the user goes from this origin to this destination, by any means.
 - How users arrived at the Park and Ride site (mode).
- 6.67 Alternatives to Ellon Park and Ride:
- Why users first used Ellon Park and Ride.
 - If Ellon Park and Ride is always used for the current journey, ask what other modes could be used, with open-ended reasons for not using these alternatives.
 - If alternatives are used, what, how frequently, and why.
- 6.68 Mode options include “other Park and Ride”. Reasons given will be grouped at analysis stage.

- 6.69 Strengths and weaknesses – users were invited to state the “best” and “worst” aspect of:
- Park and Ride site (car park, waiting facilities, information)
 - Bus service and journey.
- 6.70 The strength/weakness questions do not cover all possible aspects of the service – for example, facilities at the destination or promotion. These aspects may arise in the question covering improvements (below), if they are sufficiently problematic. An alternative methodology – evaluating a complete range of scheme components – was discounted because the survey would have become too long.
- 6.71 Improvements for Ellon Park and Ride were gauged using a single open question, “what one thing would you improve”.
- 6.72 The survey form used is appended to this document.

Boarding Survey

- 6.73 It was originally intended that bus operator ETM data would be used to determine variations in what time of day Park and Ride was used. The face-to-face survey will not reflect this variation, since the surveyor might sample one person every 10 minutes, regardless of whether there have been 20 people or one person available to survey. While there are many biases that the face-to-face survey may induce, time of day is the one where the sample is most likely to not reflect the true situation.
- 6.74 There were insufficient resources available to conduct a comprehensive survey. Instead a simple survey was conducted, aimed at establishing the approximate balance of peak to off-peak usage.
- 6.75 One surveyor recorded the time at which passengers boarded the bus at the Park and Ride site. The surveyor recorded the broad age band (child, adult, pensioner) and sex of each person boarding. The survey was conducted from the first bus at just after 06:30, to 12:30 on one day (Wednesday 7 September 2005).
- 6.76 Analysis of car park occupancy data suggested that while variation in usage may occur between days, this was rarely more than 10% from average. We can be reasonably confident that the results from one day are broadly representative of overall weekday patterns.

7.0 Analysis

7.1 This chapter analyses:

- Monitoring data
- Boarding and user surveys.

Analysis of Monitoring Data

7.2 This section uses analysis of available data to determine:

- How “usage” has changed over time (both for Park and Ride and for the corridor as a whole)
- How current usage varies (for example, by day of week).

7.3 Analysis is grouped into:

- Park and ride car park occupancy
- Bus patronage
- Traffic
- City centre parking changes.

Park and Ride Car Park Occupancy

7.4 Car park occupancy gives an indication of usage and the number of car journeys that would otherwise be made through to Aberdeen. It is only indicative of these because:

- Car occupancy itself may vary (from one person to five or more).
- Not all users park their cars at the site (some are dropped at the site).
- Some car users might otherwise have used bus anyway, or might have changed their journey-making behaviour.

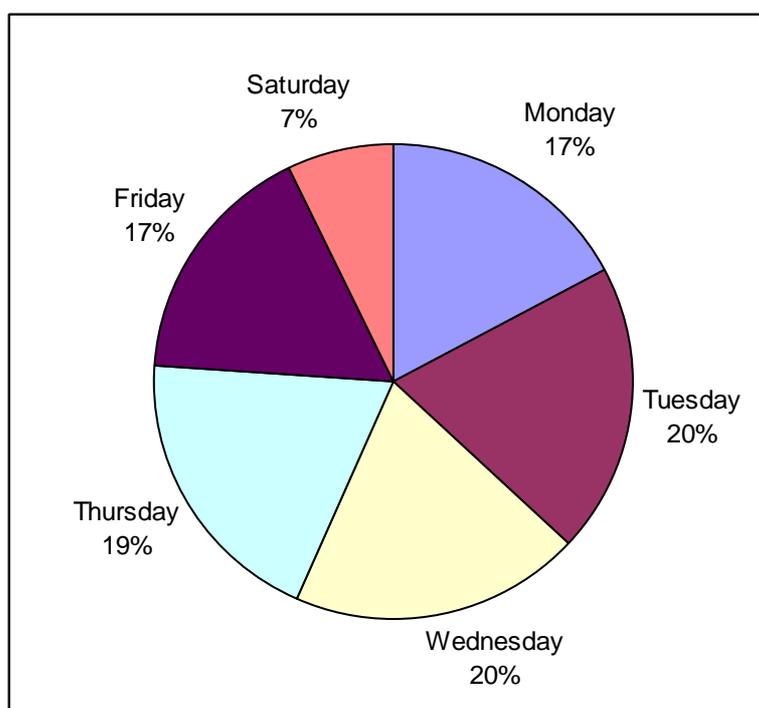
7.5 Car park occupancy data is particularly useful because it provides an almost unbroken trend from opening to the present, and contains variations by day of the week. It is also a very reliable data source.

7.6 Table 4 summarises the occupancy data, by year and day of week. The averages presented exclude dates when no data was available (primarily holidays). Note that 2000 and 2005 are incomplete years, and may be skewed by the omission of certain months. 2000's Saturday data is skewed by the inclusion of the opening day, which was a Saturday.

Table 4: Average Daily Car Park Occupancy

Year	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2000 ⁵¹	15	20	19	21	22	20
2001	20	24	22	22	20	11
2002	39	46	45	45	39	17
2003	59	67	69	69	61	25
2004	75	88	86	84	70	29
2005 ⁵²	89	101	100	100	87	33
All	52	61	60	59	51	22

Figure 13: Car Park Occupancy by Day of Week



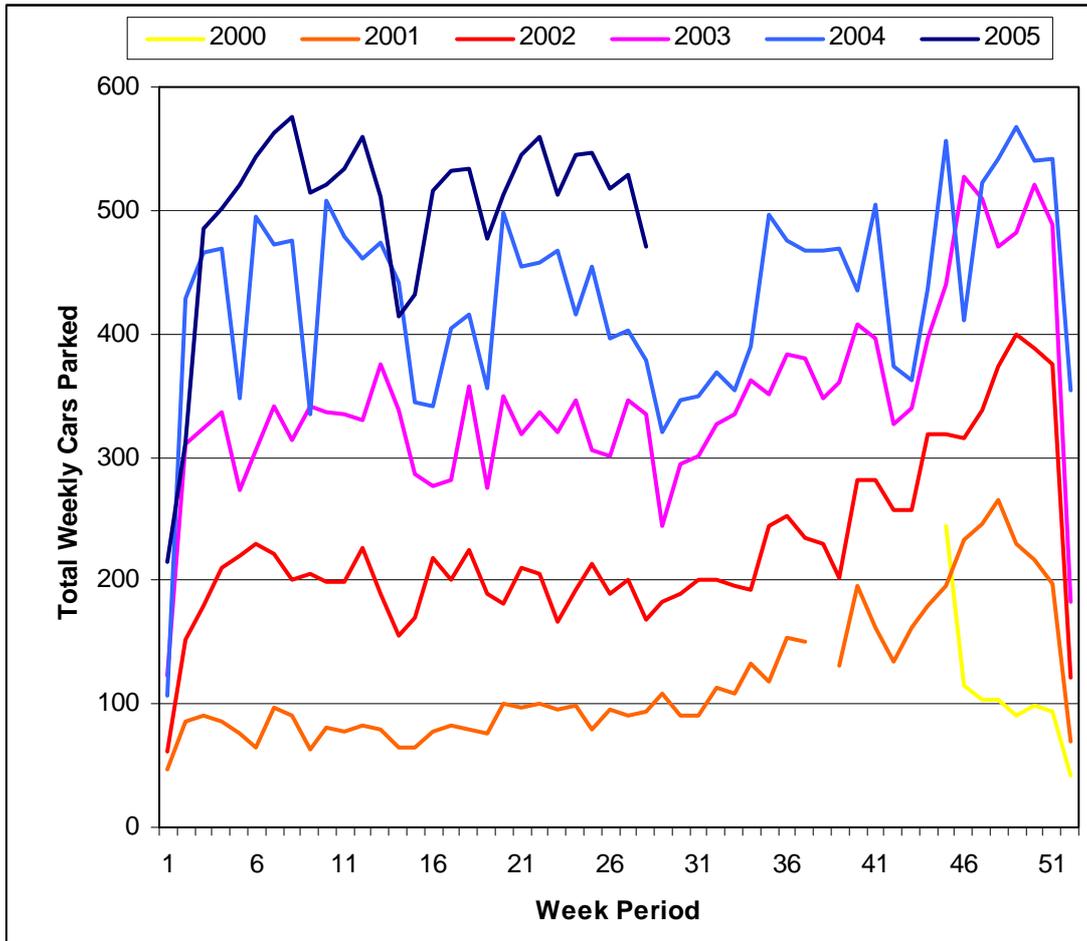
7.7 Figure 13 (above) shows the distribution of all cars using the site by day of week. For example, 17% of weekly usage is on Monday. The pattern is strongly biased towards the centre of the week, with Tuesday, Wednesday and Thursday having higher occupancy than Monday and Friday. Saturday is half to a third as busy as weekdays.

⁵¹ From 11 November only.

⁵² To 4 July only.

This pattern suggests strong usage for commuting trips (instead of leisure). The reductions on Monday and Friday may be explained by “the long weekend” (holidays either side of the weekend), or possibly half-days. Half-days would tend to make city-centre parking more financially attractive, and may explain a reduction in park and ride usage.

Figure 14: Car Park Occupancy by Week Period and Year

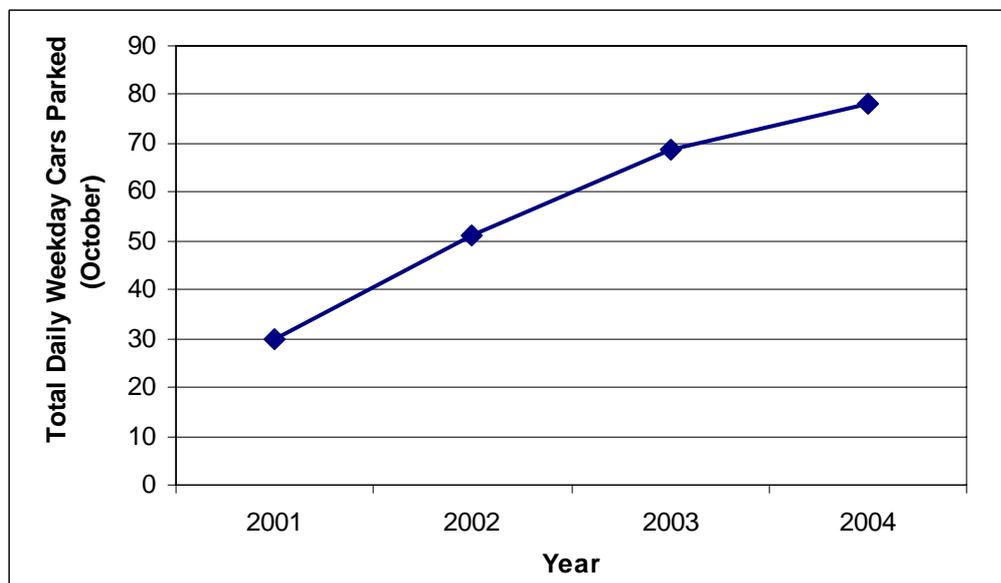


7.8 Figure 14 (above) shows how Park and Ride car park occupancy varies across the year. Each year the site has been open is shown as a separate line, with weekly periods shown on the x-axis. Period 1 is the week containing the New Year holidays.

- 7.9 A number of trends are apparent from the graph:
- Occupancy in each year is greater than the previous year, although the rate of growth appears to have started to slow (the lines are becoming closer together over time).
 - There is significant variation between individual weeks (typically +/- 10%).
 - Occupancy rises from August to Christmas, with the first half of the year being relatively stable.

- The decline over the summer months (period 30) has only started to occur in recent years – it is not apparent in 2001 and 2002.
- 7.10 The increase in the run up to Christmas reflects a number of factors including additional marketing of the service, and greater (real or perceived) “congestion” due to increased shopper activity. Note that this does not necessarily imply greater use of park and ride by shoppers: Commuters may simply be using Park and Ride to avoid traffic problems created by shoppers. Seasonal shoppers may not be the only explanation. Growth also appears to occur when the amount of daylight is in decline. This might be related to worsening driving conditions in poor light, or a more subtle psychological factor.
- 7.11 Why is growth prior to Christmas maintained in the following year? It is possible that new users (commuters) are attracted to the service when they perceive a need to “try something different”, and discover that the service is “better” than their previous arrangements for all times of year.
- 7.12 Saturdays follow a similar pattern to all other days, except that the rate of growth is slower. For example, between 2001 and 2004 (inclusive), car park occupancy grew by 265% overall, but only 180% on Saturdays.

Figure 15: Annual Trend in Car Park Occupancy



- 7.13 Figure 15 (above) shows the trend in average daily weekday total from 2001 to 2004, using data for October only. October is considered to be the most typical of months, and has been used elsewhere in this analysis as a proxy for a whole year. As noted above, the rate of increase is gradually decreasing.

Bus Patronage

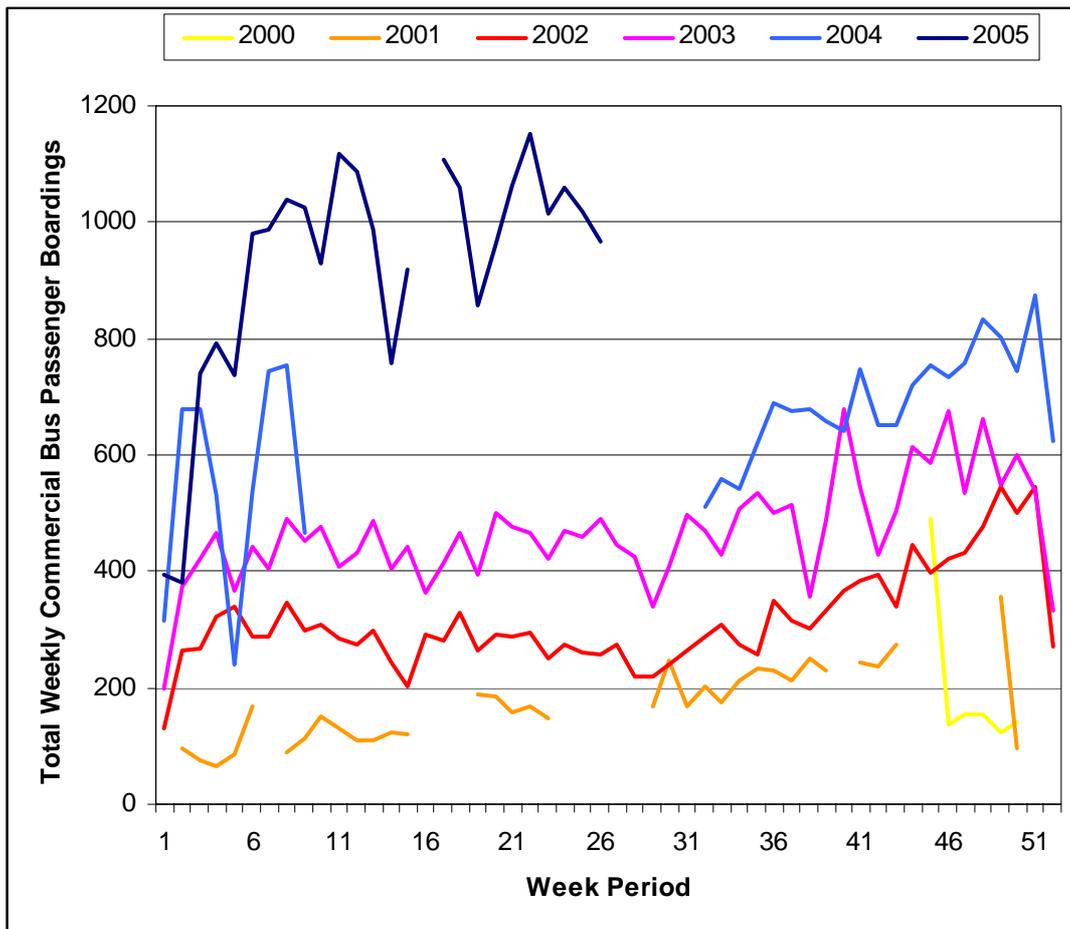
- 7.14 Passenger monitoring indicates both the actual number of people travelling on services to and from the Park and Ride, and the impact of the Park and Ride on the local bus market. It potentially could give a far greater understanding of who uses the Park and Ride, when and how; but sufficient data has not been made available to allow this.
- 7.15 Table 5 summarises data for passenger boardings at the site on commercial services.

Table 5: Commercial Bus Boardings

Year	Weeks of data recorded	Average boardings per week
2000	6	199
2001	37	179
2002	52	315
2003	52	468
2004	30	647
2005	25	925
All	202	451

- 7.16 A complete series of data is only available for two years (2002 and 2003). 2000 data is skewed by exceptionally high usage in the first week - 489 passengers.

Figure 16: Commercial Bus Boardings by Week Period and Year

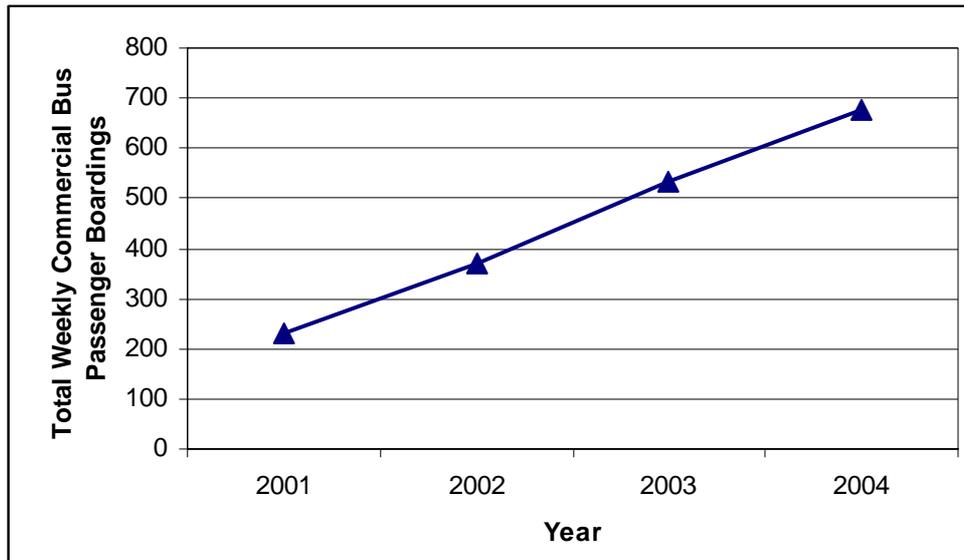


7.17 Figure 16 (above) shows how patronage (passenger boardings on commercial bus services at the Park and Ride site) varies across the year. Each year the site has been open is shown as a separate line, with weekly periods shown on the x-axis. Period 1 is the week containing the New Year holidays.

7.18 Trends are very similar to those seen for car park occupancy, as we might expect: Patronage grows year on year, with that growth primarily occurring at the end of the year. The most significant difference is that the rate of growth in patronage does not appear to have reduced in recent years (the annual lines are not getting closer together over time).

7.19 By taking the same 4-week period in September/October as being representative of each year, we can compare trends year on year. Figure 17 (below) shows this. There is no evidence that growth in patronage is slowing.

Figure 17: Trend in Commercial Bus Boardings



7.20 Based on the year to July, growth in 2005 is likely to grow faster than in previous years.

7.21 A number of factors may explain the variation between car park occupancy and patronage trends, including:

- Greater use of Park and Ride as a “drop-off” point or interchange.
- A change in the accuracy of method of recording data (for example, the introduction of free concessionary travel lead many operators to place far greater emphasis on accurate data recording).
- A change in the average occupancy rate of cars being parked.

Table 6: Commercial Bus Patronage Trends – Park and Ride Compared to Corridor

Year	Weekly Park and Ride Journeys	Weekly Non-Park and Ride Journeys	Weekly Total Journeys	Percentage Park and Ride
1998	0	23,000	23,000	0%
1999	0	21,250	21,250	0%
2000	0	19,850	19,850	0%
2001	460	19,590	20,050	2%
2002	740	19,320	20,060	4%
2003	1,070	19,370	20,440	6%
2004	1,350	19,250	20,600	7%

7.22 Table 6 (above) compares Park and Ride patronage to patronage on all Stagecoach bus services operating in the Buchan-Aberdeen corridor (defined in 6.38). Values are for an average week, based on the same 4-week period in September/October. Park and Ride passenger counts have been multiplied by two, to reflect return travel. This makes them comparable to the corridor-wide figures.

- 7.23 It appears that bus patronage on the corridor was in sharp decline prior to 2000, but has since stabilised and started to recover slightly. Park and Ride patronage has grown to represent 7% of total patronage.
- 7.24 It may appear that all the growth in overall patronage since 2001 is due to the Park and Ride, since the non-Park and Ride totals are effectively static. However the introduction of the Park and Ride would have made minimal impact on the trend prior to 2001 – a loss of 5-10% per year. So other factors have had a far more significant impact in eliminating decline than the introduction of Park and Ride. Major changes around 2000/2001 include:
- Introduction of free concessionary fares (primarily to pensioners)
 - Network redesign
 - Introduction of new vehicles.
- 7.25 No reliable data is held on revenue for these commercial bus services. However, since Park and Ride fares are generally lower than those from settlements further along the corridor, and there are no significant passenger generating settlements south of Ellon, Park and Ride traffic is likely to be worth considerably less than 7% of total revenue.
- 7.26 Based on the sample 4-week period in September/October 2004, an average of 22 passenger boardings per week occurred at Ellon Park and Ride on service 493 (to Inverurie), with 21 passengers per week on service 747 (to Dyce). The majority of those using service 493 travel to Inverurie. Approximately a quarter of those using service 747 travel to Dyce Industrial Estate, a quarter to Aberdeen Airport, and a half to Dyce itself. Of course the absolute numbers involved are less than one person per bus departure, so care should be taken not to read too much into these values.
- 7.27 Overall, 94% of all passenger boardings at the Park and Ride site are on the core commercial service (most bound for Aberdeen), with just 3% travelling to Inverurie and 3% to Dyce.
- 7.28 Stagecoach Bluebird carries 17 million passengers a year⁵³, just over 325,000 per week. The Buchan corridor therefore accounts for only 6% of Bluebird's market, with Ellon Park and Ride itself accounting for less than half of one percent.

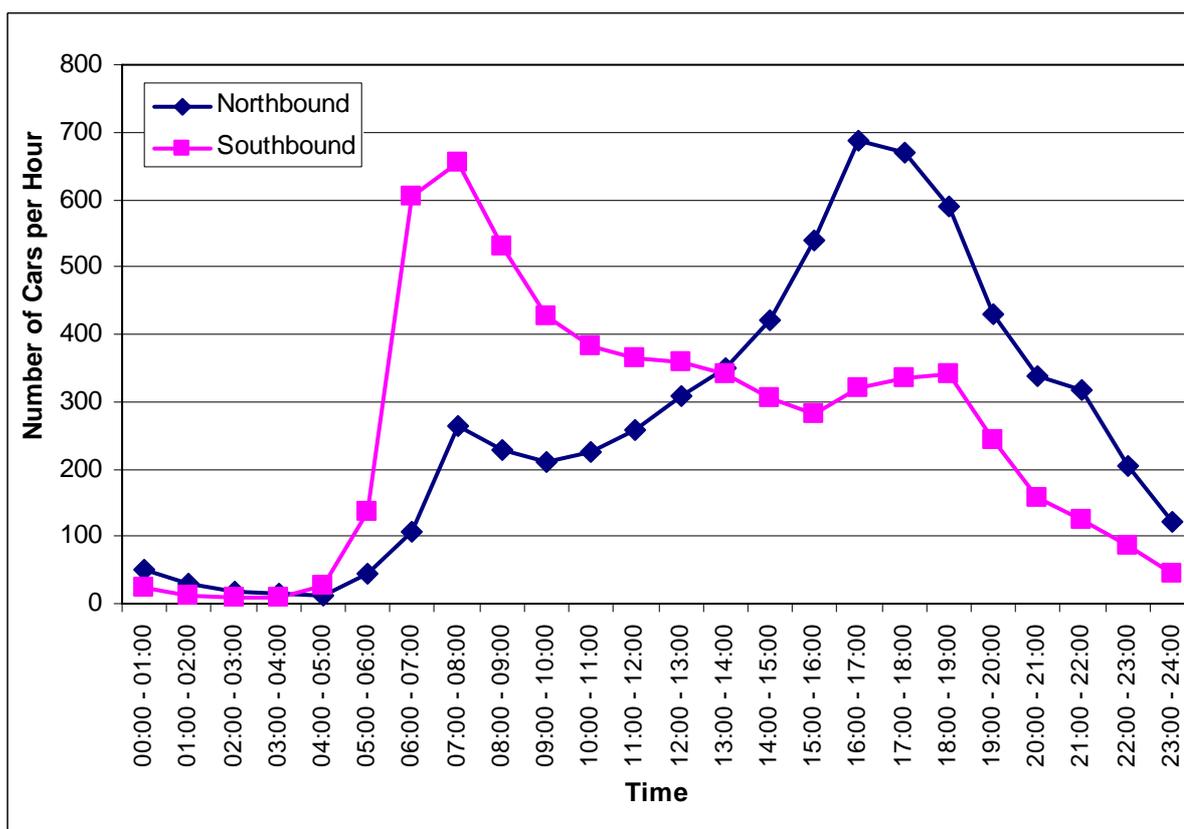
Traffic

- 7.29 Traffic data provides both a way to estimate current flows and patterns, and analyse trends in car usage over time.

⁵³ Company website, <http://www.stagecoachbus.com/bluebird/aboutus.html> .

- 7.30 The primary site used is on the A90 Balmedie Bypass (ATC02023). This location is between Ellon and Aberdeen. The nature of the road network means that almost all traffic from Ellon and Buchan to Aberdeen will pass this site. Ellon Park and Ride is primarily aimed at traffic along this corridor.
- 7.31 A secondary site on the Inverurie Bypass (ATC02032) has been used to provide comparative trend data. This site is a similar distance from Aberdeen, and like the A90, is a key route from rural Aberdeenshire to Aberdeen. The Inverurie corridor has no bus-based Park and Ride site, although the corridor is served by rail (and has been throughout recent times).
- 7.32 October 2004 data for the Balmedie Bypass has been analysed in detail to establish current car traffic patterns and volumes. October is the most typical month of the year. All data analysed is for an average weekday, based on 22 individual weekdays. Car flows have been separated from other types of traffic, such as lorries and buses. The aim is to separate out private motorists, who are the target market for Park and Ride. Cars account for approximately 85% of overall traffic.
- 7.33 An average of 6,400 cars travel northbound each weekday, 6,100 southbound. The 5% difference between directions is not particularly significant, and could be caused by a range of factors, including slight inaccuracies in automatic data counters.
- 7.34 Figure 18 below shows how car traffic varies by time of day.
- 7.35 Although there is some counter-flow peak commuting, the vast majority is towards Aberdeen (southbound) in the morning, and back in the evening. The morning peak is quite early, at just after 07:00. This only partly reflects the location of the site, over ten miles north of Aberdeen.
- 7.36 Overall average flows are well below 1,000 cars per hour at peak, suggesting the road is within capacity, even on single-carriageway sections. There may still be certain days or short periods within the peaks when traffic becomes congested, which are disguised by averaging. However, in the absence of more detailed data, little more can be said about congestion on this section of the A90.

Figure 18: Average Weekday Car Flows, Balmedie, October 2004



7.37 Table 7 below summarises the number of months in each year when traffic count data was available.

Table 7: Months of Traffic Counter Data Available by Year

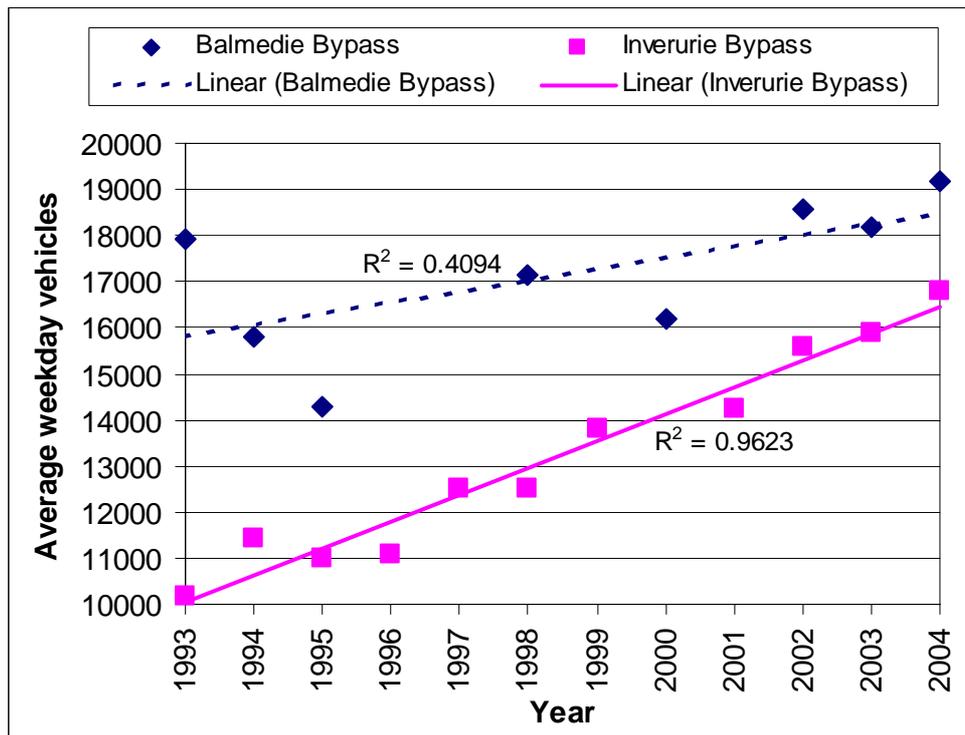
Year	Balmedie Bypass	Inverurie Bypass
1992	3	1
1993	11	10
1994	12	11
1995	12	12
1996	4	8
1997	0	10
1998	8	8
1999	2	7
2000	3	10
2001	0	6
2002	2	12
2003	5	12
2004	12	12
2005	4	5

7.38 Data is particularly sparse for the Balmedie Bypass. In addition, not all the data available is reliable. There are particularly problems with data from the Inverurie Bypass during 2000 with values for certain months less than 20% of an average month. While traffic volumes do alter slightly due to seasonal factors, such dramatic changes in volume indicate critical problems with the data.

7.39 Analysis has therefore been restricted to one month each year – September. This month is the most commonly available across the two sites. Only one value (30% of the average on the Inverurie Bypass in 2000) is clearly inaccurate, and this has been excluded. September is broadly typical of the rest of the year. Trend analysis has been conducted using data for all vehicles (since car-only data is not available before 2002), based on weekday average two-way flows.

7.40 Figure 19 below summarises the trends within the data at each site.

Figure 19: Average Weekday Two-Way Flows – Balmedie and Inverurie



7.41 The graph shows average weekday flows at each site, year by year. Linear trend lines have been added. The r-squared for each line is shown. R-squared is a measure of how well the line fits the points, where an r-squared of one is a perfect fit.

7.42 Traffic on the Inverurie Bypass shows relatively steady growth. The picture at Balmedie is far more confused, with much greater variation between years. The best-fit line therefore has a poor r-square (just 0.4), making it difficult to draw conclusions from the data. However, it seems likely that the rate of growth of traffic has been slower at Balmedie than Inverurie.

7.43 Even fewer conclusions can be drawn as to the impact of Ellon Park and Ride on this. For example, there is no evidence that the opening of the site caused the rate of traffic growth to change.

7.44 Of course the absolute numbers using Park and Ride are tiny in comparison to overall traffic flows. In 2004, an average of just over 80

vehicles parked at the site each weekday. Including arrivals at the site by other modes, and discounting journeys to other destinations, approximately 100 return vehicle journeys might be added to traffic flows if the site were to (hypothetically) cease operation. This equates to just 1% of overall traffic flow at the Balmedie Bypass. It is not a surprise that few conclusions can be drawn from the data.

7.45 While 1% of overall traffic flow sounds insignificant, it is not entirely. Use of Ellon Park and Ride is heavily peaked – two thirds of use occurs in the busiest two hours of the morning peak (based on boarding surveys). This means that in the busiest two hours of the peak, Ellon Park and Ride is dealing with the equivalent of 5% of total with-flow traffic on the Balmedie Bypass.

City Centre Parking Charges and Alternative Modes

7.46 City centre parking charges are an important factor in individuals’ decisions to use Park and Ride. This section analyses current charging structures and trend, and examines the relative cost of using Park and Ride, both at Ellon and at Bridge of Don.

7.47 Charges at three sample car parks in Aberdeen City Centre were reviewed:

- Shiprow (multi-storey run by National Car Parks)
- Union Row (open site on derelict land, run by Aberdeen Car Parks)
- Harriet Street (multi-storey, part of a major shopping centre).

7.48 Harriet Street and Shiprow are two of the largest car parks in the city centre.

Table 8: Current Car Park Charges

Time Period	Shiprow	Union Row	Harriet Street
Up to 1 hour	£0.40 per 15 minutes	£1.40	£2.20
Up to 2 hours		£2.60	
Up to 3 hours		£3.80	
Up to 4 hours		£5.00	
Up to 5 hours	£7.00 (maximum charge)	£6.50	£5.40
Up to 6 hours			£7.50
Up to 7 hours			£8.00
Up to 8 hours			£12.00
Up to 12 hours			£16.00
Up to 24 hours			£18.00

Source: On-site observations, July 2005.

7.49 Some car parks, including Shiprow offer season tickets. A 4-week ticket at Shiprow costs £63.74. If used for 20 days (for a regular commuter journey), the average cost is £3.20 per day used.

7.50 Harriet Street is particularly focused on medium-stay shopping parking, with exceptionally high rates for long-stay. Shiprow and Union

- Row car parks impose a cap of £7.00 and £6.50 respective. This is the charge likely to be paid by long-stay commuters, who will tend to work at least 6 hours a day.
- 7.51 On-street parking is almost entirely restricted to short stay (typically no more than 3 hours). Charges broadly mirror the levels for car parks shown above.
- 7.52 Aberdeen City Council undertook a review in January 1999, which provides a useful source of data prior to the opening of Ellon Park and Ride. The pricing structure at Shiprow has changed, with the result that short-stay parking is largely unchanged in price, while long-stay parking has become around 20% more expensive. Charges at Union Row and Harriet Street have increased by about 50% across all time periods. The overall trend therefore seems to be towards real terms increases in city centre parking charges. Such a significant increase will inevitably have encouraged greater use of alternatives, including Park and Ride.
- 7.53 Fuel is the most obvious variable cost associated with driving. It is commonly the only cost motorists consider, although even that assumption is dangerous, since many motorists only consider the cost when paying it, which is often not when they make the journey.
- 7.54 DfT (Department for Transport) state⁵⁴ that in 2002, the average fuel consumption of cars in the United Kingdom was 32 miles per gallon. The AA (Automobile Association) quotes⁵⁵ United Kingdom average prices for unleaded petrol of £0.86 per litre and diesel of £0.90 per litre. We assume an aggregate price of £0.88 per litre or £3.30 a gallon. DfT monitoring⁵⁶ suggests that fuel prices rose at the end of the 1990s, declined slightly to 2002, and have since started to rise again.
- 7.55 Bridge of Don to the city centre and return is approximately 4 miles – the distance from Kingswells is slightly longer. The use of Bridge of Don Park and Ride therefore saves the user an average of £0.40 in fuel. In contrast Ellon to the city centre and return is approximately 32 miles. The use of Park and Ride saves an average of £3.30 in fuel.

⁵⁴ See:

http://www.dft.gov.uk/stellent/groups/dft_control/documents/contentservertemplate/dft_index.hcst?n=11779&l=3

⁵⁵ AA, (2005), "Fuel Price Report, June 2005". It should be noted that within a few months of this analysis, prices had risen by around 10%.

⁵⁶ See:

http://www.dft.gov.uk/stellent/groups/dft_control/documents/contentservertemplate/dft_index.hcst?n=11776&l=3

- 7.56 Until September 2005, Bridge of Don and Kingswells Park and Ride sites charge £2.30 per day per vehicle. A vehicle may contain up to 5 people. The charge includes travel into the city centre. These Park and Ride sites are therefore competitively priced for shopper-journeys, and significantly cheaper for commuter journeys.
- 7.57 First have recently (September 2005) altered the charging structure to make a charge per adult. Up to two children may travel with each adult free. Parking is free. The fare is £1.80 return, which undercuts First's own fares on neighbouring services: £2.70 peak or £2.40 off-peak (day tickets are cheaper than two single tickets for journeys from the outer-suburbs of Aberdeen). Experience elsewhere (not least on First's own network in York), suggests that over time such fare structures will attract existing local bus users to the Park and Ride, causing them to make additional suburban car journeys where previously they would take the bus direct to their destination.
- 7.58 Ellon (at £3.25 day return per person) is competitive for individuals, but depends in part on how users perceive the cost of driving from Ellon to Aberdeen. For concession pass holders (who travel free on buses), Ellon is always a very attractive alternative, since it is essentially free.
- 7.59 Ellon Park and Ride is considerably cheaper than city centre parking for infrequent individual commuter journeys – approximately half the cost of parking alone. The situation is less clear-cut for regular commuters, because car parks offer greater reductions to frequent users – a £15 Commutercard used 5 days a week costs £3.00 per day. This compares to an NCP season ticket at the equivalent of £3.20 per day. Again, Ellon remains significantly cheaper if the user considers fuel costs.
- 7.60 Ellon will tend to be unattractive for two or more people travelling together, particularly for shopper journeys. The £6.50 fare (either two return fares or an off-peak group ticket) is on a par with long-stay car parking charges in Aberdeen City, and somewhat higher than short to medium-stay parking.

Summary

- 7.61 There are significant limitations in the available data for bus patronage (due to the operator not making as much data available as was hoped at the outset of the study) or road traffic (due to a combination of inaccurate/missing data and the relatively low level of usage of Ellon Park and Ride). Despite this, a useful picture can be built up of patterns and trends.
- 7.62 Ellon Park and Ride car park occupancy is two to three times higher on a weekday than a Saturday.

- 7.63 Usage of Ellon Park and Ride has grown year-on-year since opening. This growth has occurred between August and Christmas, with the first half of the year being relatively stable.
- 7.64 The rate of increase of car park occupancy is starting to flatten, however usage of the bus continues to grow linearly.
- 7.65 94% of all passenger boardings at the site were onto commercial services, mostly to Aberdeen. 6% were onto supported services, to Dyce and Inverurie.
- 7.66 Ellon Park and Ride appears to have contributed to stabilisation and slight growth in the bus market along the corridor. However a range of other factors, such as concessionary fares, network redesigns and wider policy changes, will have also influenced this trend.
- 7.67 Ellon Park and Ride is dealing with the equivalent of 5% of total traffic flow on the Balmedie Bypass during the two busiest hours of the peak. The scheme has had no discernable impact on overall traffic flows.
- 7.68 The cost of parking in Aberdeen city centre has tended to increase (in real terms) since 1999. Longer-stay parking (for a full working day) typically costs £7 per day, however regular commuters may effectively halve this through the use of season tickets. This reduction means the cost of parking in the city centre is similar to the cost of using Ellon Park and Ride.
- 7.69 The cost of using Ellon Park and Ride is very similar to the fuel cost for a single driver making the same journey.
- 7.70 Overall the cost structure should be attractive to individual commuters, but will be less competitive for groups, short-stay visitors, or those with free parking at their destination.

Analysis of Surveys

- 7.71 This section analyses the results of the user and boarding surveys.

Boarding Survey

- 7.72 A count of passengers boarding buses at Ellon Park and Ride was conducted on Wednesday 7 September 2005, as described in 6.73.
- 7.73 57 local buses were recorded as leaving the site between 06:30 and 12:30. All boardings were onto services for Aberdeen, except for two male adults boarding the 06:57 to Dyce. No boardings were observed onto services heading north to Peterhead or Fraserburgh, or to other less frequently served destinations.
- 7.74 In addition, four adult males car-shared at 06:45, and two Robert Gordon's College pupils boarded a private school bus at about 07:20. Although not formally recorded, it was noted that the site was used a

few times during the morning as a service station: People arrived simply to use the toilets before driving off again.

7.75 The largest single number of people recorded boarding any one bus was 20 (both at 07:08 and 08:03). However, at several points during the morning peak, the number of people attempting to board buses exceeded the number of free seats available. This led to:

- Passengers queuing at the bus shelter, rather than waiting inside the building, in order to ensure a seat on the bus when it arrived.
- Stagecoach operating double-decked buses (perceived by many users as lower quality than the coach vehicles used for the majority of services) on certain journeys to provide sufficient capacity for those passengers unable to board earlier buses.

7.76 Table 9 summarises passenger boardings onto Aberdeen services, by hour, age and sex.

Table 9: Boardings onto Aberdeen Services

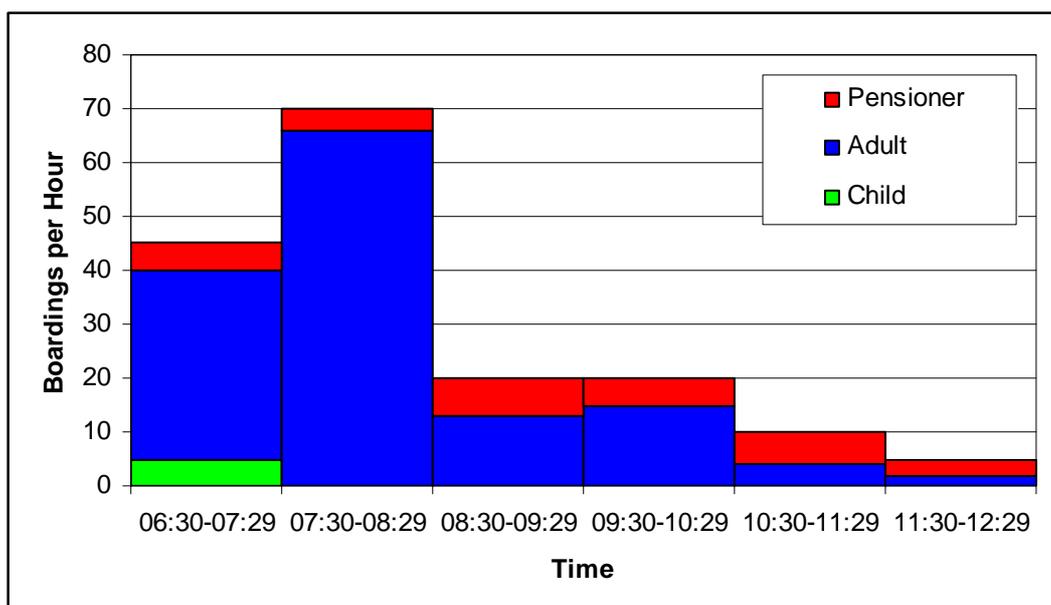
Time	Age			Sex		Total
	Child	Adult	Pensioner	Male	Female	
06:30-07:29	5	35	5	19	26	45
07:30-08:29	0	66	4	17	53	70
08:30-09:29	0	13	7	5	15	20
09:30-10:29	0	15	5	8	12	20
10:30-11:29	0	4	6	1	9	10
11:30-12:29	0	2	3	3	2	5
Total	5	135	30	53	117	170

Values are for one day, Wednesday 7 September 2005.

7.77 The total headcount correlates well with Stagecoach’s boarding data. In the first half of 2005, there were an average of 925 boardings per week at the site onto commercial services (see 7.15). Assuming a 6-day week, this predicts just fewer than 155 boardings per day. We may be observing slightly more due to the likely upward trend in patronage since the start of 2005, due to this being a busier week than average, or due to systematic under-recording by drivers. Overall, the magnitude of the operator data and the boarding survey results is the same, broadly validating the operator data.

7.78 79% of passengers were adults, 18% pensioners, and 3% children. Figure 20 below shows how boarding rates vary by time and age band.

Figure 20: Boarding Rates onto Aberdeen Services by Time and Age



7.79 Significant peaking is apparent, with two thirds of all passengers boarding in the first two hours. After 08:00 boardings start to tail off. By 10:00 passenger boardings become erratic, with between zero and three people boarding most services during the late morning. Although not surveyed, it is reasonable to assume that almost no boardings occur during the afternoon.

7.80 The adult peak just before 08:00 is an hour earlier than the pensioner peak. Pensioners represent as much as 50% of post-morning peak boardings. Child boardings are low and peaked, reflecting the term-time nature of the survey, and the fact that only private school children are likely to be travelling all the way to Aberdeen to attend school.

7.81 69% of boardings were by females, 31% by males. This balance is reasonably consistent throughout the day. The extent to which this reflects an income bias between genders, or merely reflects the work and travel patterns within the area, is not clear.

User Survey

7.82 Table 10 below summarises the number of interviews conducted and completed, the number of refusals, and the total number of approaches made to potential interviewees on each day.

Table 10: Interviews and Approaches by Date

Day	Interviews Conducted	Interviews Completed	Refusals	Total Approaches
Monday 5 September 2005	30	27	4	34
Tuesday 6 September 2005	35	30	4	39
Wednesday 7 September 2005	41	35	4	45
Thursday 8 September 2005	33	28	2	35

Day	Interviews Conducted	Interviews Completed	Refusals	Total Approaches
Total	139	120	14	153

- 7.83 A total of 139 interviews were conducted, of which 120 were completed. The 19 incomplete interviews can still contribute to the analysis; there will merely be certain questions where a small sample of responses is available. The balance of interviews between days broadly reflects overall patterns of usage (see 7.4), with Monday being a quieter day than Tuesday to Thursday.
- 7.84 A total of 14 refusals were recorded. Few specific reasons were given for refusal. Of note are two cases where interviewees refused because it was the first time they had used the service (and therefore presumed they didn't know enough about it to contribute to a survey).
- 7.85 "Offshore Europe", an oil and gas exhibition was being held in Aberdeen between Tuesday and Thursday. This is likely to have increased the numbers using the service during the survey period, although there is no evidence that it skewed the purpose of journeys. It is also likely to have attracted infrequent users – often a difficult group to survey.
- 7.86 Table 11 below shows the distribution of interviews by time of day. A second column has been included, which totals the actual number of users represented by the interviews – some interviewees will be speaking on behalf of a group of two or more people. The final column shows the distribution of boarding activity observed onto Aberdeen-bound services, as described in 7.76.

Table 11: Interviews by Time of Day

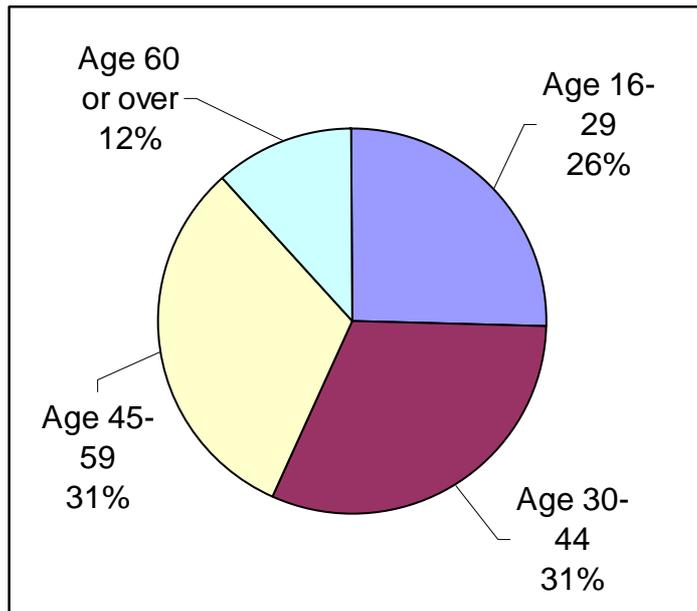
Time	Interviews	Users	Percentage of Users	Boarding Activity
06:30 to 07:29	36	39	25%	26%
07:30 to 08:29	56	62	39%	41%
08:30 to 09:29	22	24	15%	12%
09:30 to 10:29	20	27	17%	12%
10:30 to 11:29	2	2	1%	6%
11:30 to 12:29	3	3	2%	3%
Total	139	157	100%	100%

- 7.87 The distribution of interviews is very similar to the distribution of boarding activity. Off-peak the survey data is skewed by the method adopted, with fewer interviews in the late morning, and more mid-morning. Overall, the interview data is representative of time variations in boarding activity.
- 7.88 It was originally intended to break down analysis by peak and off-peak users, however the low off-peak usage meant that the overall sample size was too small (just 25 interviewees after 09:30) to provide meaningful differentiation between peak and off-peak users.

Who is Using Ellon Park and Ride?

- 7.89 Group size is heavily skewed towards individuals travelling alone. 88% of interviewees were travelling alone. 12% were travelling in a group of two, and just one interviewee was travelling in a group of three. No larger groups were identified.
- 7.90 Almost three quarters (73%) of interviewees were female. This compares to the 69% of females identified in the boarding survey.

Figure 21: Age of Interviewees



- 7.91 To show how the survey interviewees compared to the overall population in the area, 2001 census data for three areas has been analysed:
- Aberdeenshire – the whole Aberdeenshire Council area.
 - Ellon – the continuously built-up area of the town, as defined by the General Register Office for Scotland.
 - Ellon Hinterland – the rural area north of Ellon, but south of a line between Peterhead and New Deer.

7.92 All areas have a similar balance between male and female populations (approximately 50% for each). The skew to females within the Park and Ride user-base is therefore significant.

7.93 Table 12 below shows variation in age.

Table 12: Age Variations – Percentage of Adult Population

Area/Sample	Age 16-29	Age 30-44	Age 45-59	Age 60 or over
Aberdeenshire	19%	30%	27%	24%
Ellon	20%	30%	27%	24%
Ellon Hinterland	18%	33%	29%	19%

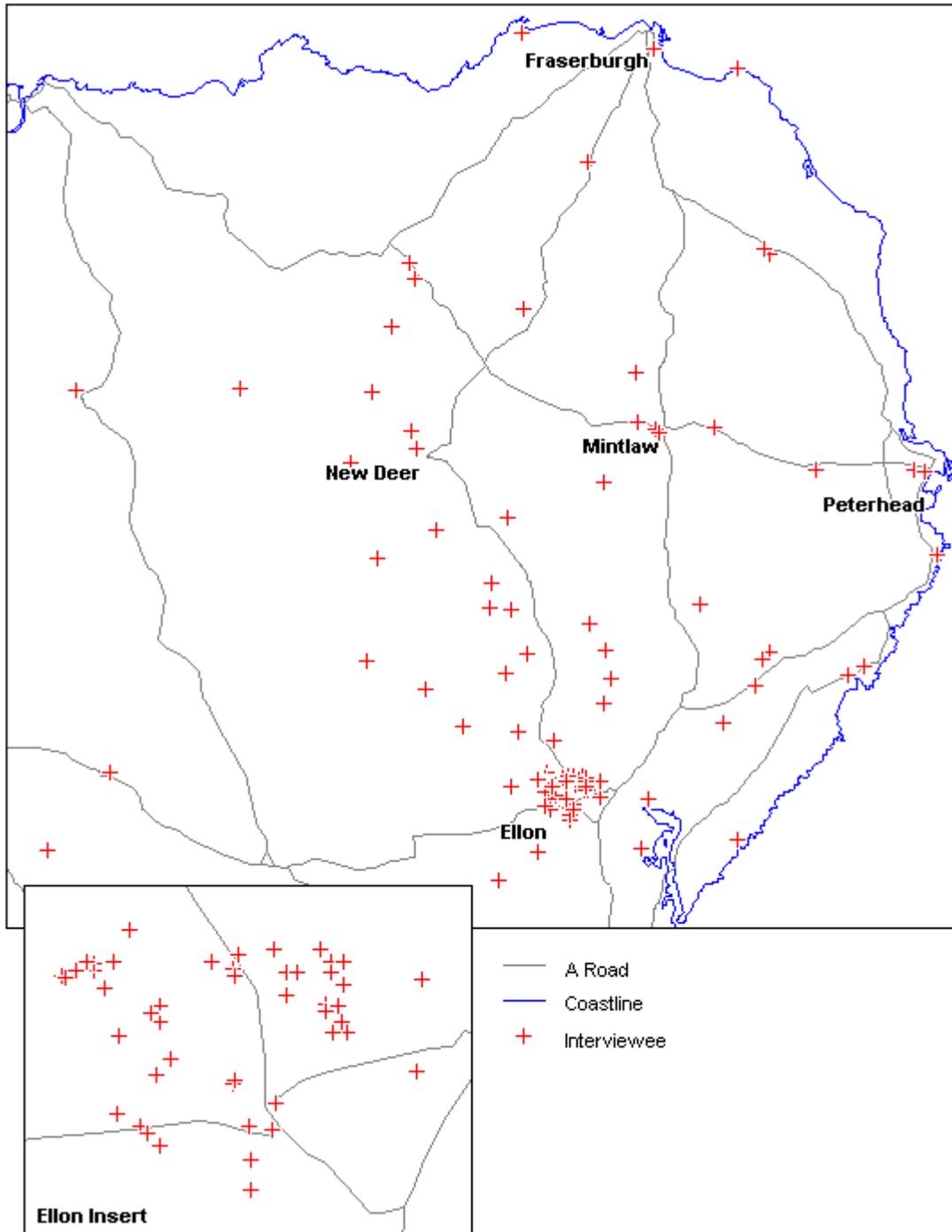
Area/Sample	Age 16-29	Age 30-44	Age 45-59	Age 60 or over
Interviewees	26%	31%	32%	12%

Source: 2001 Census.

- 7.94 A disproportionately high proportion of interviewees were under age 30, while pensioners are under-represented. This bias, in part, reflects propensities to make journeys (pensioners make fewer journeys than other adults), and to use bus (young adults make a greater proportion of journeys by bus)⁵⁷.
- 7.95 126 interviewee records included home address or postcode data of sufficient accuracy to allow the data to be geocoded (located geographically). This data represented 144 users.
- 7.96 Figure 22 below shows the geographic distribution of interviewees' homes.
- 7.97 Exactly half (63) of the interviewees live in Ellon, generally in the suburban areas away from the centre of Ellon. Of the remainder, approximately half live in the A984 corridor between Ellon and New Deer. It is noticeable from the residence location of the interviewees that almost all of those from the New Deer corridor live in the very small settlements that are not served by any bus route.
- 7.98 Of particular interest is the comparison between the New Deer corridor and the neighbouring Ellon-Mintlaw and Ellon-Peterhead corridors. In all three corridors, the core bus service operates along the main road, and does not serve outlying villages and settlements. So we might expect similar proportions of interviewees from outlying villages along each of these corridors. However, far fewer were recorded from outlying villages on the Mintlaw and Peterhead corridors. The key difference between these corridors is the frequency of the bus service operating along the main road.

⁵⁷ See Scottish Executive, (2004), *Travel By Scottish Residents 2002-2003*, for further detail.

Figure 22: Home of Interviewees



7.99 The pattern of interviewees within Ellon also warrants comment. While most interviewees live in the suburban areas of the town, where the direct bus service to Aberdeen is only hourly, a number live very centrally. These people have access to all the Park and Ride services from a stop within easy walking distance of their home – so why are they travelling to the Park and Ride site instead? One states a specific reason – disliking the walk to the bus stop – but the behaviour of others cannot be explained from the data. Curiously none perceives getting on the bus at the stop nearest their house as a realistic alternative.

Journeys Using Ellon Park and Ride

7.100 All interviewees started their journeys from home, except for one who stated “Ellon”, but whose home postcode could not be geocoded.

7.101 91% of interviewees and users were travelling to Aberdeen city centre. Other destinations mentioned were not recorded with sufficient frequency to merit analysis, but included locations within Aberdeen (Foresterhill campus and Bridge of Don), other towns in the area (Inverurie, Peterhead, Pitmedden and Mintlaw), Ellon itself, and one individual travelling further a field, to Dundee.

7.102 Table 13 below summarises the purpose of interviewees’ and users’ journeys. A Scotland-wide average has been included to allow comparison, which uses Scottish Household Survey data. The slight differences between the two groups reflects a tendency for certain activities to be undertaken by groups – for example, shopping is more likely to be the purpose of a group, while commuting is more likely to be undertaken individually.

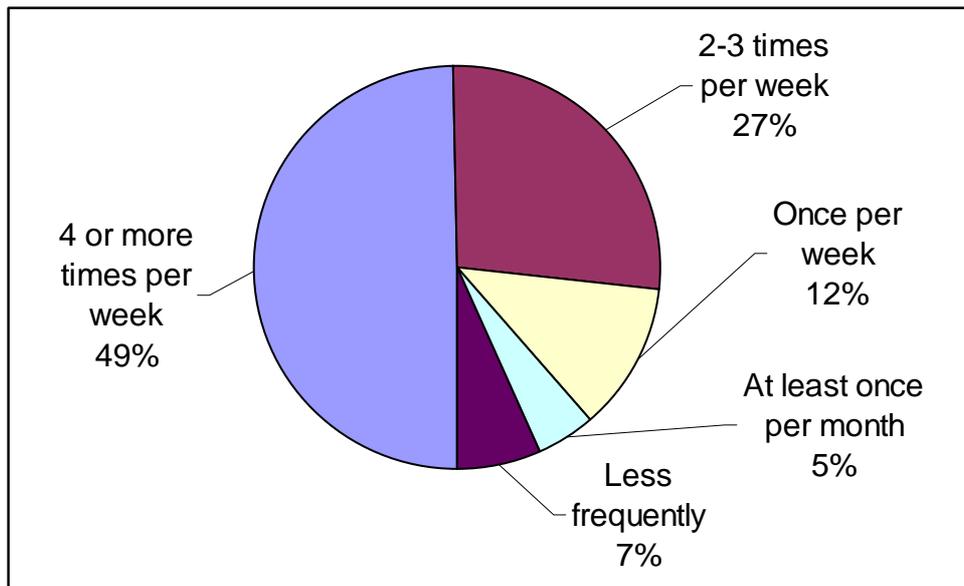
Table 13: Journey Purpose

Journey Purpose	Interviewees	Users	Scotland ⁵⁸
Commuting	61%	58%	24%
Business	4%	4%	4%
Education	19%	20%	3%
Shopping	11%	13%	23%
Health	3%	4%	3%
All Other	1%	1%	44%

7.103 Over half of all interviewees and users were commuting. A surprisingly high proportion of journeys were education-related. No journeys were recorded for non-shopping leisure purposes, such as entertainment or visiting friends, even though these account for a significant proportion of journeys across Scotland.

⁵⁸ Scottish Household Survey 2002/3, purpose of all journeys made by adults.

Figure 23: Frequency of Use



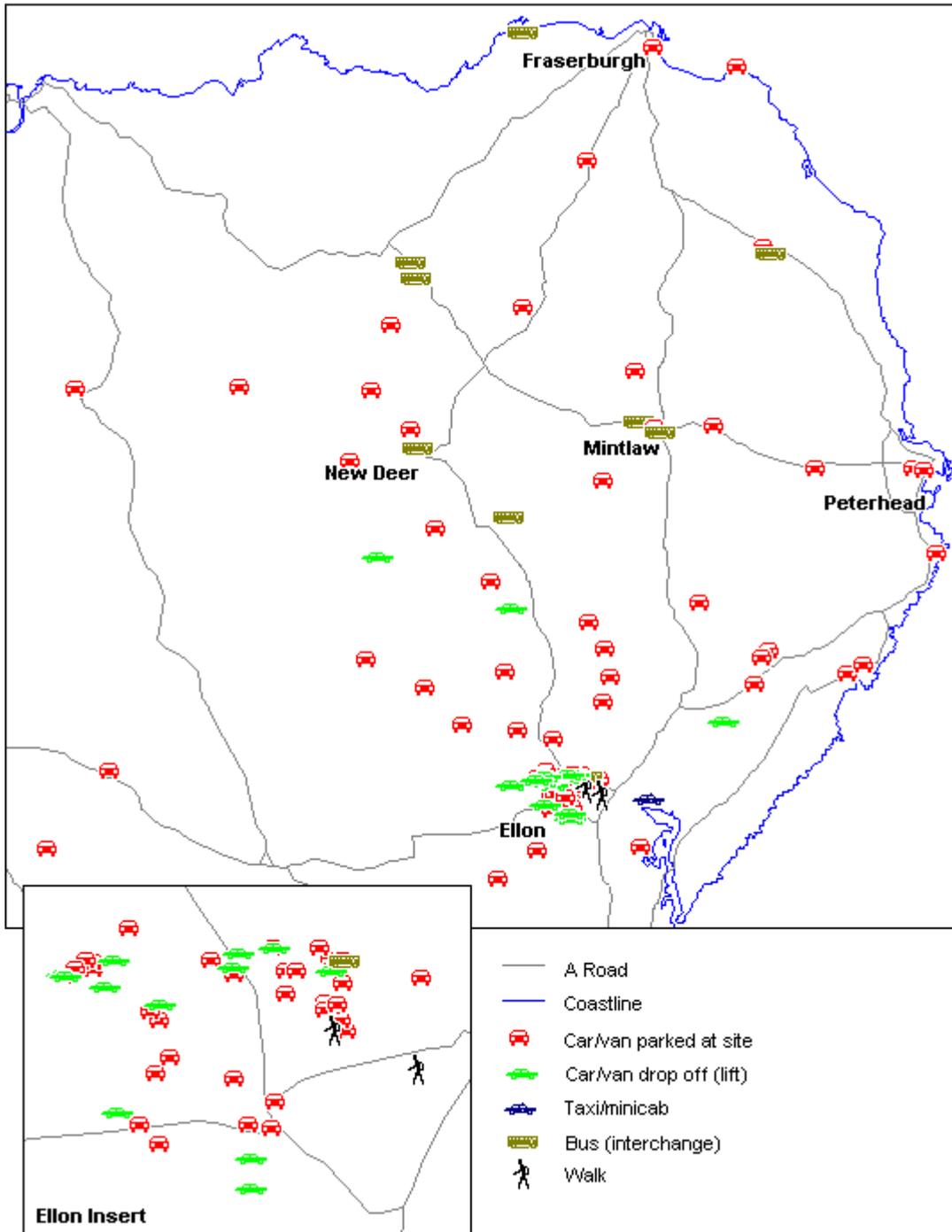
7.104 Figure 23 above shows how frequently interviewees used Ellon Park and Ride to make the same journey. Half are using the site at least 4 times per week, with almost 90% using it at least once a week. There is a strong correlation between the most frequent users and journeys made for the purpose of commuting – 70% of those commuting were commuting four or more times per week. In contrast the majority (60%) of those attending education travelled only two or three times per week.

Table 14: Mode of Travel to Ellon Park and Ride

Mode	Interviewees
Car/van parked at site	72%
Car/van drop off (lift)	15%
Taxi/mini-cab	1%
Bus (interchange)	11%
Walk	2%

7.105 Table 14 above shows the mode used to travel to the site. There are no significant differences between interviewees and users. In spite of the site’s name, only 72% actually “park and ride”. Car-based lifts and interchange between buses are both significant ways of accessing the site.

Figure 24: Mode of Travel by Home Location



7.106 Figure 24 (above) shows mode of travel to the Park and Ride site, by home location of interviewee. A different symbol has been plotted on the map to indicate mode of travel. The majority of lift giving is occurring within Ellon, where round-trip journey times for those providing lifts will be minimal. The home location of those both arriving and departing by bus generally reflects the nature of the local bus network: The majority lie in the Fraserburgh – New Deer – Ellon corridor. At the time of the survey, the service within this corridor terminated at Ellon Park and Ride, where passengers for Aberdeen could change onto connecting services.

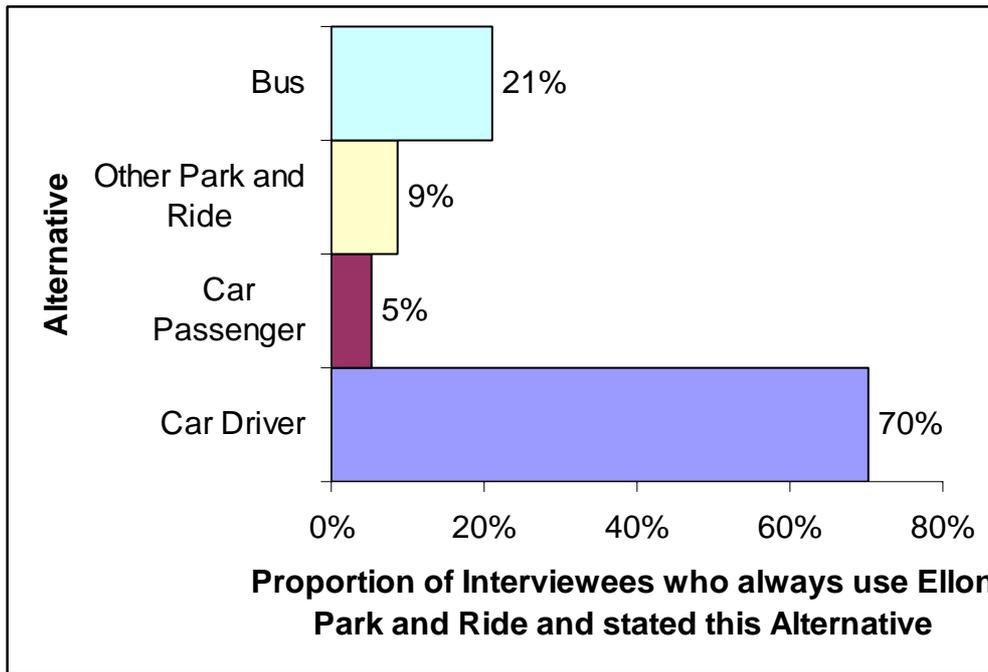
Alternatives to Ellon Park and Ride

7.107 78% of interviewees always used Ellon Park and Ride to make the journey they were undertaking when interviewed. Among these people, 41% stated that they had no realistic alternative to using the Park and Ride, e.g. such as car travel or using an alternative bus service.

7.108 The fact that 31% of *all* interviewees believed they had no realistic alternative to using Ellon Park and Ride is intriguing. Some arrived by bus or were given a lift to the site, and so therefore might struggle to find alternatives. But 60% drove to the site and parked. By implication, this 60% could have driven to alternative modes or even to their destination. Clearly these alternatives are perceived as too unrealistic to be considered but expectations of what is realistic differ between people. More detailed research of how people “construe” options would be needed to understand these issues fully.

7.109 Figure 25 below summarises responses among those stating that they always used Ellon Park and Ride, but did have a realistic alternative. Note that some interviewees cited several alternatives, so the percentages do not sum to 100%.

Figure 25: Alternative Modes for those who always use Ellon Park and Ride



7.110 There is some correlation between the alternatives available and the current mode used to travel to the site: Significantly, all those currently using the bus throughout (interchanging between buses) stated that they could not make their journey as a car driver. In contrast, two thirds of those who currently drive to and park at the site stated that their only realistic alternative was to drive.

7.111 The proportion of people considering an alternative Park and Ride is unexpectedly low, given the apparent suitability of Bridge of Don for most journeys.

7.112 Table 15 below summarises the reasons given for not using alternative modes, among those that always use Ellon Park and Ride. Note that there are overlaps between categories – for example, some people mention “parking” and “cost”, others mention the difficulty in finding parking.

Table 15: Reasons for Not Using Alternative Modes, by those who always use Ellon Park and Ride

Reason for not using...	Car (Driver)	Bus	Car (Driver) or Bus
Less hassle (“don’t like driving to Aberdeen”)	20%	9%	18%
Speed	18%	18%	18%
Cost	15%	27%	18%
Traffic (“congestion”)	20%		16%
Parking in Aberdeen	13%		10%
Convenience (“easier”)	8%	18%	10%
Not passed test	5%		4%

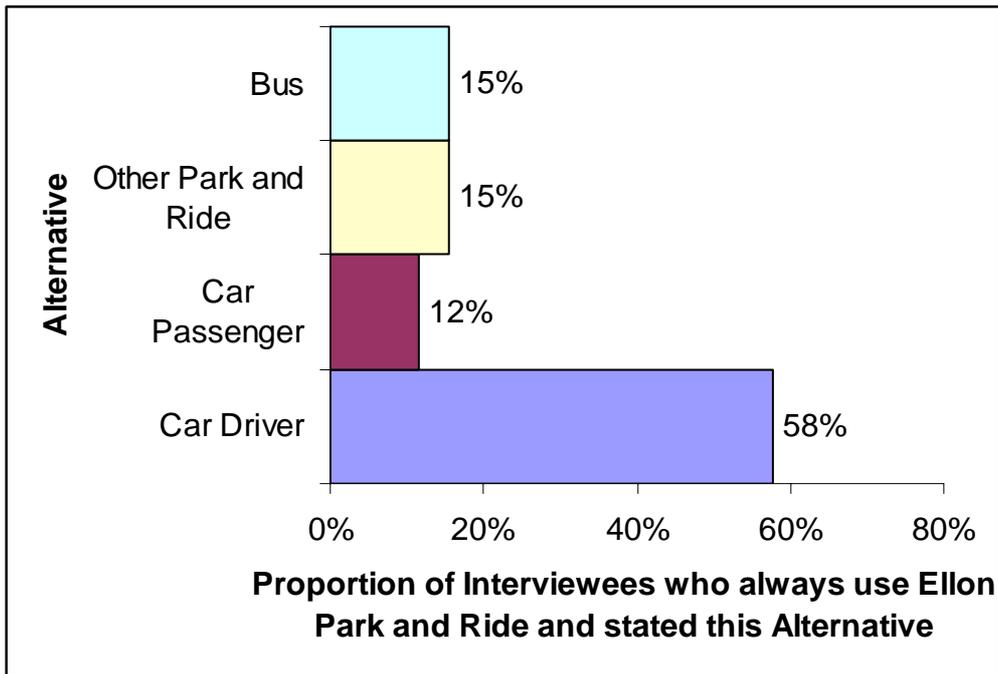
Reason for not using...	Car (Driver)	Bus	Car (Driver) or Bus
Waiting facilities		18%	4%
Environment	3%		2%
Frequency		9%	2%

7.113 The key reasons for not using an alternative to Ellon Park and Ride are hassle, speed, cost, and traffic.

7.114 Alternative modes “car passenger” and “other park and ride” were not proposed by a sufficiently large number of people to warrant detailed analysis. The main reason for not travelling as a car passenger was a desire for independence. Factors mentioned in the decision not to use Bridge of Don Park and Ride include cost (have to pay for parking) and relative ease of accessing the Ellon site (in terms of proximity and congestion close to Bridge of Don).

7.115 Figure 26 below summarises responses among the 22% of interviewees who stated that they did not always use Ellon Park and Ride.

Figure 26: Alternative Modes for those who do not always use Ellon Park and Ride



7.116 Given the low sample size (just 26 interviewees giving reasons), it is difficult to draw conclusions from this data. As with the theoretical alternatives, driving dominates, although other alternatives, notably another Park and Ride site, are reported more often.

7.117 Those that occasionally drove as an alternative to using Ellon Park and Ride, most commonly cited as their reasons:

- Use of the car at weekends, when parking in Aberdeen is easier and journey times faster.
- Use of car when they can share it with someone else.
- Use of car on days when there were additional lifestyle or work requirements, such as escorting children, or requiring a car for work.
- Limited availability of a single household car.

Strengths and Weaknesses

7.118 When asked why they first used Ellon Park and Ride, around half of interviewees used vague terms such as “convenience” or “easier”. The most frequently mentioned specific reasons for first use are shown in Table 16 below.

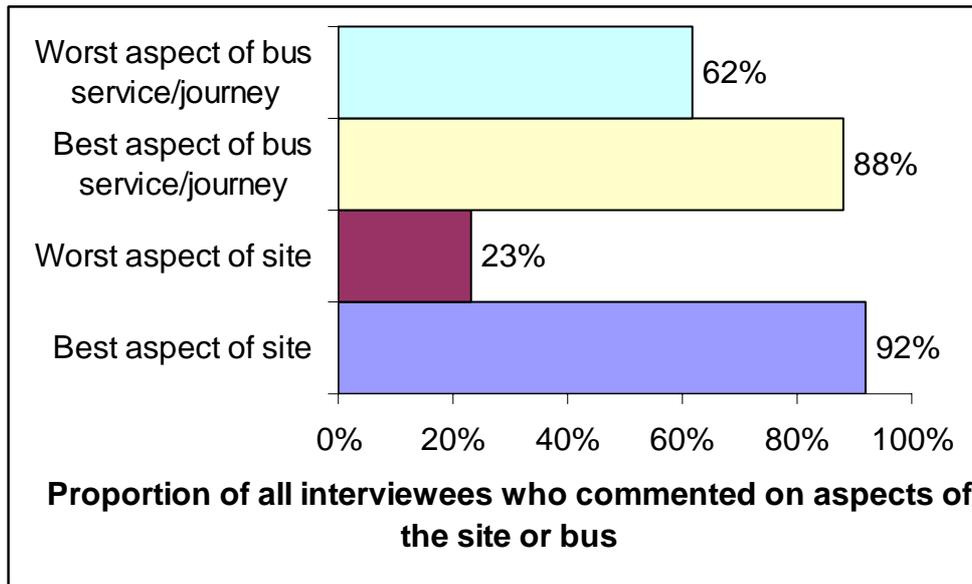
Table 16: Reasons for First Use

Reason	Percentage of Interviewees
Inability to find parking spaces in Aberdeen	13%
Park and Ride being cheaper than the local bus	8%
Rising traffic congestion, often triggered by a particularly bad week or event	6%
Proximity of the site to home	5%
Cheaper or more convenient than using Bridge of Don Park and Ride – suggesting direct transfer between sites	4%

7.119 Other specific reasons for first use mentioned included inability to drive due to an accident, waiting facilities being more comfortable than normal bus stops, introduction of free concessionary fares, and buses in bus lanes visibly overtaking stationary traffic on the approach to Aberdeen.

7.120 When asked to comment on the best and worst aspects of both the site and bus service/journey, comments were overwhelmingly positive.

Figure 27: Propensity of Interviewees to Comment on Different Aspects of the Ellon Park and Ride



7.121 Figure 27 above shows the propensity of interviewees to comment on different aspects of Ellon Park and Ride. Around 90% could comment on a positive aspect of the Park and Ride, while far fewer could highlight a negative aspect. This is, in part expected: If the balance were reversed, it is reasonable to conclude that many of these people would be using an alternative. The balance between the worst aspect of the bus service/journey and site is important: less than a quarter of people could think of anything wrong with the site at all, while almost two thirds found fault with the bus service/journey. This suggests that more emphasis should be placed on the bus service and journey aspects of Park and Ride.

7.122 Table 17 below summarises the most common “best” aspects of the Park and Ride site.

Table 17: Best Aspects of Ellon Park and Ride Site

Aspect	Percentage of all interviewees that commented on a best site aspect, who commented on this aspect
Access ("close to home", "convenience", "away from Ellon traffic")	43%
Parking ("always spaces available")	29%
Existence of waiting area ("warm", "comfortable", "shelter")	24%
Waiting area facilities ("toilets", "television")	14%

7.123 Access encompasses two elements of location: both proximity to Ellon itself for those living within Ellon, and the ease with which those living outside Ellon can access the site without having to drive through the town.

- 7.124 Parking is very often mentioned without explanation, but where further explanation is provided, it often transpires that people like to know that there will always be spaces available. The fact that the car park is always half empty might be regarded as a failure. But perhaps for up to a quarter of users it actually provides reassurance that they will be able to park easily – one of the factors that frustrate them in Aberdeen.
- 7.125 While there is support for some of the facilities provided in the waiting area, a higher proportion of people simply commend the existence of a sheltered, heated, waiting area.
- 7.126 Other aspects were mentioned by less than 4%: Friendliness of staff, cleanliness, and safety.

Table 18: Least Satisfactory Issues for Ellon Park and Ride Site

Aspect	Percentage of all interviewees that commented on a “worst” site aspect, who commented on this aspect
Weather (“exposed”, “ice in winter”)	24%
Location (“too far from town”, “needs to be further north”, “remote”)	21%
Queues to board buses (“need to stand outside or miss bus”)	10%
Waiting room closed weekends and evenings	14%

- 7.127 Table 18 above summarises the responses which people gave when asked what was the “worst aspects of the site”. Note that the sample size is very small, so results should be interpreted with caution.
- 7.128 Some of the comments made relate to the remoteness of the site, and feeling of insecurity when un-staffed – a sense that the site is too isolated, with no nearby civilisation or other facilities that might be open late at night. While little can be done to alter the location or weather, specific issues, such as icy car parks in winter, can be addressed. People feeling obliged to queue outside for buses means that they can’t use the waiting facilities fully – it may be easier to increase capacity of buses than rebuild the site to allow people to queue inside.
- 7.129 A number of other specific points were raised:
- Confusion over where buses to places like Inverurie leave (“bus parked in wrong place” – it should be noted that these services do not stand in the main bus boarding bay).
 - Long gap in the Saturday morning service at around 08:00 (this probably reflects lower demand early on Saturday morning).
 - Expensive for groups (families).
- 7.130 Table 19 below summarises the best aspects of the bus service and journey.

Table 19: Best Aspects of the Bus Service and Journey

Aspect	Percentage of all interviewees that commented on a best bus aspect, who commented on this aspect
Frequency ("regular", "many buses")	25%
Reliability ("on time")	15%
Cost ("cheap" "fares reasonable")	15%
Journey speed ("quick")	14%
Relaxing ("can sleep on bus", "comfort")	13%
Convenience ("less hassle than driving")	9%

7.131 Other aspects mentioned (by fewer than 5%) were:

- That the bus travels "straight" to Aberdeen, using the most direct route.
- No queuing in traffic – specifically the existence of bus lanes.
- Comments about friendly drivers and cleanliness of vehicles.
- Concessionary fare.

7.132 The fact that frequency is the most commonly mentioned positive aspect of the bus service is significant. Most people in urban areas would not perceive a scheduled frequency of 15-20 minutes as frequent. However, in rural Aberdeenshire such frequencies are regarded favourably.

7.133 Table 20 below summarises the worst aspects of the bus service and journey.

Table 20: Worst Aspects of the Bus Service and Journey

Aspect	Percentage of all interviewees that commented on a worst bus aspect, who commented on this aspect
Overcrowding ("can be full", "can't get a seat")	35%
Unreliability ("late", "bus didn't turn up", "leave early")	18%
Frequency ("need to wait")	8%
Drivers ("occasionally grumpy", "too fast", "drive past stop")	6%
Poor quality of double-deckers	6%
"Congestion"/Lack of bus lane along whole route	5%

7.134 Other negative aspects mentioned (by fewer than 5%), included:

- Delays caused by road works.
- Buses too hot.
- Cost.
- Lack of "advertising" of return pick-up point.

7.135 Overcrowding, real or perceived, is the most commonly mentioned negative aspect of the bus service. Because of the nature of the coach vehicles used, people are turned away from overcrowded buses and forced to wait for a later service. Overcrowding is therefore not just a

case of travelling in an unpleasant environment – it may very well be a case of arriving late for work or college, having been forced to wait 20 minutes longer than expected. More detailed analysis suggests that the overcrowding is regarded as a variable or seasonal problem – while every journey will not be overcrowded, some are.

- 7.136 In 7.118 we saw how a significant proportion of initial use was caused by the difficulty in finding a parking place in Aberdeen, and how (in 7.122) how certainty of parking at the site was a major attraction. A proportion of users primarily look for certainty in their travel arrangements. If they discover that sometimes they can't board a bus because it is overcrowded, their illusion of certainty will be shattered, and they may look for alternatives.
- 7.137 The short-term solution to overcrowding – use of lower quality double-decks – is also singled out for criticism. Clearly there is perception of differences in vehicle quality, and these differences are regarded as important by a proportion of people.
- 7.138 Unreliability of the bus service scores higher than those citing traffic “congestion” (or measures to tackle it). It is also intriguing to note that about the same proportion of people commended the service's reliability as complained about its unreliability. The reasons for unreliability and buses being perceived to not arrive cannot be gauged from the survey, and would require further investigation. Unreliability might indicate operational problems (such as staff or vehicle shortages), or might be a function of variable traffic conditions delaying buses.
- 7.139 Although only mentioned once, difficulty finding where to board the return bus could be a significant barrier for new users, particularly those unfamiliar with bus travel.
- 7.140 Interviewees were asked a completely open question, to name one aspect of their whole journey that they would change. Only 30 interviewees responded to this question.
- 7.141 No one improvement was mentioned with sufficient frequency to justify prioritising (most of these issues were mentioned by just three people). Improvements mentioned were:
- Improving the quality of vehicles used.
 - Specific infrastructure improvement – either dualing the A90 north to Ellon, or providing additional highway capacity or priority around Bridge of Don.
 - Provide facilities closer to their homes.
 - Better advertising of fare and timetable changes.
 - More seats on buses.
 - Improved frequency at peak times.

- Better waiting environment on Union Street in Aberdeen.
- Earlier buses at Bridge of Don Park and Ride (suggesting some early-morning users would transfer there instead if services were operated for longer each day).

7.142 Many of the improvements reflect the perceived weaknesses and strengths, analysed above. For example, no improvements are suggested to the site itself, merely suggestions for alternative (or perhaps complementary) locations.

Summary

7.143 Use of Ellon Park and Ride is heavily peaked: Approximately two thirds of all passengers board buses at the site between 06:30 and 08:30.

7.144 Almost 80% of users are adults, with only 18% pensioners. Over two thirds of users are female.

7.145 Half of users live in Ellon. A high proportion of those living outside Ellon live in the Ellon-New Deer corridor.

7.146 Over 90% of users travel to Aberdeen city centre.

7.147 The purpose of most journeys is commuting or education, with below average use for shopping or other leisure pursuits.

7.148 Half are very regular users of Ellon Park and Ride (four or more times a week). Almost 90% use it at least once a week. Over three quarters always used Ellon Park and Ride to undertake their journey.

7.149 In spite of the site's name, only 72% actually "park and ride". Car-based lifts and interchange between buses are both significant ways of accessing the site.

7.150 Almost a third of all interviewees believed they had no realistic alternative to using Ellon Park and Ride, even though the majority drove to the site and parked.

7.151 Among those that had an alternative to Ellon Park and Ride (most commonly driving to their destination by car), but never used it, the main reasons given were: hassle, speed, cost and traffic.

7.152 The most common reason for first using Ellon Park and Ride was an inability to find parking spaces in Aberdeen. However, a number were also attracted by the service originally being cheaper than the local bus.

7.153 The vast majority of interviewees praised Ellon Park and Ride. Negative aspects of the bus service/journey were more likely to be highlighted than problems with the site.

- 7.154 Ease of access to the site was the most favourable aspect of the site, although the fact that parking spaces were always available and the existence of sheltered waiting areas were frequently mentioned. The most commonly stated negative aspects were the exposed and remote nature of the site.
- 7.155 Frequency was the most commonly mentioned positive aspect of the bus service and journey. Other common positive themes were reliability, cost, journey speed, and relaxation. About the same proportion of people commended the service's reliability as complained about its unreliability. The most commonly stated negative aspect of the bus service and journey was overcrowding.
- 7.156 Overcrowding has become a problem during the peak, with passengers sometimes unable to board the first bus. A significant proportion of users want certainty in their travel arrangements: If the guarantee of a parking space at Ellon Park and Ride attracts these people, the lack of certainty of a seat on the bus will lose them.

8.0 Assessment and Contribution of Ellon Park and Ride

8.1 This chapter summarises the outcomes of Ellon Park and Ride.

Fulfilment of Objectives

8.2 Ellon Park and Ride has promoted and encouraged some “modal shift” in favour of public transport. Approximately half of all users regard driving direct to their destination as a realistic alternative to Park and Ride, but choose to use it. Furthermore, two thirds of users travel during the two busiest hours of the peak, when mode shift is most desirable as a means of easing pressure on limited highway capacity. However, even at peak, usage of Ellon Park and Ride is only equivalent to approximately 5% of traffic flows in the corridor. So overall, the impact of this mode shift on traffic levels is marginal.

8.3 The scheme has not significantly reduced road traffic volumes since the scale of impact resulting from mode shift is of a different order of magnitude to the upward trend in road traffic. Growth of Park and Ride is part of a general process of lifestyle and behavioural change that cannot easily be linked to levels of traffic growth on major roads. There may have been some additional local car travel to the Park and Ride site since many users highlight having changed from using a local bus stop to instead driving to the Park and Ride site to gain cheaper fares. Again the impacts on overall local traffic levels will be minimal.

8.4 There is no specific evidence that the scheme has promoted employment or reduced social exclusion. However, the majority of people using Ellon Park and Ride are doing so for work or education journeys. It seems likely that the scheme has improved access to work and education opportunities in Aberdeen from the Ellon area, and to some extent from Buchan more generally.

8.5 Ellon Park and Ride has provided an innovative and, relatively, sustainable means of dealing with rural transport problems. While the scheme may not have been implemented on the same scale as many edge-of-town Park and Ride sites, the location is unusual. The provision of services with negligible additional resources, by using existing largely commercial local bus services, reduces reliance on the authority to provide revenue support for the scheme. It increases use of existing bus services, making them marginally more sustainable.

8.6 It is difficult to determine whether the scheme has reinforced the role of Ellon as a principal centre in Aberdeenshire. It seems unlikely that the scheme has caused Ellon to be seen as less of a principal centre.

Inputs, Outputs and Performance

8.7 The site cost approximately £650,000 to design and build. Operating costs of the site are estimated at £35,000 per year.

- 8.8 Over 700 people are now using the scheme each week. Two thirds of users travel during the busiest two hours of the peak, at times when the highway network is closest to capacity. Usage is still rising, although peak usage is likely to be constrained by insufficient capacity on bus services.
- 8.9 Based on the cost and usage it important to look at the subsidy costs per passenger associated with the project. There are both operating costs and the discounted capital costs of construction. Based on the patronage figures the operating costs are approximately £1 per user per day. By discounting the capital costs over a 30 year period and adding these to the revenue costs, the total net subsidy, including the cost of building the site, is just under £2 per user per day at current prices. However these costs assume that the bus services can be sustained and operated commercially for the 30 year period. It is not clear from the analysis of fare levels that this will be the case but further work would be needed to explore this aspect in more detail.
- 8.10 Although patronage continues to grow, there is some evidence from the number of vehicles parked at the site that the rate of growth in usage is slowing. Based on experience at Ferrytoll Park and Ride in Fife, once one part of the Park and Ride scheme reaches capacity (in the case of Ellon, occasional lack of capacity of buses), usage will peak and then decline slightly, until the capacity constraint is relieved.

Economy, Efficiency, Effectiveness and Equity

- 8.11 By avoiding significant revenue expenditure (by not supporting the operation of dedicated bus services to the site), the scheme is relatively cost effective in comparison to traditional models of delivering Park and Ride. The existing Aberdeen City sites, both with four times the parking capacity, are not well performing commercial operations. Small-scale Park and Ride schemes, like Ellon, do not have sufficient car park capacity to generate the volumes of passengers required to support frequent commercial bus services.
- 8.12 The Ellon approach is possibly the only way of delivering a sufficiently attractive frequency to a small market without significant revenue commitment by the authority. The revenue costs of delivering a dedicated 15-minute frequency service to Ellon would be significant: Assuming 8 vehicles (based on a 100 minute round trip time), operating 12 hours a day (less than at present, but covering the core peak flows), just under 100 bus hours per day would be required. Assume a cost to the authority, after on-bus revenue, of £15 per bus hour. The cost would be £1500 per day, £9000 per (6 day) week. This would represent a subsidy of almost £13 per user per day – a total, including other costs, of over £14 per user per day, compared to less than £2 at present.
- 8.13 The scheme has generally contributed to the objectives set for it, without providing an instant solution. For example, some effective

mode shift may have occurred, but absolute volumes are insufficient to make a real, tangible difference to traffic conditions.

- 8.14 Ellon Park and Ride has attracted a reasonable proportion of its target market – those driving to Aberdeen. Over 90% of users travel to Aberdeen, and over half stated that car was a realistic alternative for their journey: If the scheme did not exist, we can be reasonably sure that these people would instead drive to Aberdeen. Within rural areas, the scheme has primarily attracted people with no regular bus service.
- 8.15 The scheme has attracted a proportion of people who would probably otherwise use the local bus service but this should have no practical impact on the viability of those services – it merely changes the place people board.
- 8.16 However, the initial lowering of fares from the Park and Ride site undermined the approach. It created an incentive for people to drive to the park and ride site instead of walking to their local bus stop. It created inequality, by having the effect of offering a lower fare to those with access to a car, while forcing those without a car to pay the full fare. While this inequality has since been resolved within Ellon, it appears to have had a lasting impact in making Ellon bus fares cheap relative to other places in the Buchan corridor, since other places did not have fares suppressed.
- 8.17 Park and Ride-related fare suppression at Ellon improves accessibility for Ellon residents relative to other parts of Formartine and Buchan.
- 8.18 However the fare suppression also risks undermining the commercial sustainability of existing services; if operators feel restrained in their ability to increase fares, they might not achieve sufficient revenue to cover long-run costs – notably the cost of new vehicle investment. This aspect needs to be monitored carefully.

Contribution to Overall Strategy

- 8.19 Ellon Park and Ride is transferring journeys from car to bus over the most congested sections of road. The majority of users are travelling to Aberdeen (the busiest sections of road) during the peak (the busiest time of day).
- 8.20 It is not realistic to expect a single scheme to have any tangible impact on traffic flows across Aberdeenshire, because the absolute number of people using the scheme is small.

9.0 Recommendations and Implications for Park and Ride Development in Aberdeenshire

9.1 This chapter makes a series of recommendations about Ellon Park and Ride, and then investigates approaches to developing Park and Ride elsewhere in Aberdeenshire.

Current Issues

9.2 **A solution must be found to the current overcrowding on buses.** Many users look for certainty in their travel arrangements. Unpredictable availability of seats creates uncertainty in the journey. We know that many existing users prefer certainty – certainty in being able to park at the site, in contrast to parking in central Aberdeen. Evidence from Ferrytoll suggests usage will actually decline once the scheme reaches capacity.

9.3 The current solution, provision of older double-deckers on certain journeys fails for two reasons:

- Intending passengers are still unable to board earlier overcrowded services, greatly increasing their overall journey time and the variability of that journey time. This also causes passengers to queue outside, reducing the benefit of waiting facilities at the site.
- Vehicle quality and travel environment is perceived as inconsistent, and tends to weaken the overall brand, particularly when compared to Aberdeen City Park and Ride, where all services are provided by vehicles of similar quality. The service brand is already weak, by virtue of the use of existing rather than dedicated services.

9.4 Bus industry economics do not dictate that if a vehicle is full, it is making enough money to justify investment in either a larger vehicle or additional vehicles. When vehicles are overcrowded during the peak, but under-utilised off-peak, total revenue may be insufficient to justify investment and operation of the vehicle. Most bus networks rely on relatively strong off-peak travel. Unfortunately Ellon Park and Ride is very strongly focused on commuter journeys, with almost insignificant additional traffic during the off-peak.

9.5 This situation is compounded by the suppression of fares from Ellon. These will tend to mean that the revenue from Ellon passengers is lower per distance travelled than revenue elsewhere in the network.

9.6 Fare suppression is dealt with in a separate recommendation below. It is not possible to conclude that fares increases at Ellon would provide sufficient additional revenue to provide additional vehicle capacity since we do not have detailed information of Stagecoach's operating costs. However, such a move would eliminate the incentive for the operator to provide vehicles to other parts of the network instead of Ellon. It is not possible to predict with accuracy the impact on

patronage of fares increases. While standard fare elasticities could be applied to predict the impact on patronage of a fare change, nationally-derived values may not be applicable to the local Ellon market. However in most bus markets, commuters are least sensitive to price changes, suggesting that fares increases would generate a net long-term increase in revenue.

- 9.7 Direct investment by Aberdeenshire Council in new vehicles poses a problem: The overcrowded services are being provided commercially. Intervention raises concerns about the impact on competition in the market.
- 9.8 Conventional contracting of additional journeys (as a supported service) is not viable because the contracted journeys would run in “competition” with existing commercial services. It may however be possible to use *de minimis* powers⁵⁹ to modify the existing commercial services to provide additional journeys during the peak. *De minimis* allows the authority to negotiate modifications to an existing commercial service with one operator only.
- 9.9 **Fares from Ellon Park and Ride should not under-cut those from Ellon town, and should not be suppressed relative to the rest of the network.** Suppression of fares at the site following negative comments from the local media lead to a number of problems:
- Initial differences between fares at the site and fares at Ellon attracted users from the existing bus service for no other reasons than fare. This encouraged additional car journeys within the town. It caused inequality between car-owners and non-car owners in the town.
 - Fares from Ellon are still lower than probably would have been the case without Park and Ride. This skew in the fare structure will tend to make Ellon more attractive than other towns in the area – in effect, contributing to inequality between Ellon and places such as Peterhead and Mintlaw.
- 9.10 As noted above, fare suppression at Ellon will tend to discourage the operator from investing in services to Ellon, since the revenue yield per passenger is lower.
- 9.11 Current fare levels are not excessive for individual commuters. Indeed for those who would pay for both car parking and fuel, use of Ellon Park and Ride offers a considerable financial saving. This presumes that people are rational about the cost of motoring, when most studies suggest they are not.

⁵⁹ Contained within Transport Act 1985.

- 9.12 Both the overcrowding and fares suppression issues reflect a need to **acknowledge the responsibilities of each partner in the scheme**. The scheme is a partnership, rather than a contract. Both partners are benefiting from the current approach. The authority is delivering a Park and Ride scheme in a rural area for less than 20% of the cost of providing it as a dedicated contract. The operator is gaining around 5% additional patronage on the Buchan-Aberdeen corridor as a result of the scheme, with almost no additional operating cost, while not having their existing market potentially undermined by a dedicated contracted service.
- 9.13 The operator is generally responsible for vehicles and service, the authority for site. So we might assume the operator is solely responsible for resolving overcrowding on their vehicles. However, if overcrowding undermines the use of the site itself, the authority has a right to be concerned. The extent to which the authority can influence the operator on such an issue is unclear.
- 9.14 However, the success or failure of the scheme is still largely a function of the policies of Aberdeen City. Specifically their city centre parking policy is crucial, although any future removal of bus lanes or bus access to parts of the city centre could also have a detrimental effect on Ellon Park and Ride. It is therefore desirable to **reduce exposure to the risk of city centre parking policy change in Aberdeen**. This suggests that NESTRANS should take a greater role in Park and Ride in Aberdeen/Aberdeenshire. In practice, given the current legislative environment, there is very little either Aberdeenshire or Stagecoach can do to mitigate the risk of policy change in Aberdeen.

Marketing and Users

- 9.15 Marketing activity – specifically promotional activity, but also elements of product design – needs to be far more focused.
- 9.16 **Marketing activity and development should focus on two distinct groups – Ellon residents, and those living in the small settlements which are not served by bus, immediately to the north of Ellon**. Current usage is heavily biased towards those living relatively close to the site. Given the geographic location of the site, we might expect users to gather from across Buchan. Instead the catchment for the site is akin to “nearest bus stop with a frequent service”. This analogy also tells us something about those users most likely to be attracted to Ellon Park and Ride: People who would consider using local bus services, if only they served their homes frequently.
- 9.17 The narrow catchment should allow relatively individualised marketing approaches to be adopted, based on home location.
- 9.18 **Ellon Park and Ride should be targeted at individual commuter journeys, not groups or leisure travel**. In policy terms, individual

commuters travelling to Aberdeen have the most negative impact on the road network. While in operational terms it is desirable to increase off-peak use, the current Aberdeen city centre car parking structure will tend to make Park and Ride unattractive for short-stay visitors to the city. Competitively priced group-focused ticketing (in effect, payment per car, rather than passenger) cannot be applied to existing non-dedicated commercial services. Indeed, to attempt to market Ellon Park and Ride to groups risks actively creating the impression that it is poor value for money overall – in practice it is reasonably good value for money for individuals.

- 9.19 It follows that marketing efforts should be directed away from group and leisure-related campaigns, such as those to encourage shopper use at Christmas.
- 9.20 **Less emphasis should be placed on travel to destinations other than Aberdeen in marketing. Aberdeen should be the focus.** While the role of the site as an interchange or a means of accessing places like Dyce is a worthwhile marginal benefit, the characteristics of other destinations and services are not comparable to Aberdeen, and therefore risk confusing otherwise simple messages. Non-Aberdeen services are far less frequent, and benefits such as ease of parking and avoidance of traffic congestion are largely irrelevant.
- 9.21 **Publicity and marketing should be consistent:** Produced to a consistent design and production quality, with use of consistent logos and fonts. The image created should reflect the competence and quality of the product being delivered.
- 9.22 Marketing should build on the strengths of the scheme, such as:
- Ease of getting to and parking at the site – perhaps expand the notion that the location is “local”.
 - Frequency – although this needs to be set in the context of the local area.
 - Overall journey speed.
 - Fare – but this needs to be carefully expressed in the context of individual commuters who would normally pay for parking – it is also problematic in the current operating environment, where fares are unlikely to be stable.
 - Relaxing and hassle-free journey.
 - Cost savings with the use of the Park and Ride saving an average of £3.30 in fuel.
- 9.23 **Marketing campaigns should be targeted between August and December** when the evidence suggests users are most likely to switch to Park and Ride.

- 9.24 Several specific issues with the **current product** were identified, which should be acted upon:
- Provision of suitable winter treatments on the car park and walkways at Ellon Park and Ride site.
 - Mark bus bays at Ellon Park and Ride site correctly, so that terminating services are clearly shown to leave from a different bay to core Buchan corridor services.
 - Enhancements to waiting facilities within Aberdeen city centre. Generally the level of facility at Ellon Park and Ride is more than adequate, and future actions on waiting facilities should be directed towards the Aberdeen “end” of the journey. The requirement for on-street facilities makes it impossible to implement waiting facilities comparable to Ellon, however it is desirable to better balance the level and quality of facilities between the main outward and return boarding points. Aberdeenshire will obviously need to work closely with Aberdeen City Council in delivering this.

Development Process

- 9.25 **Choice of modes and scale of scheme should reflect the nature of existing public transport services.** So where the combination of frequency and journey time is better by rail than bus, rail-based schemes should be prioritised. Where there is no room to expand rail-based facilities (such as car parks), bus might be more appropriate. The limited nature of the rail network will mean schemes are primarily bus-based. In all cases the scale of the scheme needs to be in proportion to the demographic characteristics of the area being served. This is discussed further under the heading, “Micro Park and Ride”.
- 9.26 It might be argued that bus and rail attract quite different markets. Generally, poorer people favour buses, while wealthier people favour trains. Aberdeenshire may transpire not to match these national stereotypes. There is also strong evidence to support the notion that Ellon-style Park and Ride is attracting people with somewhat higher incomes than traditional bus users (see 9.31).
- 9.27 **Scheme objectives should relate to delivery.** Relatively straightforward analysis of traffic data and proposed car park capacity show that the rate of growth of road traffic was too high for the original proposals alone to achieve a sustained reduction in road traffic on the corridor. Practical delivery of objectives involves “contributing to a reduction in the rate of growth of traffic on the corridor”.
- 9.28 **A two-stage approach should be adopted to consultation.** In the first stage, agreement should be sought with key politicians and representatives of local people, businesses and similar. The need for a Park and Ride in a given area should be agreed. The second stage of the process is site-specific, based on the premise that the scheme will

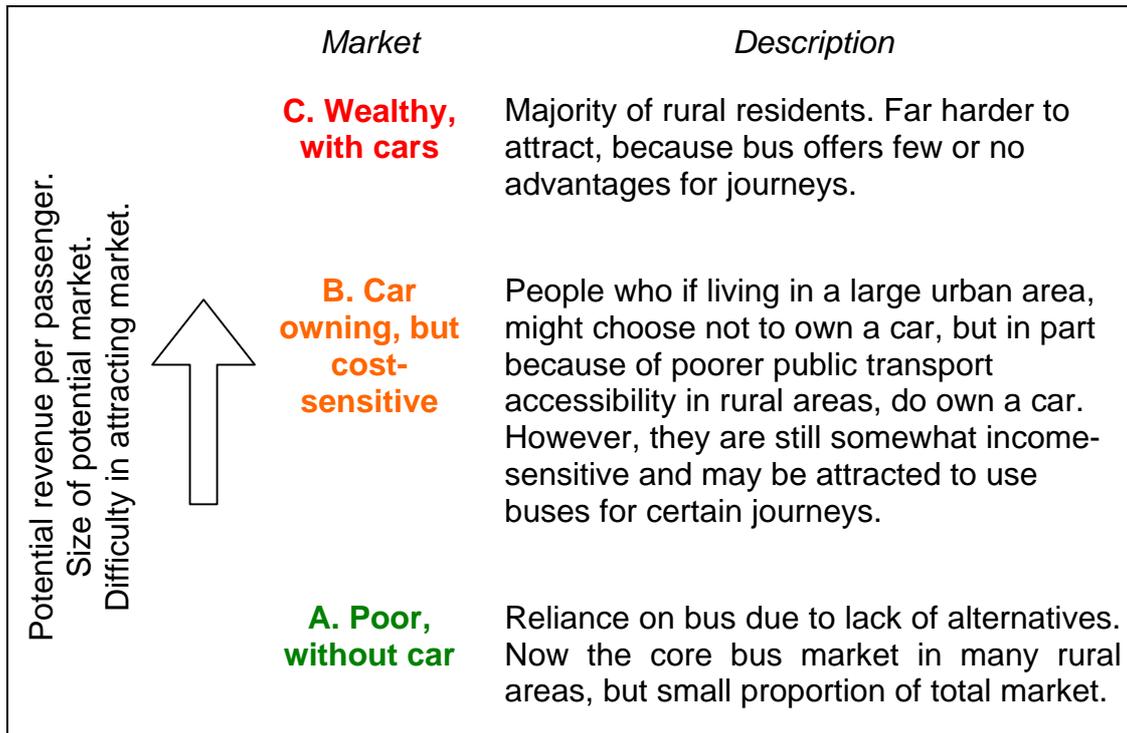
be developed at one of the sites. This second consultation should focus on the details of the scheme, rather than whether the concept of the scheme is “good or not”. In this way it is hoped to minimise the risk of schemes failing after significant consultation activity.

- 9.29 **Schemes should be designed with a bias towards over-capacity.** Users like to be sure that they can find parking spaces. Where there is doubt as to required capacity, upper estimates should be used, rather than lower ones. This recommendation does however need to be set against environmental impact, land-take, and build costs.
- 9.30 **Scheme location should complement other planning development where possible.** Park and Ride facilities, using the Ellon model, provide a rare opportunity to pre-emptively provide transport to new development. Development close to the site will also remove the feeling of remoteness, and enhance users’ perception of security. Park and Ride facilities will also tend to attract subsequent land use development, and as such sites should be in locations that can sustain such development.

When Park and Ride is a bus stop

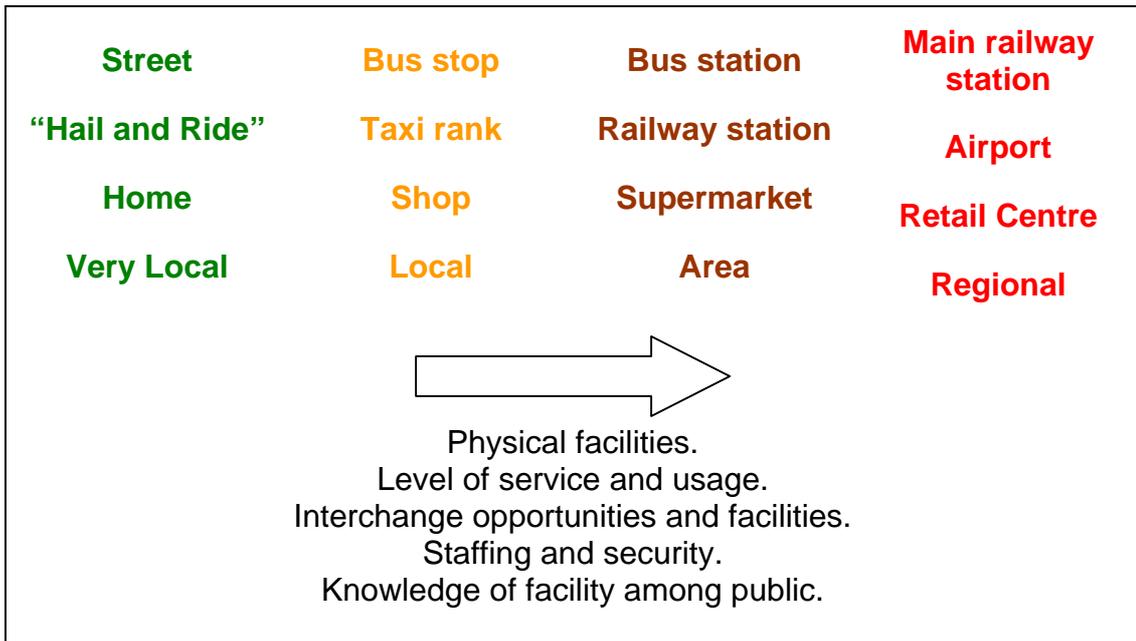
- 9.31 Two facets of Ellon Park and Ride are particularly worthy of note:
- Users share many of the characteristics of those using buses in urban areas, but not using them in many rural areas. The most obvious characteristic is use to get to work. However there are also characteristics that are more typical of a traditional bus market – notably a bias towards women (who tend to be more income sensitive than males).
 - It has an unexpectedly small catchment, primarily made up of people living in local areas that are either not served by bus, or are poorly served by bus.
- 9.32 Figure 28 differentiates between rural and near-rural (“peri-urban”) bus markets, based primarily on income. None of the three markets is discrete – each merges into the next. There are a number of alternative methods of segmenting the market – this is one method, intended to demonstrate a specific issue.

Figure 28: Simplified Hierarchy of Rural and Peri-Urban Bus Market Segments



- 9.33 Generally bus operators gain market “A” by default, however the number of people in this market is in long-term decline. Even in urban areas, bus operators struggle to gain any part of market “C”. The interesting market is “B”. These are the people who often will be found using buses in urban areas, but generally won’t be found using them in rural areas. But Ellon Park and Ride does appear to be attracting the “B” group.
- 9.34 The ability to attract this second market segment is very significant. The potential market is probably larger than the existing bus market, so even if only a proportion can be attracted, overall volumes will be significant. Although still somewhat income sensitive, these people probably can be made to yield greater revenue per head than existing bus users, if a suitable method of differentiation can be determined.
- 9.35 Figure 29 shows the sliding scale of facilities for accessing public transport networks.

Figure 29: Classification of Public Transport Network Access Facilities



- 9.36 There are no absolute definitions of facility – there is a sliding scale from no facility at all (such as Hail and Ride bus operation), to facilities such as major international airports.
- 9.37 The figure also highlights the importance of integrating public transport with land use policy – relating the scale of public transport facilities to, for example, the scale of retail facilities.
- 9.38 It might be argued that traditional Park and Ride sites do not belong on this scale: This depends on the extent to which they are regarded as “car parks” and the extent to which they are regarded as offering “bus services”. Assuming the latter is significant, as is the case at Ellon, Park and Ride is broadly comparable to a bus or railway station, and not a bus stop.
- 9.39 There is quite a large gap between bus stops and Park and Ride facilities. This tends to reflect the increased volume of traffic at Park and Ride sites, although there is also a tendency for local authority-sponsors to over-specify Park and Ride facilities to compensate for perceptions of poor bus stops.
- 9.40 However, Park and Ride style facilities can simply be scaled down, such that they offer a level of facility midway between bus stops and traditional Park and Ride.

Micro Park and Ride

- 9.41 “Micro Park and Ride” is intended to provide a practical “park and ride-like” solution for large rural areas with significant passenger flows to large towns or cities. The concept builds on the existing bus network,

- scaling the Ellon concept on inter-urban Park and Ride down to be applicable to other parts of Aberdeenshire.
- 9.42 It has a higher level of facility than a bus stop, but lower than a conventional Park and Ride site: Provision of heated waiting facilities and car parking with some form of security monitoring, but not continuously staffed and not necessarily providing facilities such as toilets or televisions.
- 9.43 As with Ellon, the services provided are those that would already pass the location.
- 9.44 The overall emphasis is less on Park and Ride as a car park, and more on a way to improve access to (and use of) bus services among those who live away from frequent bus routes.
- 9.45 Rather than attempting to market these Micro Park and Rides to everyone, marketing will be focused on a very local area – perhaps a few thousand households living in the immediate hinterland of the site. Marketing needs to emphasis locality, and be perceived less as part of a huge, complex, public transport network: At Ellon 90% of passengers were going to the same place – marketing one single journey is a relatively easy message to convey, if targeted to a discrete market segment. As with Ellon, emphasis should be placed on commuting journeys to Aberdeen, which have the greatest potential to attract users.
- 9.46 Ellon has already scaled the concept of Park and Ride down below what most local authorities would consider a viable scale. It has done this by not trying to run dedicated services. The lack of dedicated services – which many Park and Ride promoters would perceive as a problem – was not perceived by current users as a problem. In part this reflects the nature of the people using the service – those that probably would have used a local bus service, had a suitable one been available for them. Consequently they may be more prepared to accept potentially confusing conditions of use, such as the need to understand return services by a range of numbers, rather than a single consistently branded vehicle. In essence the target market for these Micro Park and Rides, are prepared to use conventional local bus services.
- 9.47 The importance of frequency is less clear from the research undertaken. Many users living in the suburbs of Ellon clearly have been attracted by the increased frequency, although there are a significant proportion of users who have no local bus service at all, and who might still have been attracted to a less frequent Park and Ride. Perceptions of frequency do vary between urban and rural areas: More Ellon users praised the service as frequent than criticised it for being infrequent, in spite of frequencies rarely reaching every 15 minutes, the point at which most urban bus users would begin to perceive the service as frequent.

- 9.48 Unfortunately it is difficult to conclude that a corridor on which the current bus service was only hourly (as is the case in much of Aberdeenshire) would have sufficient frequency to attract users. However, it should be noted that because people are living locally to the site, and tend to use it regularly (90% of those using Ellon did so at least once a week), concepts such as “turn up and go” are far less important than they might be in a conventional Park and Ride scheme which aims to capture casual users who perhaps happen to be driving past the site on the main road.
- 9.49 It is not clear how different geographic markets would respond to Micro Park and Ride. Ellon has fairly average demographic characteristics. More deprived areas like Peterhead might not yield the same proportion of additional users, simply because there is already relatively high bus use in the area. Likewise Banchory, which tends to be wealthier, might have a disproportionate number of people who will never use a local bus service, regardless of how it is made available to them. Underlying propensity to travel to work in Aberdeen may also be a factor: In Ellon, half of all journeys to work were to Aberdeen – this may be far lower in other parts of Aberdeenshire.
- 9.50 Capacity of vehicles, and the potential conflict between partners, remains a concern. As noted in 9.2, peak-only increases in patronage may not result in sufficient revenue to justify operation of additional vehicles, should any current excess capacity be filled. The requirement to involve partners (both operator and authority) is only an issue if the authority continues to take the lead role in providing public transport infrastructure. There are however few constraints on an operator developing their own Micro Park and Ride sites – the planning restraints are similar to those facing any business that attempts to develop land. It is not clear that it is actually any easier for the authority to implement such facilities. The main advantage of local-authority lead infrastructure is certainty of access to services run by any operator, however in the current competitive environment, this is primarily a theoretical advantage.
- 9.51 The integration of Park and Ride into mainstream local bus services is both a blessing and a curse. It prevents Park and Ride extracting from the existing bus network, contributes to maintaining the commercial viability of the local bus service, and avoids the creation of a two-tier public transport system (segmentation of society based on car ownership). However, it also prevents operators from differentiating between each of these markets on price. The ability to differentiate is likely to become increasingly important as a means of generating greater revenue per passenger among those groups that are prepared to pay more. Those attracted to Park and Ride tend to have more money than much of the traditional bus market.
- 9.52 Although non-car interchange at Ellon is a small proportion of total usage, Micro Park and Ride sites have the potential to play an important interchange role between the core bus network and public
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transport for individuals or small groups – taxis and/or Demand Responsive Transport (DRT). The use of Micro Park and Ride sites as hubs for local DRT services is attractive: A basic level of interchange facility has already been provided for those using car, so does not require additional investment. Micro Park and Rides used in this way also allow users a choice of either DRT or their own transport for the local part of their journey. While DRT may still primarily have a social (transport of last resort) function, at least the longer distance aspects of the journeys will use a common service.

- 9.53 In spite of encouraging evidence from Ellon, Micro Park and Rides are a high-risk strategy: there is no guarantee that the concept will be successful elsewhere. While revenue risk is low (no additional services are envisaged), capital may be better invested in schemes where returns (policy or financial) could be estimated with greater certainty. However, the “prize” if Micro Park and Ride were to be successful, is revolutionary: the potential to deliver growth in a rural bus network, with real mode shift at the times of day when the highways into Aberdeen are closest to capacity.

10.0 Conclusions

- 10.1 There is currently one formal bus-based Park and Ride scheme in Aberdeenshire, at Ellon. Ellon is not typical of most Park and Ride schemes in Great Britain:
- It is located in the rural area close to where its users live, rather than on the edge of the destination city.
 - With a maximum of 250 cars, the site has a lower capacity than most Park and Ride.
 - The site is linked to the city using existing commercial bus services, rather than dedicated or contracted services.
- 10.2 This method allows Park and Ride to be scaled down to make it viable to deliver in a rural setting. Delivery costs the authority less than 20% of what it would cost to implement conventional dedicated Park and Ride services at the same location. It contributes to the viability of rural bus services, rather than potentially undermining them.
- 10.3 The approach requires partnership between authority and operator – no one organisation controls the entire scheme. So the authority cannot, for example, control fares from the Park and Ride site. Furthermore, it should not seek to influence fares, since this distorts the bus market in the surrounding area. This distortion risks creating inequality, for example, between car owning households (who can access the Park and Ride) and non-car owning households (who cannot). It also risks skewing commercial investment decisions, for example, undermining the scheme by failing to provide sufficient revenue for operators to invest in additional vehicle capacity.
- 10.4 The scheme has generally contributed to the objectives set for it, without providing an instant solution. Two thirds of all Park and Ride users travel during the busiest two hours of the peak. 90% of users travel to Aberdeen city centre. Half of users regard driving direct to their destination as a realistic alternative to Park and Ride, but choose to use Park and Ride. This represents a major success for the authority – delivering genuine mode shift, when and where the roads are busiest. This success is only tempered by the limited impact a single scheme of this size can make – the magnitude of mode shift is insufficient to offset the underlying growth in road traffic along the corridor. Unfortunately it is difficult for the operator to commercially provide additional resources for peak-only journeys without extracting additional revenue from users. While Park and Ride users may be prepared to pay more than existing bus users, market segmentation or differentiation is challenging because all passengers use the same bus service. There is no realistic potential to significantly increase off-peak usage.

- 10.5 Usage has grown year on year since opening in 2000, however all this growth occurs between August and December each year. The reasons for this pattern are not entirely clear.
- 10.6 In the short term, further growth in usage will be capped by failure to *consistently* provide sufficient capacity for intending passengers on buses. Evidence from Ferrytoll suggests that usage will actually decline slightly. In the long term, the greatest threat is a change in Aberdeen City Council's policies, specifically their policy towards city centre car parking. Aberdeenshire have no direct influence over this, suggesting a much stronger role for regional policy making (NESTRANS).
- 10.7 Ellon Park and Ride is attracting residents from a relatively small catchment area – much smaller than the natural hinterland of the site (the whole of Buchan). Half of users are residents of Ellon itself, primarily the fringe residential areas where bus services are less frequent. The majority of the remainder live in nearby small rural settlements, not served by regular bus at all.
- 10.8 The scheme appears to be attracting a high proportion of people that would be prepared to use local buses for certain journeys, if only a reasonable bus services was available from their home. This is a market bus operators struggle to capture in most remote rural areas. Ellon's success here is very important – if repeated elsewhere, it could grow the rural bus market dramatically.
- 10.9 “Micro Park and Rides” provide a way of scaling conventional Park and Ride down, creating a local facility with more features than a bus stop, but less infrastructure than a conventional Park and Ride site. Sites would be served by existing bus services. Such schemes would allow a very focused, localised and individualised marketing approach, with emphasis on one core service from one local place to the most important destination (Aberdeen). The current network/area-wide approach to marketing is largely irrelevant to people living in discrete rural areas with very limited regular bus services. Micro Park and Rides could also provide a key interchange between local socially orientated Demand Responsive Transport and the commercial bus network.
- 10.10 Micro Park and Rides are a high-risk strategy. There are several unknowns: How important is service frequency? How critical are the socio-demographic characteristics of the area? Can sufficient bus capacity be provided for peak-only travel? These risks tend to be short-run because of the capital-intensive nature of Micro Park and Rides – if there is no requirement for additional services, the additional long-run revenue implications are minimal.
- 10.11 Successful Micro Park and Ride could be revolutionary: the potential to deliver growth in a rural bus network, with real mode shift at the times of day when the highways into Aberdeen are closest to capacity.
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A.0 User Survey Form



Ellon Park and Ride User Survey



Surveyor _____ Time _____ Date _____ ID _____

Write any additional comments below:

1 **Good morning** (afternoon). I'm from the **University of Aberdeen**. We are doing a survey for **Aberdeenshire Council and Stagecoach**, to find out how we can improve the **Park and Ride**. Would you spare a few minutes to answer some questions? Show identification.

If **yes**, go to 2. If **no**, end interview, and log refusal with any reason given.

2 **What is your home postcode?** Or address if unknown.

Full Postcode Address

3 **Did you start your journey today from home?**

Yes Go to 5. No Go to 4.

4 Where did you start your journey today?

Town or address

5 Where are you going?

Aberdeen city centre Other (write)

6 What is the purpose of today's journey? **Tick all that apply.**

Commuting <input type="checkbox"/>	Health <input type="checkbox"/>	Sports/entertainment <input type="checkbox"/>
Business <input type="checkbox"/>	Other personal business <input type="checkbox"/>	Day trip <input type="checkbox"/>
Education <input type="checkbox"/>	Visiting friends/relatives <input type="checkbox"/>	Escort <input type="checkbox"/>
Shopping <input type="checkbox"/>	Eating/drinking <input type="checkbox"/>	Other (write) <input type="text"/>

7 **How often do you make this journey using Ellon Park and Ride?** Ignore exceptional events such as holidays. Tick one box.

4 or more times per week 2-3 times per week Once per week
 At least once per month Less frequently Other (write)

8 **How did you travel to the Park and Ride site today?** Ask about any non-bus part of the journey. Tick one box.

Car/van parked at site Car/van drop off (lift) Taxi/mini-cab
 Bus (interchange only) Bicycle Walk
 Other (write)

9 **Why did you first use Ellon Park and Ride?** Write reason.

10 Do you always use Ellon Park and Ride to make this journey?

Yes Go to 11. No Go to 13 (over).

11 Do you have any realistic alternatives to using Ellon Park and Ride for this journey?

Yes Go to 12 (over). No Go to 14 (over).

12 What alternatives could you use?

... **Why don't you use them?** Provide separate reason against each mode. Go to 14.

Mode	Reason for not using
Car/van driver <input type="checkbox"/>	
Car/van passenger <input type="checkbox"/>	
Another Park and Ride <input type="checkbox"/>	
Bus (normal stop) <input type="checkbox"/>	
Other (write) <input type="text"/>	

13 **How else do you travel to...**(destination)?

... **How often? ... Why do you use this** (mode)? Provide separate reason and frequency against each mode.

Mode	4+ per week	2-3 per week	1 per week	1+ per month	Less frequent	Not regularly	Reason
Car/van driver <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Car/van passenger <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Another Park and Ride <input type="checkbox"/>							
Bus (normal stop) <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (write) <input type="text"/>	<input type="checkbox"/>						

14 **What is the best aspect of the Park and Ride site, and why?** Write in one aspect, with reasons if not self-explanatory.

15 **What is the worst aspect of the Park and Ride site, and why?** Write in one aspect, with reasons if not self-explanatory.

16 **What is the best aspect of the bus service and journey, and why?** Write in one aspect, with reasons if not self-explanatory.

17 **What is the worst aspect of the bus service and journey, and why?** Write in one aspect, with reasons if not self-explanatory.

18 **Now considering the whole journey, including travel to and from the bus, what one thing would you change and why?** Write in one aspect, with reasons if not self-explanatory.

Close interview. Complete the following questions (by estimation if required).

19 Number of people travelling together with interviewee.

20 Age of interviewee. Estimate and tick one box.

16-29 30-44 45-59 60 or over

21 Sex of interviewee. Tick one box.

Male Female