Travel Plan Report

Clackmannanshire Council

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1 Introduction

1.1 Travel Plans

The way we travel has a huge impact on our economy, health, environment, and the resources available for future generations. For example, the transport sector accounted for about 17% of Scotland's greenhouse gas emissions in 2003 (excluding air travel and maritime) – which is up 6% on 1990 levels. This sector also generates other environmental impacts like airborne and waterborne pollutants. For this and other reasons it is easy to understand why sustainable travel is important.

Of course, the challenge is to put sustainable transport measures into practice. For example, providing the information and support to help people to choose to cycle, walk or take public transport more often than they currently do.

Travel Plans put forward ways to encourage more sustainable travel choices and help reduce the problems that arise from using cars unnecessarily. More specifically, a Travel Plan contains a package of measures tailored to the needs of individual sites. The overall aim of a travel plan is to promote more sustainable travel choices and reduce reliance on the car.

This document presents the results and analysis of an extensive staff survey conducted at Clackmannanshire Council in Autumn 2007 and highlights appropriate travel planning recommendations arising from the data. The aim of the document is to add value to travel planning work already in progress at the Council and, the analysis presented here should be incorporated into the relevant travel plans.

The next section provides some background information on the Council and describes how this project came about.

1.2 Background - Clackmannanshire Council

Clackmannanshire Council is one of 32 unitary authorities in Scotland which came into being in 1996 following Local Government etc. (Scotland) Act 1994.The area is divided into 5 wards and has 18 elected Councillors. With a population of approximately 48,000 Clackmannanshire is Scotland's smallest county. The Council provides its constituent population with a range of services including, transport, education, social work, housing, waste management, conservation, leisure and economic development.[1]

Located in central Scotland approximately 30 minutes from Edinburgh and Glasgow the car dominates Clackmannanshire's transport system; a total of 85% of all journeys to work are

[1] www.clacks.gov.uk/

made by car or van – the highest proportion in Scotland.[2] Car journeys also dominate journeys for shopping and leisure. As the number of car journeys increase across Scotland the number of cars on the roads in Clackmannanshire looks set to increase. As a major local employer Clackmannanshire is in a unique position to really turn this around and in doing so improve local congestion, air quality and accessibility as well as improving the health and well being of the local population and their employees.

Scottish Government targets

Scotland's new National Transport Strategy, published in 2006, identifies the need for the public sector to demonstrate leadership in the development of travel plans and sets a target for all local authorities in Scotland to have operational travel plans by April 2008 and the expectation that these travel plans to develop over time with increasingly successful results.[3]

In March 2006 The Clackmannanshire Sustainability Initiative was launched at the Parklands Centre, Alva and the Council has already had success in delivering a number of sustainable achievements including the promotion of the Alloa / Stirling passenger rail service, improvements to Alloa Town Centre – which has seen a 50% reduction in traffic, a large reduction in number of accidents and public transport and pedestrian enhancements, development of National Cycle Network - Route 76 and the Core Path Network and implementation of Safer Routes to Schools and School Travel Plans.

The Council is now looking to ensure that their 'own house is in order' and the introduction of a green travel plan is one of the key aims of their forthcoming Sustainability Strategy.

This travel planning report provides Clackmannanshire Council with the opportunity to build on existing travel planning work and to refine mechanisms to ensure travel to and from its sites is managed in an environmentally sustainable way and that staff are given the necessary means to make more informed travel choices.

Travel Plan Assistance

In October 2007 Clackmannanshire Council successfully applied to the Energy Saving Trust for a grant for the conduct of travel planning research - in the form of an extensive staff survey – to support the development and implementation of effective travel plans for Clackmannanshire Council's four largest sites. This document presents the results and analysis of that survey and highlights appropriate travel planning recommendations arising from the data. Clackmannanshire Council is keen to develop travel plans that – when implemented - help to promote safe, healthy and sustainable travel patterns to all users and that will minimises the overall environmental impact of travel to and from Council buildings.

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[2] Statistical Bulletin Trn/2006/1 Transport across Scotland in 2003 and 2004: some Scottish Household Survey results for parts of Scotland: http://www.scotland.gov.uk/Publications/2006/01/10095727/28

[3] Scotland's National Transport Strategy: http://www.scotland.gov.uk/Publications/2006/12/04104414/0

Following an inception meeting on the 16th October, 2007, a proposal was prepared for the use of the consultancy time allocated by the Energy Saving Trust to Clackmannanshire Council to assist in the development of these travel plans.

The key aims for this project are to:

- Support and add value to existing work being carried out by Clackmannanshire Council and its partners; and
- Assist Clackmannanshire Council to develop and implement a travel plan for its main offices/sites, with particular reference to issues highlighted during the inception meeting.

Whilst this work represents an important body of research that will support the development and implementation of an effective travel plan, it should be noted that the deliverables associated with this project do not include a travel plan. We understand the client will incorporate our research into one or more Council Travel Plan/s at a later date. We also recommend that a thorough site access-audit is carried out for all key Council sites as this research will further support the development of robust, site-specific travel plans for each location.

Whilst Clackmannanshire Council has a number of existing policies for managing staff travel, it recognises the need to explore ways to alter current travel behaviour by promoting travel awareness and modal shift through a travel plan.

The Principal Transportation Planner, Lesley Deans, has been assigned responsibility for managing the implementation of the Travel Plan.

It is recognised that actions taken as a result of the travel plans this work will inform have the capacity to support ISO 14001 Environmental Management accreditation for the Clackmannanshire Council.

1.3 Benefits of Travel Planning for Clackmannanshire Council

Based on Vipre's experience with other organisations, travel planning has the potential to generate a number of benefits for Clackmannanshire Council, including:

- **Supporting better accessibility through development of transport options** - encouraging the use of alternative modes of transport, such as cycling, walking, public transport and trip sharing. Promotion of these modes of transport can reduce the number of single occupancy vehicles entering an area and can significantly reduce parking and traffic congestion issues. In turn, this can help to improve the general amenity and accessibility of the site.
- **Justifying the cost of improvements to transport infrastructure** – A travel plan can help to generate a more persuasive case to justify expenditure by transport providers and other bodies on new or improved transport infrastructure or initiatives.

- **Improved employee catchment** - Improved site access can help to support staff recruitment and retention.
- **Increasing standing amongst the community** – A focus on accessibility and sustainable transport has the potential to bring significant positive attention to the site and improve standing with the local authority and the local community.
- **Social & environmental responsibility** - Many organisations are looking for ways to demonstrate their commitment to corporate social and environmental responsibility. Active support for the goals of a Travel Plan can help demonstrate this commitment such as through the reduction of transport-related carbon dioxide (CO_2) emissions.
- **Ensuring compliance with Section 75 Agreements** – A Travel Plan will help meet the requirements of a 'section 75 agreement' under The Town and Country Planning (Scotland) Act 1997 required by a planning authority. A Travel Plan is a good way for a local authority to clearly demonstrate it is leading by example when specifying such a section 75 agreement as part of a planning condition.
- **Environmental accreditation** - Active participation in and support for sustainable transport measures can help Clackmannanshire Council to achieve and maintain environmental accreditation such as ISO 14001 Environmental Management accreditation.

Benefits to Council staff, visitors and suppliers are likely to include:

- **Decreased cost and improved choice** – Despite popular belief, many transport alternatives to single occupancy car are actually less expensive. In fact, the Council may be in a position to negotiate subsidies for particular travel options. This generates improved choice and adds up to an attractive package of benefits that the Council can offer current and prospective employees and contractors.
- **Better workplaces** - The journey to work can be a large part of a working day. Making the Council's workplaces easier to reach can help to improve staff motivation and morale, and ultimately, staff effectiveness. Promoting active travel such as walking and cycling can also have a positive impact on employee health and fitness and can reduce employee absence through sick leave.
- **Improving site accessibility and amenity** - Reducing on-site car traffic can improve both the accessibility and amenity of Clackmannanshire Council workplaces, thereby making them more attractive places for employees, contractors, customers and suppliers.
- **Improved road safety** - A Travel Plan can help reduce the likelihood of accidents on and near the site, by increasing the awareness and care taken by those accessing the site and by improving its amenity for walkers and cyclists.

1.4 Structure of This Document

This report represents the output of the travel planning process that was implemented through the Energy Saving Trust's grant scheme. The remainder of the report is structured as follows:

- Section 2 outlines the programme of work for this travel planning project;
- Section 3 presents the results and analysis of the staff travel survey for each of the 4 largest sites and for the Council as a whole.
- Section 4 highlights key strengths and weaknesses identified in the survey;
- Section 5 puts forward a set of recommendations based on the survey;
- Appendix 1 provides links to some useful national programmes;
- Appendix 2 provides details of the dataset and methodology for the CO_2 calculations.

2 Programme of Work

The following table provides a high-level timeline for ongoing travel-planning work at Clackmannanshire Council.

Table 1 - Proposed Timeline for Ongoing Travel Planning Work

Time	Task	Description	Who
October 2007	Inception meeting	Relevant background information gathered, key objectives of project agreed upon and work plan for the project developed	Vipre & Clackmannanshire Council
Late October/ early November 2007	Staff travel survey	Survey developed & administered	Vipre
Mid- Late November 2007	Analysis of staff travel survey including post-code mapping and calculation of estimated CO_2 emissions	Analysis survey results and pull out relevant data to generate geographic post-code maps for staff and an estimate of staff CO_2 emissions from travel.	Vipre
Late November 2007	Preparation of travel planning report	Survey analysis and key recommendations derived from the analysis are presented in a summary report	Vipre
Early December 2007	First draft of report is issued to Clackmannanshire Council for comment	Review of first draft by Clackmannanshire Council and any comments passed to Vipre	Vipre & Clackmannanshire Council
December 2007	Final Draft of Summary Report is issued	Comments are incorporated into the draft summary report and final draft is prepared	Vipre

Table 2 below provides more detail about how Vipre used the available consultancy time.

Table 2 - Breakdown of Vipre's Consultancy Time

Task	Description	Output	Time	Who	When
Inception	Meet to discuss work-plan. Develop work plan.	Relevant background information gathered. Draft work-plan prepared.	**½ day**	Vipre UK	Oct 07
Staff Survey	Survey developed & administered across all council sites[4]. Analysis carried out for all sites, with a breakdown of useful data for 4 largest sites (where relevant).	Information about current travel patterns & preferences analysed.	**2 days**	Vipre UK	Oct - Nov 07
Post-Code Mapping	Map home post-codes of staff to show proximity to work, public transport services and / or each other.	GIS maps (up to 6) - for staff from Kilncraigs, Greenfield and Lime Tree sites, as well as for the Kelliebank Depot.	**1 day**	Vipre UK	Nov 07
Calculate CO_2 emissions	Extract relevant data from survey results and calculate[5] estimated CO_2 emissions.	Estimated CO_2 emissions.	**1 day**	Vipre UK	Nov 07
Preparation of a Summary Report	Summary Report to include details of work conducted and output generated.	Summary Report	**2 days**	Vipre UK	Nov 07
Final meeting	Present Summary Report to client.	Client accepts Summary Report.	**½ day**	Vipre UK	Dec 07
		Total	**7 days**		

[4] N.B. Assumes that any paper-based surveys will be printed and distributed by Clackmannanshire Council, and that Council will undertake any data entry associated with these surveys. Also assumes Council will provide incentive prizes to encourage staff participation in the survey.
[5] Carbon calculations will be indicative only.

3 Appraisal of Existing Conditions

3.1 Post-code Mapping

A set of maps showing the home locations of Clackmannanshire Council employees has been produced through this project. The information provided by these maps is useful in identifying the spatial relationships between staff homes and their place of work. In particular, the maps help to highlight opportunities and barriers associated with walking, cycling, public transport and car-sharing for current staff.

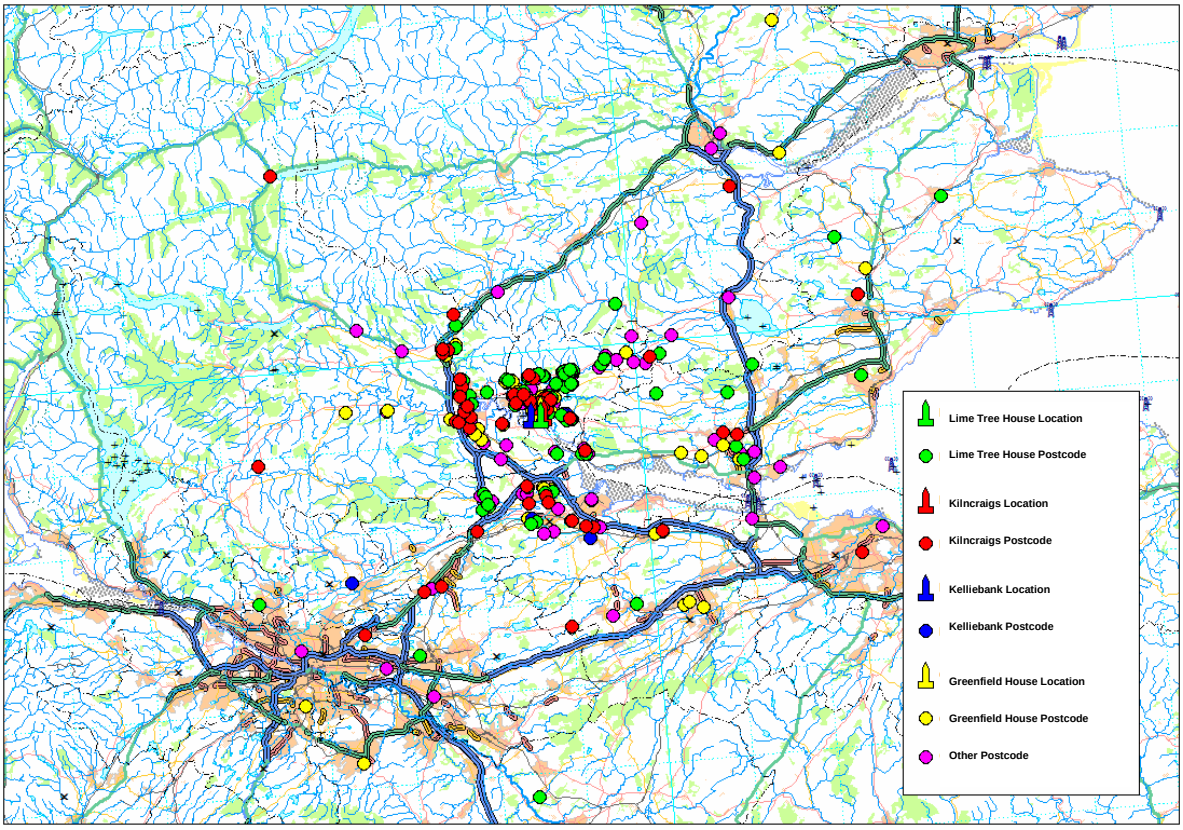

Figure 1- Employee home locations for Clackmannanshire Council

Figure 1 shows the home locations of all Clackmannanshire employees surveyed. More detailed maps for individual work-sites are included in subsequent sections, alongside site-specific survey data.

3.2 Staff Travel Survey

In November 2007 Clackmannanshire Council, in conjunction with Vipre UK, conducted a staff travel survey. The aim was to establish a baseline of current travel behaviour and to find out what kinds of measures would encourage staff to make sustainable travel choices. This data should be used to inform the development of Clackmannanshire Council's travel plan.

Results from staff based at the Council's four largest sites; Lime Tree House, Greenfield House, Kilncraigs and Kelliebank were analysed separately to allow for a more tailored approach to travel planning at these sites and the analysis for each site is presented here along with some background information on each site.

Results for the Council as a whole are also presented here and should be used to direct the content of a Council wide policy on sustainable travel and travel planning that may be applied to all Council sites.

3.3 Lime Tree House

Lime Tree House is located in central Alloa and is one of Clackmannanshire Council's two main offices (the other being Greenfield House). A total of 337 employees are based at Lime Tree House and work within Services to People. 30% of the workforce are male and 70% female. 77% of staff work full time and 23% of staff work part time.

Post Code Cluster Mapping

Figure 2 zooms in to look at the relationships between home and work locations for Lime Tree House in more detail. As we can see, while employees travel to Lime Tree House from a wide catchment area including Dumfermline, Glasgow and West Lothian, the majority of employees are travelling from a much smaller catchment area within Clackmannanshire.

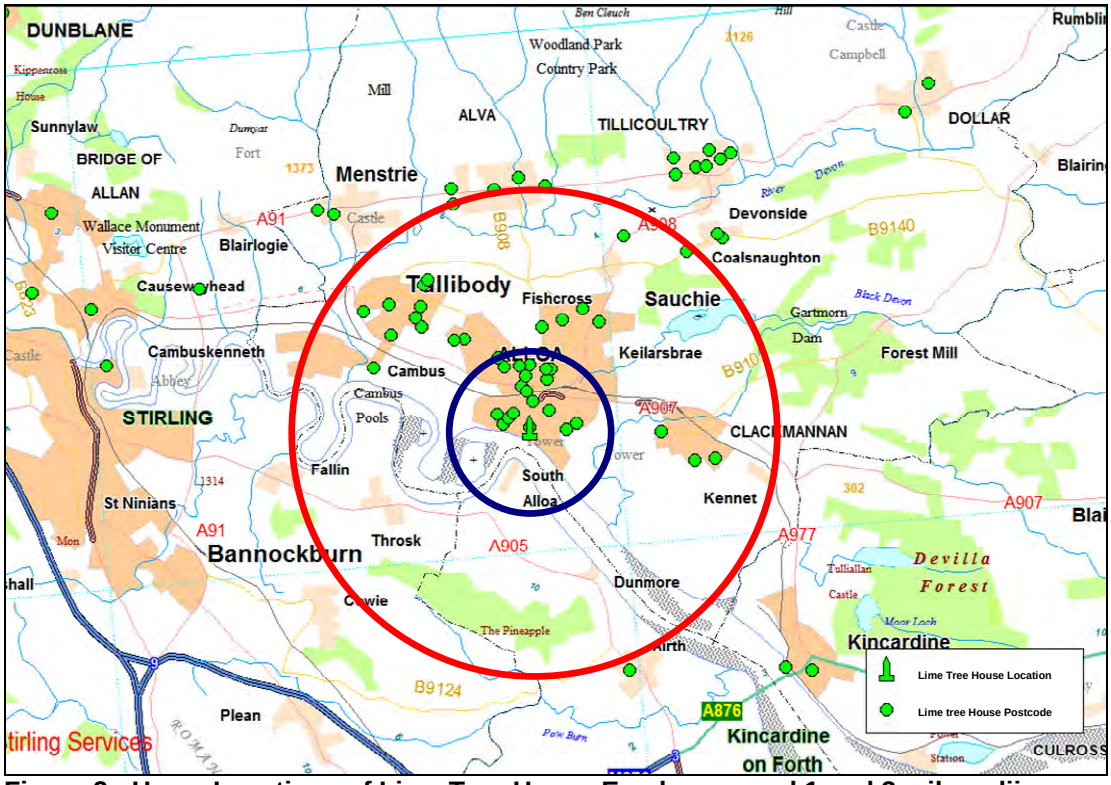

Figure 2 - Home Locations of Lime Tree House Employees and 1 and 3 mile radii

Figure 2 shows employee locations and I and 3 mile radii from Lime Tree House (blue and red circles respectively). A distance of 1- 2 miles is generally considered to be a comfortable walking distance for most adults and a distance of 3 miles a comfortable cycling distance.

Figure 2 shows that approximately 50% of staff surveyed at Lime Tree House live within the conurbations of Alloa, Tullibody or Clackmannan, all within a 3 mile radius of Lime Tree House. Approximately 20 % live within a 1 mile radius of the site. Assuming that appropriate routes are available this mapping would suggest that distance is not a barrier to sustainable

travel for most staff at Lime Tree House who with appropriate routes are in a good position to be able to walk or cycle or make use of public transport services running to Alloa.

Staff living outside of Alloa may well have opportunities to enter into car-sharing arrangements. There appears to be good potential for such arrangements amongst the residential clusters in the towns in surrounding Alloa, Tullibody and Clackmannan as well as opportunities amongst staff living travelling from further afield. There are, for example, clusters in Denny and Dunfermline. Alternatively, at least some of the staff-members may be able to travel by train and then bus to access Lime Tree House[6].

Staff Travel Survey

A total of 99 responses were collected, representing 29% of staff employed at the site. 23% of respondents were men and 77% were women, in a Chi Squared test this ratio was not found to differ significantly from the actual ratio of males to females in the workforce.[7]

9% of males responded that they were part time workers and 91% that they were full time workers. This breakdown is exactly the same as that seen in the actual proportion of male full time and part time workers in the workforce. The proportion of part time female workers and full time female respondents (18% and 82% respectively) however, was found to differ significantly from the actual proportion of female part time and full time workers (30% and 70% respectively) in a Chi Squared test.

It is important to recognize that this analysis is really only a very rough indication of how accurate a representation of the workforce the respondents to this survey were. In reality there are a number of possible biases that could potentially exist in any survey data set and the best way to minimize these is to ensure as high a response rate as possible. For the purposes of this report it is worth being aware of potential biases (work patterns may be an important determinant of female travel behaviour but then again we have no evidence to suggest that this is so) and where possible to strengthen the data presented here with observational studies (e.g. car counts, bicycle counts) or spot surveys as staff arrive at work.

The survey first looked to establish what kind of barriers (if any) staff at Lime Tree House might face in using sustainable transport options to get to work. By identifying what kind of barriers staff might face Clackmannanshire Council can target their travel planning measures effectively. These findings should be complimented by a comprehensive site audit.

Shift pattern can be a barrier to using sustainable transport options if staff are travelling outside the hours of peak public transport provision and Figure 3 shows when respondents begin and finish their working day. As we can see 95% of respondents start their day between 8-10 am and finish between 4 and 6 pm. We know that in reality this is a smaller proportion as respondents that work full time are over represented in this survey. However,

[6] Rail routes direct to Alloa will be available from Summer 2008 following the re-opening of the Stirling-Alloa-Kincardine line to passenger traffic.

[7] Chi Squared test with Yates Correction: $X^2=2$, $p>0.05$

Chi Squared test with Yates Correction: $X^2=6.3$, $p<0.05$

even when we look at the start and finish times of respondents that work part time we see that 75% start their day between 8 and 10 am and 81 % replied that they finished between 4 and 6pm. So for the majority of respondents (and we can fairly safely assume for the majority of the workforce) start and finish times are broadly coincident with the peak periods of public transport provision. The hours between 7:30 am and 7pm also represent a period during which public spaces are generally busy and therefore present a lower risk in terms of personal safety for those staff using public transport services or walking and cycling. Furthermore, Figure 4 shows the flexibility of working hours at Lime Tree House. As can be seen in Figure 4 over 80% of respondents replied that they had some flexibility in their arrival and/or departure times. Such flexibility is a huge advantage amongst public transport users as it allows workers the opportunity to build their working day around the most convenient public transport services. Work patterns should therefore not present a barrier to using sustainable transport options.

Some staff will be limited in their travel options and may have to rely on their car due to health or working constraints. 3% of respondents replied that they had a disability that affected their method of travel to work and 27% of respondents replied that they were 'Essential Car Users'. An effective workplace travel plan is likely to work by ensuring that car parking spaces are available when required by high priority users.

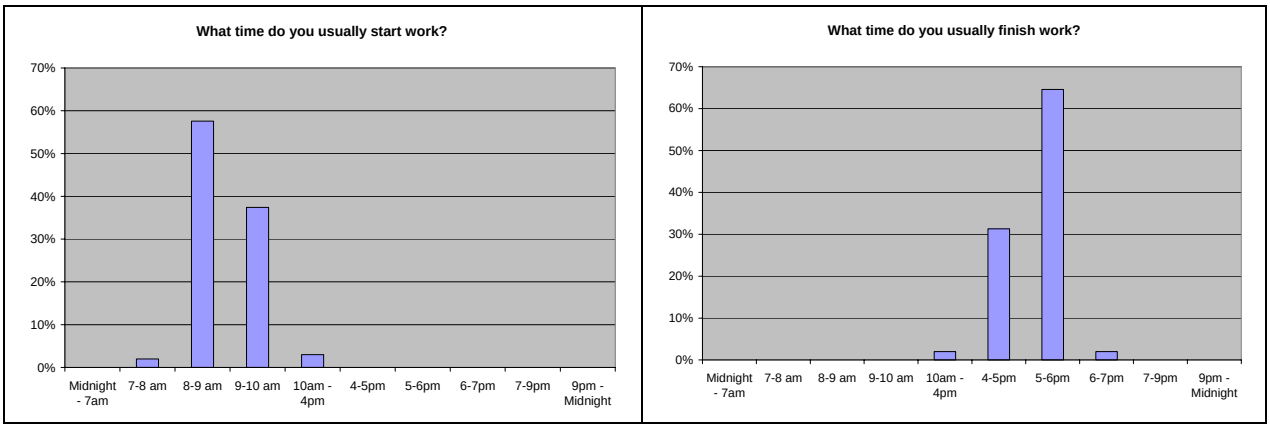

Figure 3- Shows when respondents at Lime Tree House start and finish their working day.

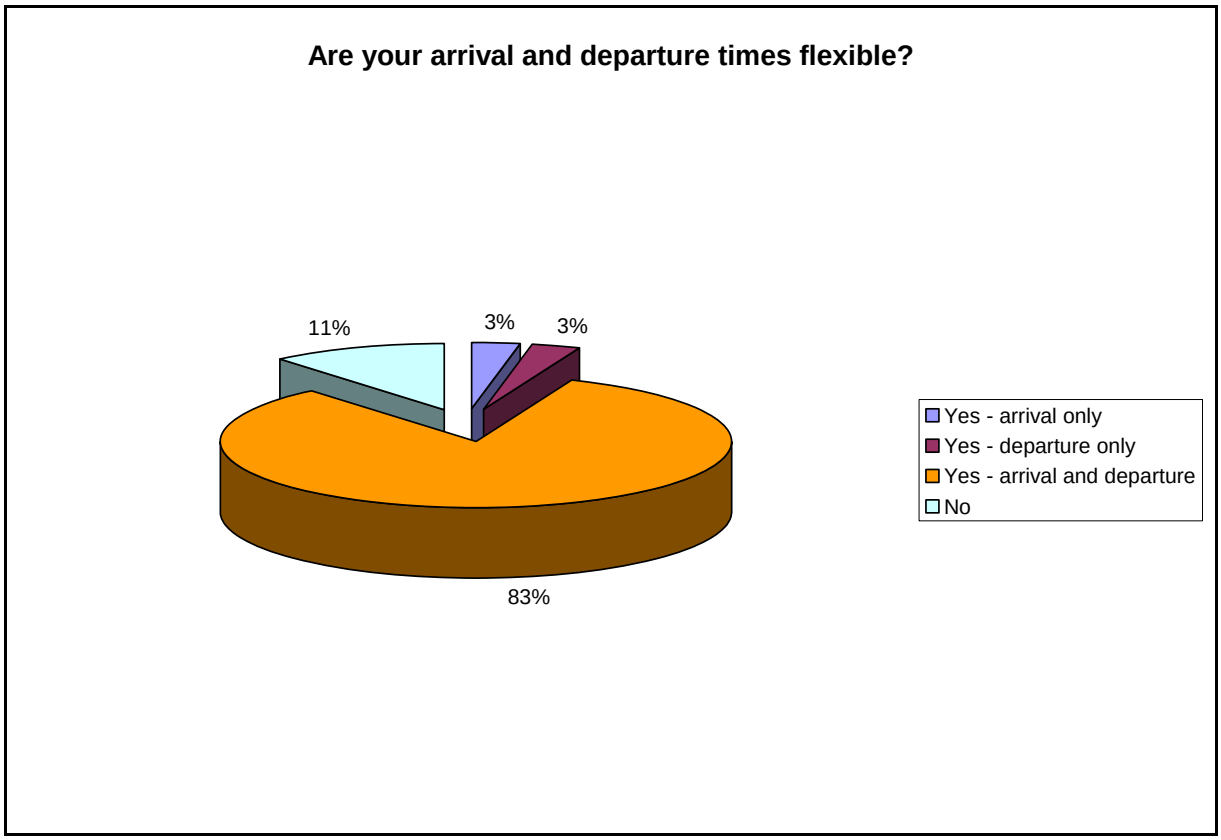

Figure 4: Flexibility in working times at Lime Tree House

The survey then established how far respondents were travelling to work. Respondents were asked to estimate how far their journey to work was (Figure 5). 73% responded that they travelled less than 10 miles to work each day and of those, 35% responded that they travelled 3 miles or less to work each day. A journey of 3 miles is generally considered to be comfortable cycling distance for most adults and 1-2 miles a reasonable walking distance. A journey of less than 10 miles is usually feasible by public transport particularly within an urban area such as Alloa where the concentration of population means that bus and train services tend to be well developed. For the majority of respondents then, distance should not represent a major barrier to sustainable transport use. For commutes over 10 miles access to appropriate public transport services may become more difficult but suitable public transport is often still available and car sharing opportunities may be available. Efforts should therefore be made to ensure that these staff are fully informed about the public transport options and Car sharing opportunities available to them and encouraged to use these services.

Respondents were asked if they owned a roadworthy cycle 58% replied that they did not, including 52% of those that lived 3 mile or less from work. This barrier can easily be removed by helping staff purchase a cycle through a salary sacrifice scheme (see http://www.hmrc.gov.uk/green-transport/travel-plans.htm for more details).

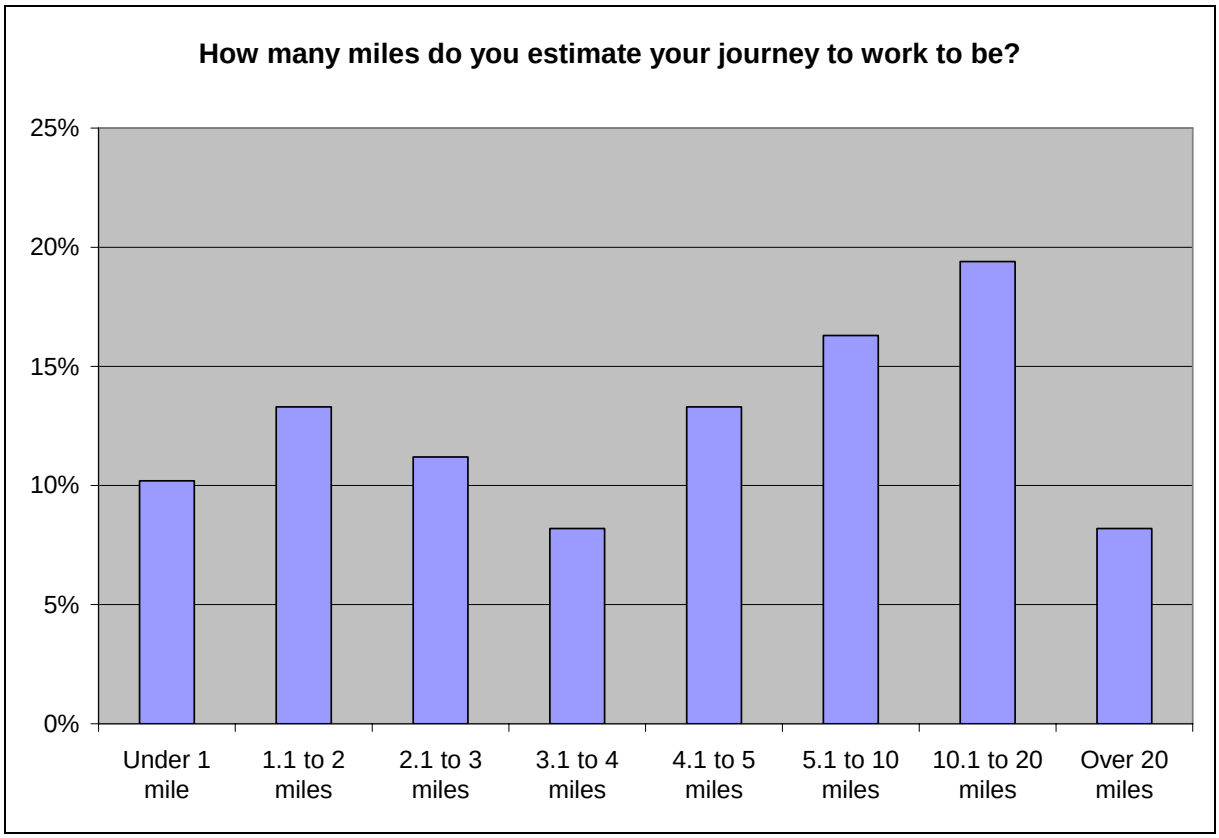

Figure 5- Shows how far respondents estimated their journey to work to be

The survey then looked at current travel patterns and examined the factors that influence current travel patterns.

Figure 7 shows how respondents at Lime Tree House typically travel to work. As can be seen the vast majority of respondents travel by car; a total of 92% of commutes are made by car and of those 88% were single occupancy car journeys. Such a high proportion of car journeys is atypically high even for Clackmannanshire which has the highest proportion of commutes by car in the country and is certainly high when compared with national figures (Figure 6). Given that the Council is currently working to significantly reduce congestion in Alloa this is disappointing. Only 6% of respondents replied that they walked to work (with 2% replied that they walked/ cycled and took the car) yet as we have seen 35% of respondents replied that lived within 3 miles of their workplace. Significantly no respondents replied that they took the bus or train to work despite 73% living within less than 10 miles of the site. This may be due to a lack of appropriate routes, a lack of knowledge about public transport routes to work or a combination of both.

When respondents were asked if the occasionally travelled to work by a different method 17% of single occupancy car drivers replied that they occasionally walked, cycled took the bus or travelled as a passenger. While this is not a huge number, if these respondents could be persuaded to make their commute by these modes more frequently the proportion of

single occupancy car journeys to Lime Tree House amongst respondents to this survey would fall from 78% to 65%.

Mode	**Walk**	**Cycle**	**Bus**	**Train**	Car/van Passenger	Car/van Driver	**Car/van Total**	Other	Total (%)
National	**13**	**2**	**12**	**3**	8	60	**68**	2	100
Clackmannanshire	**8**	**0**	**5**	**0**	10	75	**85**	1	100

Figure 6- Employed adults not working from home - usual method of travel to work: 2003/2004[8]

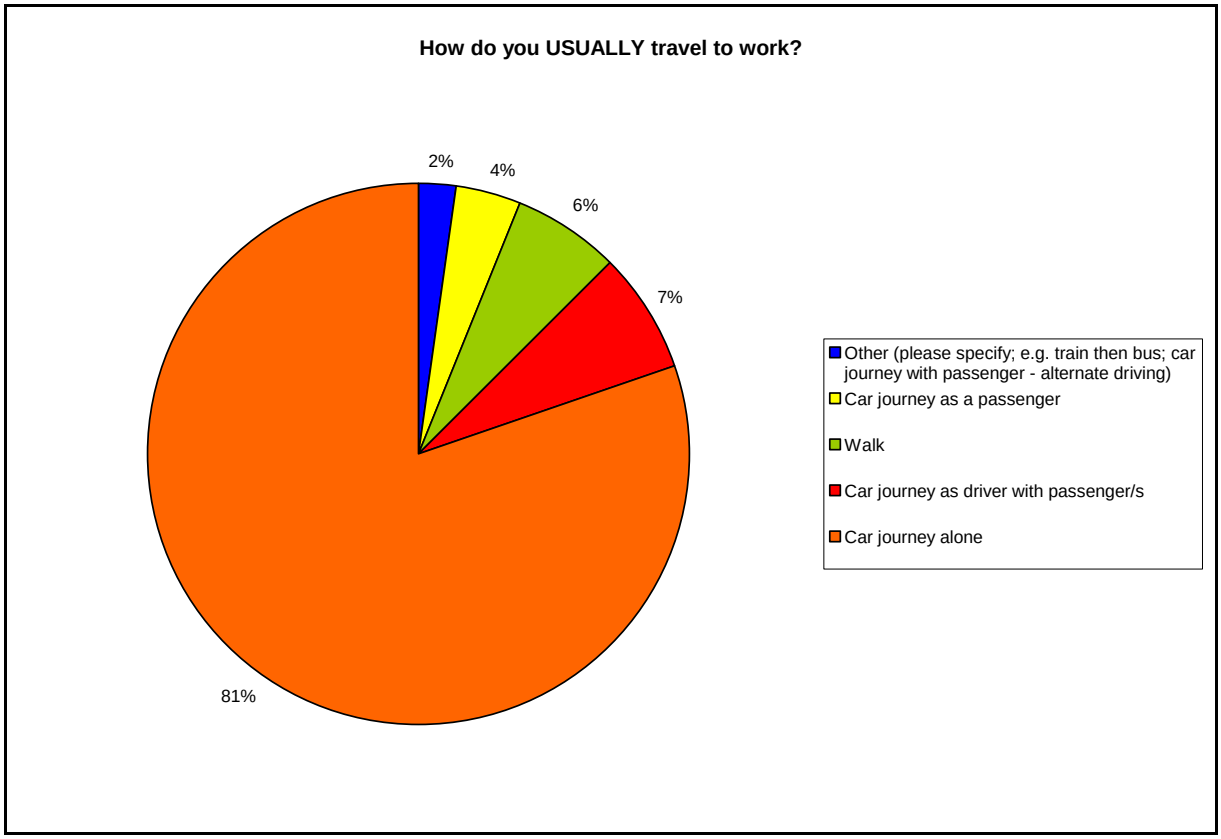

Figure 7- Shows how respondents at Lime Tree House usually travel to work

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When respondents were asked what the important factors were in their decision to drive to work (Figure 8) the most popular options were ‘time savings’, ‘convenience’ and ‘unrealistic public transport alternatives’. Factors such as ‘health reasons, ‘cost savings‘, ‘Taking my

[8] Source: Scottish Household Survey data 2003/04, Scottish Executive, http://www.scotland.gov.uk/Publications/2006/01/10095727/28

children to school/nursery/daycare' and 'I have a lot to carry' were not cited as frequently. It is useful to bear these 'drivers' in mind when marketing the travel plan to staff.

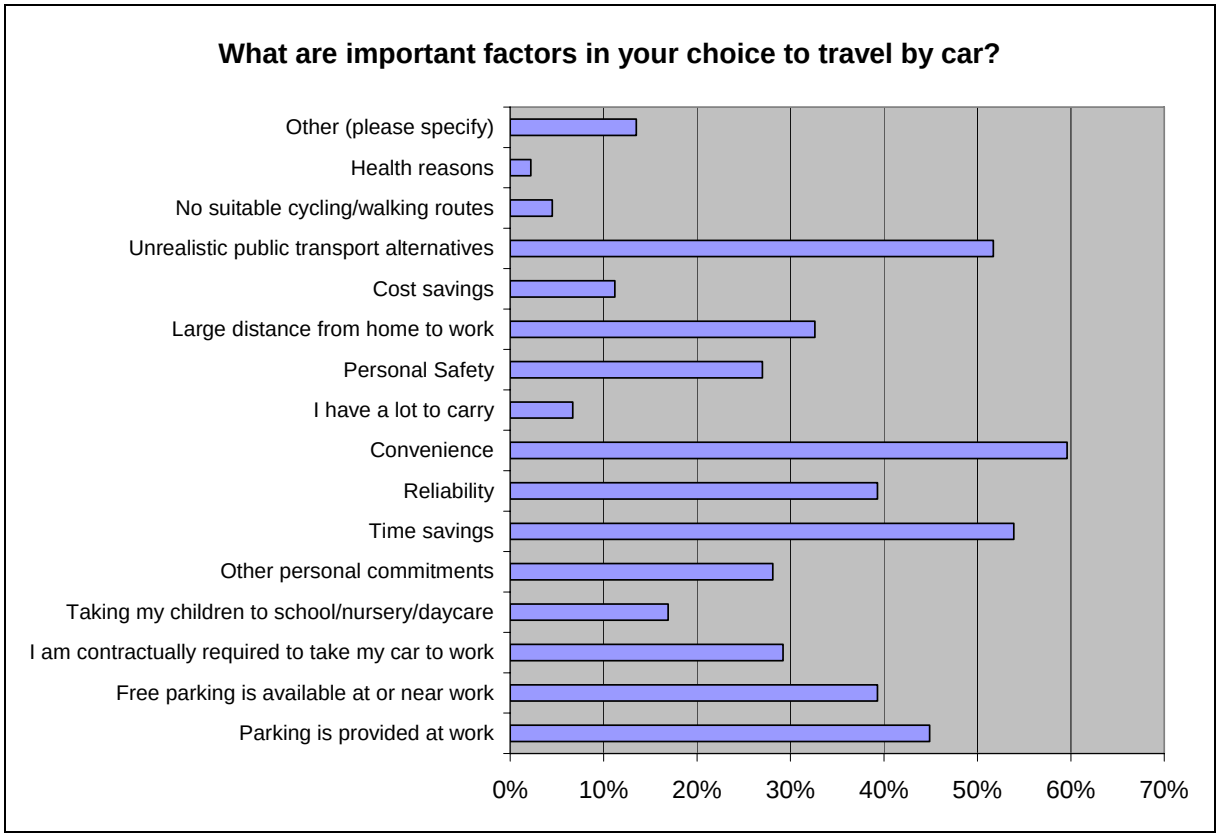

Figure 8- Factors influencing decision to drive to work

When staff believe they are required to use their car for work related travel or for personal business during the day they can feel there is no other option but to drive to work. When asked how often they were required to use their car for business travel, 35% of respondents replied that they either never used their car for business travel or did so once a week or less (Figure 9). 39% of respondents replied that they did so at least 4 times a week. This represents a high volume of business travel. By encouraging staff to use sustainable business travel options and by providing pool cars Lime Tree House could not only make a significant economic saving in terms of mileage claims but may also be able to free up workers from the need to drive their car to work each day. 20% of respondents who replied that they undertook business travel four times a week or more replied that they would consider not driving to work if pool cars were available for use and a further 14% replied that they would do so from time to time. This works out at a potential reduction in single occupancy car use of 11% if followed through.

Figure 10 shows that most respondents (52%) replied that they used their car on personal business during the working day once a week or less. 27% replied that they used their car for personal business more than four times a week. By providing staff with information and encouraging the use of local amenities Lime Tree House may be able to cut down on the need for staff to use their car for personal business during the day. The provision of pool bicycles at Lime Tree House is positive and Lime Tree House should ensure that staff are aware of this resource and encouraged to use make use of it. In some cases where local amenities are not within comfortable walking and cycling distance it may be appropriate to offer common goods such as snacks and toiletries for purchase at a workplace shop.

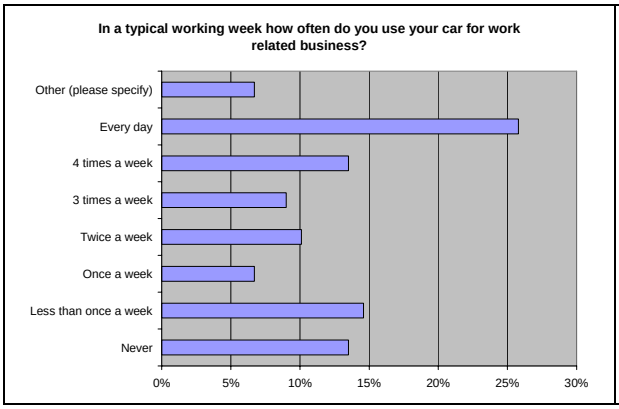

Figure 9- Business travel

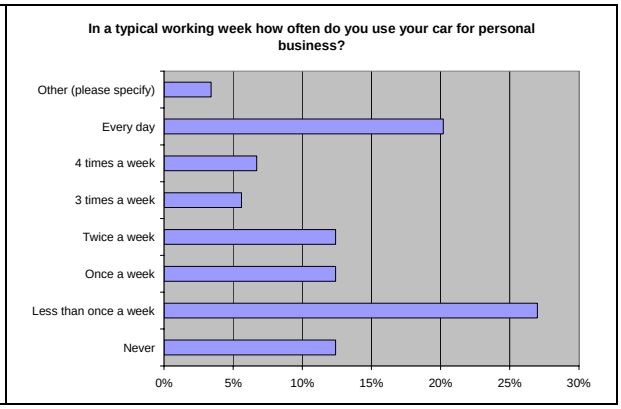

Figure 10- Personal travel during the working day

93% of those that commuted to work by car told us that they parked in the work provided car park. Figure 11 shows how frequently those reported finding a place to park a problem. The majority of respondents reported that they had found finding a place a problem at some stage and 12% reported that they always found it a problem or did so on a regular basis. 34% of staff felt that the council staff and operations would benefit from more effective car park management. A good travel plan can provide more effective car parking management and can ensure that spaces are available for those that most need them.

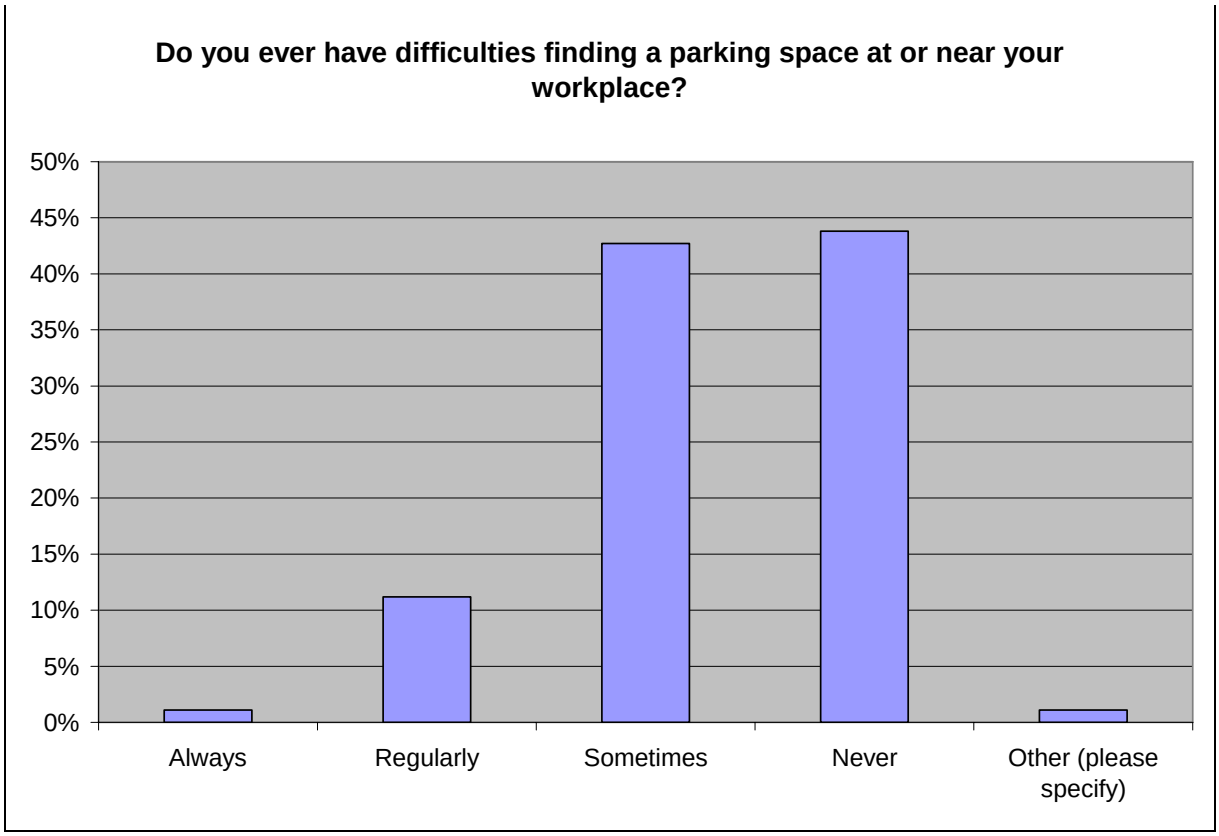

Figure 11- Reported frequency of difficulty in finding a car parking space

As well as establishing a picture of current travel behaviour the survey was interested in finding out what kind of measures might encourage staff to consider sustainable transport options. Again these results will help optimise travel planning measures for Lime Tree House. Respondents were asked to consider which incentives might encourage more people to car share (Figure 12). Over 70% of respondents rated the following incentives as likely to be either 'Effective' or 'Very effective'; 'A guaranteed lift home in an emergency' and 'A guaranteed lift home if your car share partner lets you down'. 'Incentives for car sharing (reward scheme etc)', 'Online car share scheme to help car-sharers' and 'Help finding someone to car share with' were also popular. It encouraging to note here that when respondents were asked if they would be willing to car share if a colleague with a suitable location and similar work pattern could be found 41% replied that they would and 8% replied that they already did so.

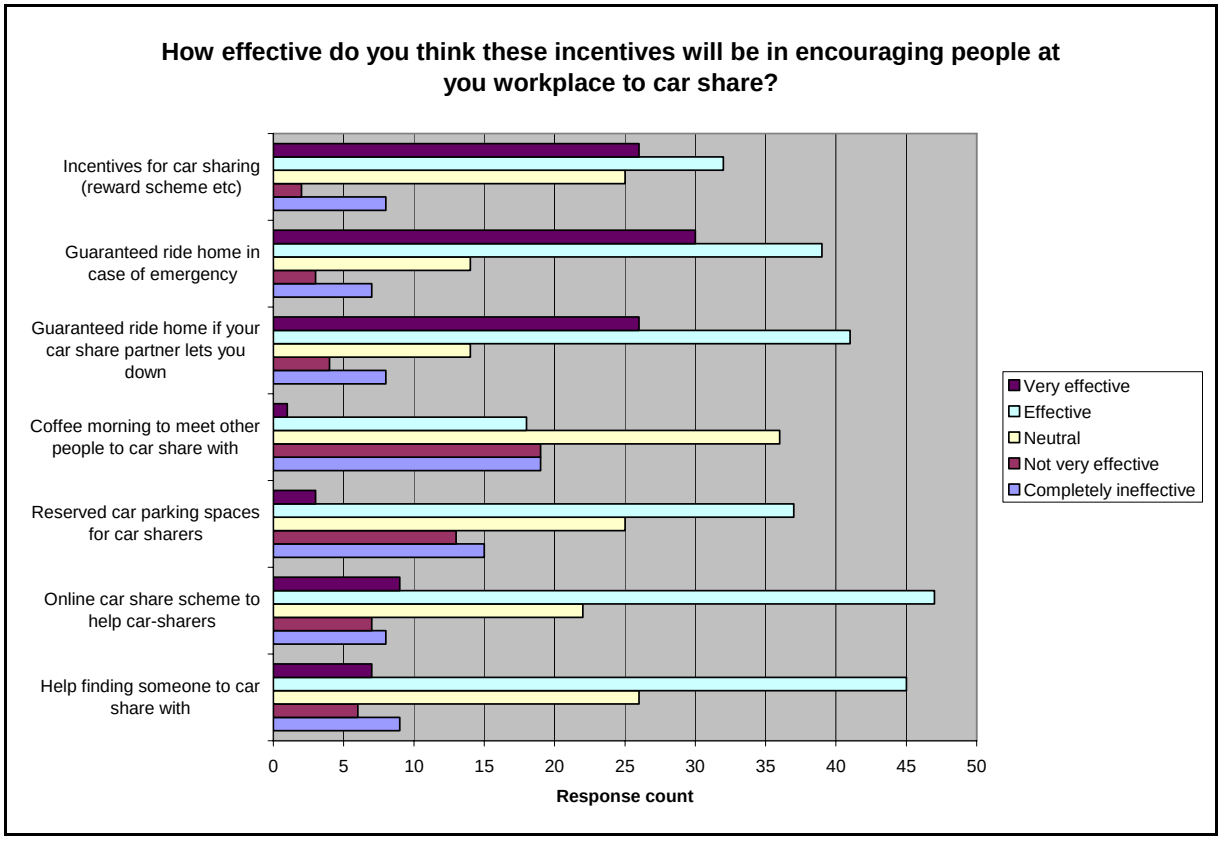

Figure 12- Encouraging staff to car share

Respondents were then asked to consider which incentives might encourage more people to walk or cycle to work (Figure 13). Over 70% rated the following option as likely to be either 'Highly Effective' or 'Effective'; 'A guaranteed ride home in an emergency'. Other popular options were 'Improved footpaths/cycle paths to work' and 'Shower Changing Facilities available to use'.

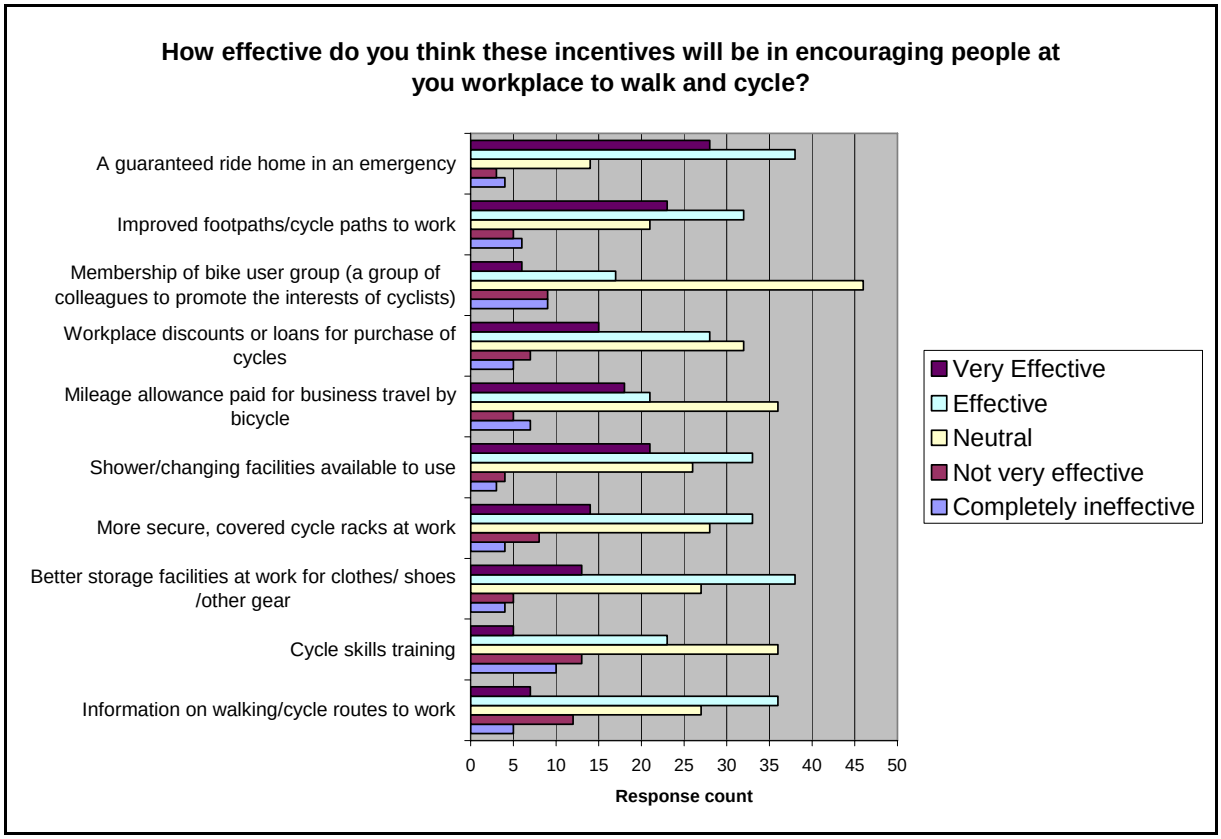

Figure 13- Rating incentives to encourage more people to walk or cycle to work

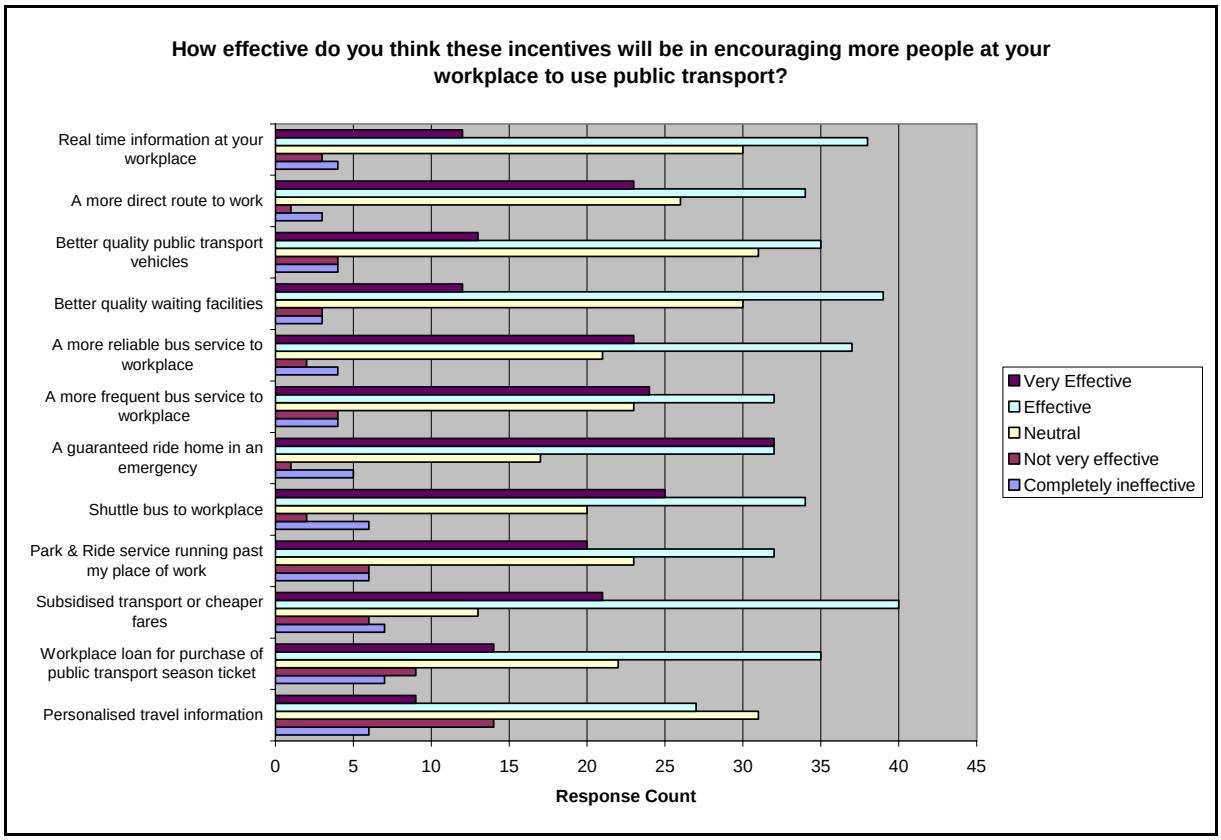

Figure 14- Encouraging staff to use public transport

Respondents were then asked to consider which incentives might encourage more people to use public transport to get to work (Figure 14). Over 70% rated the following options as likely to be either 'Highly Effective' or 'Effective'; 'A guaranteed ride home in an emergency' and 'Subsidised transport or cheaper fares'.

Next respondents were asked to consider what kind of measures might reduce car travel at their workplace. Over 75% of respondents rated the following measures as likely to be either 'Highly Effective' or 'Effective'; 'Formalised work from home scheme' and 'Flexitime policy (e.g. compressed hours)'.

Finally, respondents were asked how satisfied they were with their journey to work. While 79% of respondents were 'Fairly satisfied' or 'Very satisfied', 54% felt their journey could be more environmentally friendly, 39% would like their journey to be quicker and 37% would like their journey to be cheaper. These results are encouraging as they suggest that commutes to Lime Tree House can really be improved by travel planning measures. Sustainable transport options are often quicker than car travel, are often cheaper and are certainly more environmentally friendly.

This 'wish list' should be borne in mind when marketing the benefits of sustainable travel options.

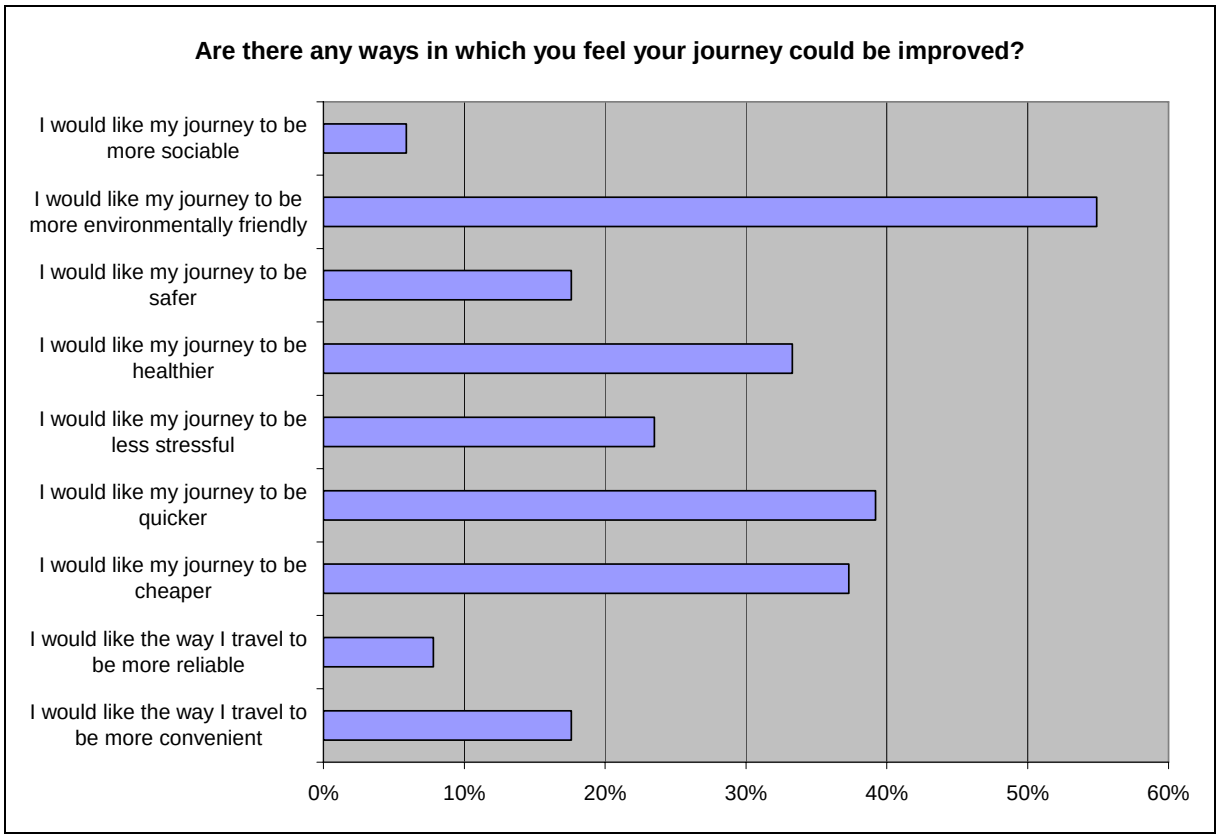

Figure 15- Ways in which staff felt their journey could be improved

3.4 Greenfield House

Greenfield House is located in Alloa town centre and is the second of Clackmannanshire Council's two main offices (the other being Lime Tree House). A total of 168 employees are based at Greenfield House and work within the Chief Executive's Services and Corporate Development Services. 39% of the workforce are male and 61% female. 92% of staff work full time and 18% of staff work part time.

Post Code Cluster Mapping

A map of Greenfield House employee home locations has been produced. The information provided by these maps is useful in identifying the spatial relationships between staff homes and Greenfield House. In particular, the maps help to highlight opportunities and barriers associated with walking, cycling, public transport and car-sharing for current staff.

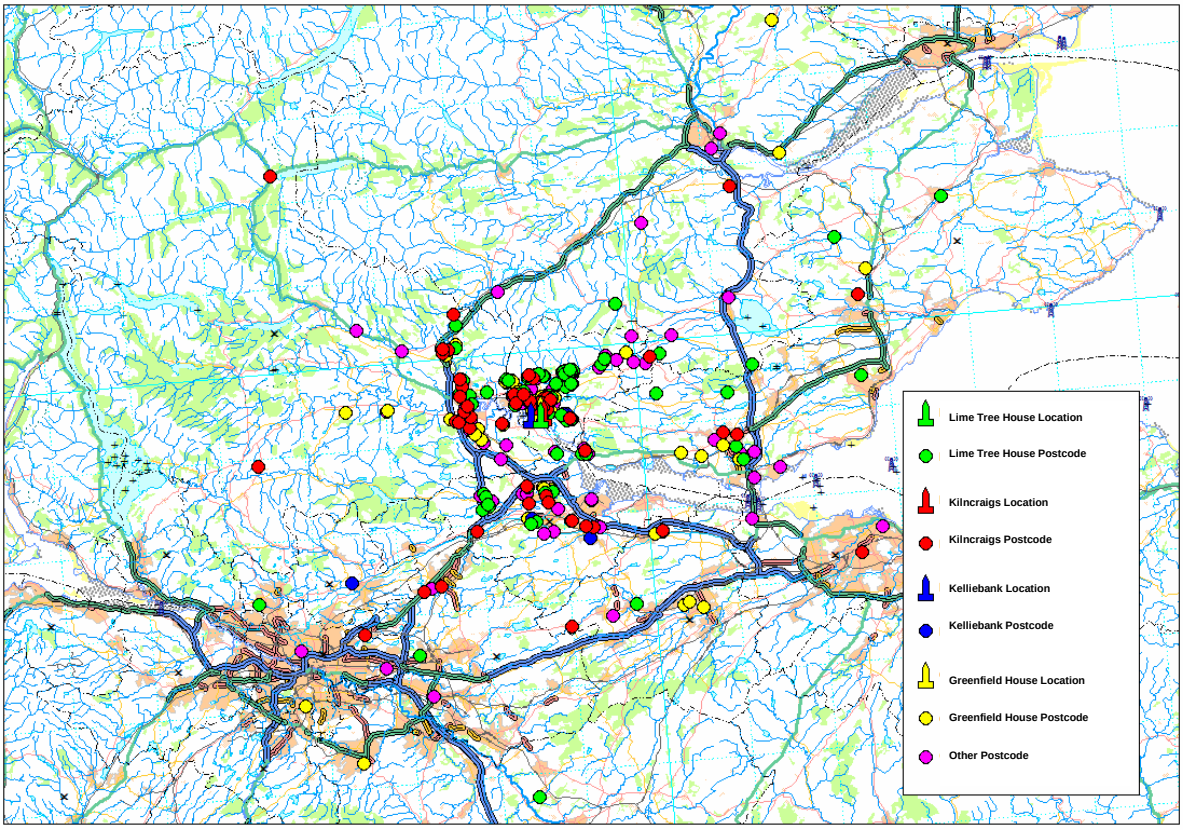

Figure 16- Employee home locations for Clackmannanshire Council

Figure 16 shows the home locations of all Clackmannanshire employees surveyed. The yellow circles show the home locations of Greenfield House employees. As we can see while employees travel to Greenfield House from a wide catchment area the majority of employees are travelling from a much smaller catchment area within Clackmannanshire.

Figure 17 zooms in to look at the spatial patterns in this area in more detail.

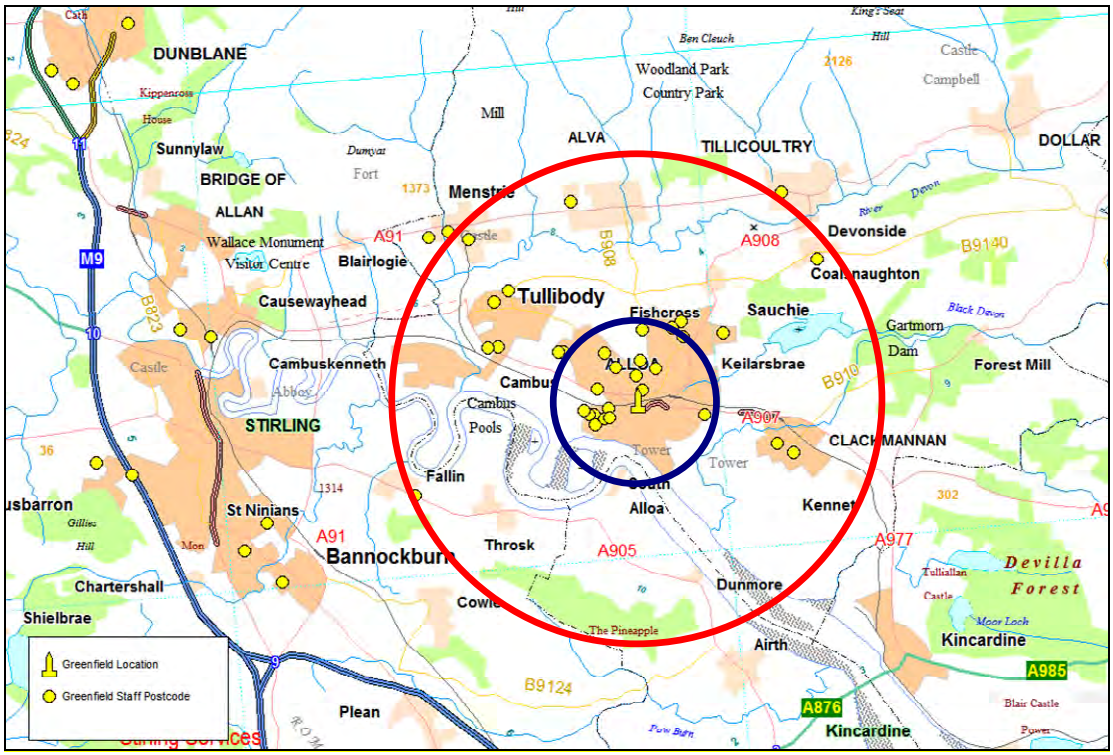

Figure 17 - Home Locations of Greenfield House Employees and 1 and 3 mile radii

Figure 17 shows employee locations and I and 3 mile radii from Greenfield House (blue and red circles respectively). A distance of 1- 2 miles is generally considered to be a comfortable walking distance for most adults and a distance of 3 miles a comfortable cycling distance.

Figure 17 reveals that approximately 50% of staff surveyed at Greenfield House live within the conurbations of Alloa, Tullibody or Clackmannan and within a 3 mile radius of the site. And approximately 20% of staff live within a 1 mile radius of the site. This mapping suggests that distance should not be a barrier to sustainable travel for a large proportion of staff at Greenfield House and, if appropriate routes are available, the majority of employees are likely to be in a position to walk, cycle or make use of public transport services to access Greenfield House.

Staff living outside of Alloa may well have opportunities to enter into car-sharing arrangements with a higher potential existing around the residential clusters in the towns surrounding Alloa, Tullibody and Clackmannan. There may also be opportunities amongst staff travelling from further afield particularly those travelling from Stirling or Livingston. Alternatively, assuming that appropriate routes are available, at least some staff-members may be able to travel by train and then bus to access Greenfield House.

Staff Travel Survey

A total of 70 responses were collected, representing 42% of staff employed at the site. 44% of respondents were men and 76% were women, in a Chi Squared test this ratio was not found to differ significantly from the actual ratio of males to females in the workforce.[9]

There are no part time male workers at Greenfield House and our survey results reflected this, with 94 % of male respondents replying that they worked full time and 6% of respondents replying 'other' and indicating that they worked 6 days a week. 29% of female workers are employed on part time hours at Greenfield House, and 22.5% of female respondents to our survey replied that they worked part time. A Chi Squared test found the proportion of female respondents that worked part time did not to differ significantly from the actual proportion of female part time workers.[10]

The Chi Squared tests would appear to indicate that survey respondents are a good reflection of the workforce at Greenfield House. It is important, however, to recognize that this analysis is only a rough indication as to how accurate a representation of the workforce respondents to this survey were. There are in fact a number of possible biases that may exist in any given survey data set that we have not tested here. For example, it may be that staff who cycle to work are more likely to respond to the survey than car drivers. The best way to minimize these biases is to ensure as high a response rate to your survey as possible and to strengthen the data presented here with observational studies (e.g. car counts, bicycle counts) or spot surveys as staff arrive at work.

The survey first looked to establish what kind of barriers (if any) staff at Greenfield House might face in using sustainable transport options to get to work. By identifying what kind of barriers staff might face Clackmannanshire Council can target their travel planning measures effectively. These findings should be complimented by a comprehensive site audit.

Shift pattern can be a barrier to using sustainable transport options if staff are travelling outside the hours of peak public transport provision and Figure 18 shows when respondents begin and finish their working day. As we can see 97% of respondents start their day between 8-10 am and 86% finish between 4 and 7 pm. For the majority of respondents then, start and finish times are broadly coincident with the peak periods of public transport provision. The hours between 7:30 am and 7pm also represent a period during which public spaces are generally busy and therefore present a low risk in terms of personal safety for those staff using public transport services or walking and cycling. Furthermore, Figure 19 shows the flexibility of working hours at Greenfield House. As we can see, over 80% of respondents replied that they had some flexibility in their arrival and/or departure times. Such flexibility is a huge advantage for those that would like to travel by public travel as it allows workers the opportunity to build their working day around the most convenient public transport services. The findings presented here would suggest that work patterns at

[9] Chi Squared test with Yates Correction: $X^2=0.85$, $p>0.05$

[10] Chi Squared test with Yates Correction: $X^2=1.74$, $p>0.05$

Greenfield House should not present a significant barrier to using sustainable transport options.

Some staff will be limited in their travel options and may have to rely on their car due to health or work related travel. The survey results suggest that these constraints apply only to a small section of the workforce at Greenfield House; 4% of respondents replied that they had a disability that affected their method of travel to work and 4% of respondents replied that they were 'Essential Car Users'. An effective workplace travel plan can benefit disabled and essential car users by ensuring that car parking spaces are available when required by these high priority users.

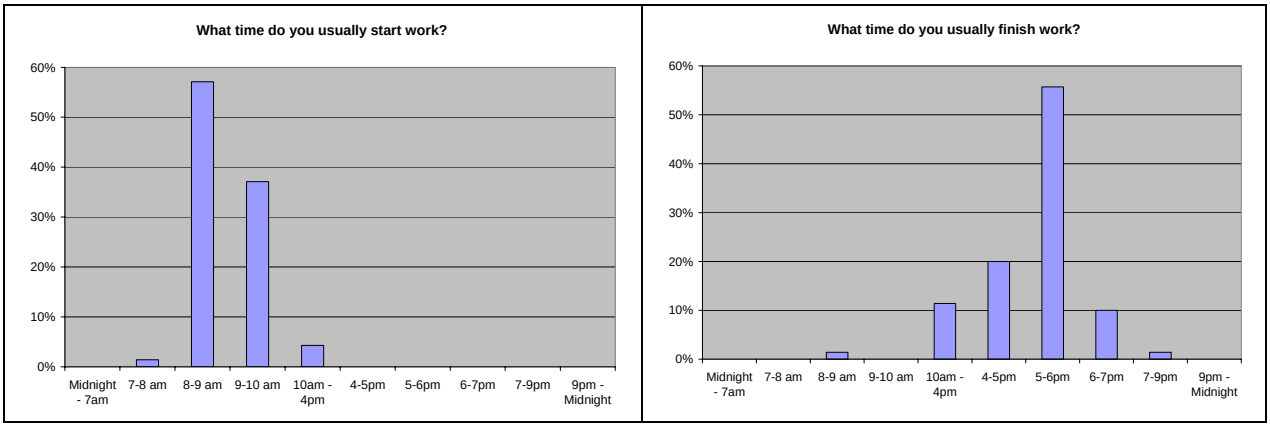

Figure 18- Shows when respondents at Greenfield House start and finish their working day.

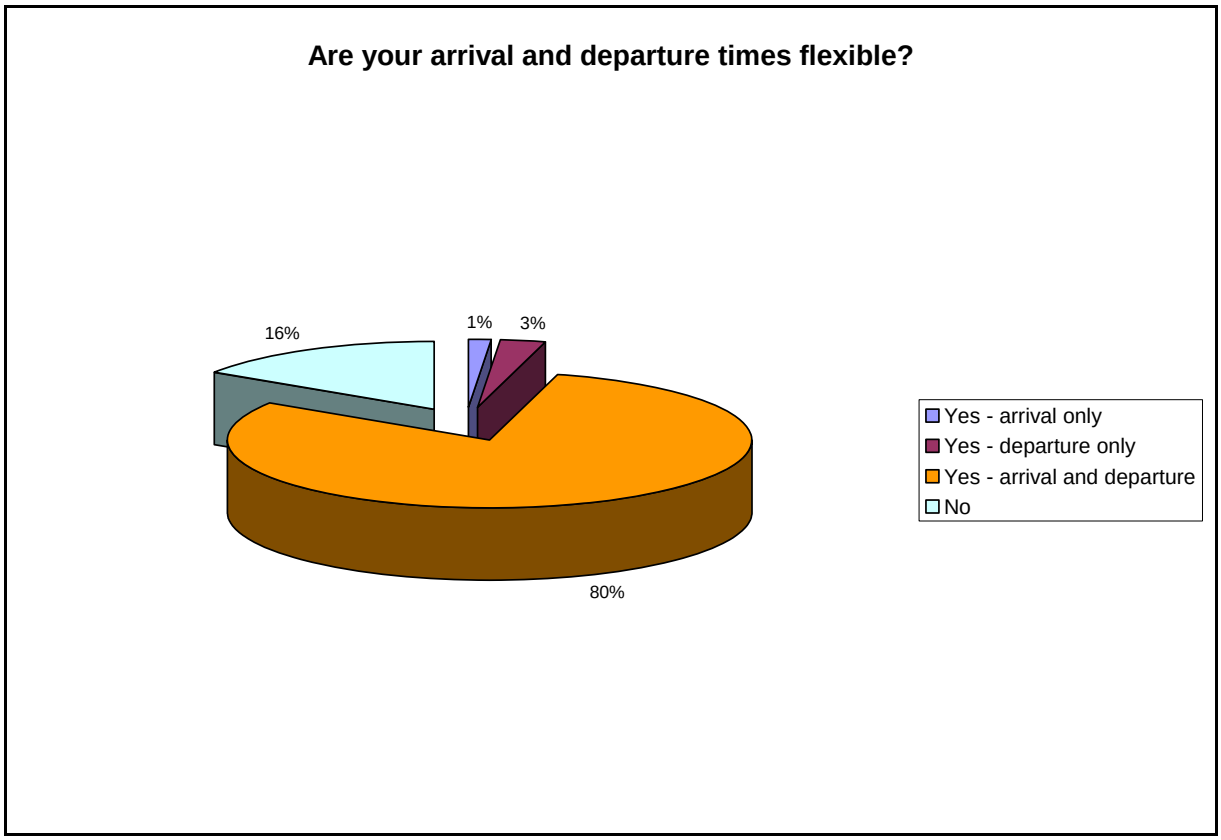

Figure 19: Flexibility in working times at Greenfield House

The survey then established how far respondents were travelling to work. Respondents were asked to estimate how far their journey to work was (Figure 20), 71% responded that they travelled less than 10 miles to work each day and of those, 59% responded that they travelled 3 miles or less to work each day. A journey of 3 miles is generally considered to be comfortable cycling distance for most adults and 1-2 miles a reasonable walking distance. A journey of less than 10 miles is usually feasible by public transport particularly within an urban area such as Alloa where the concentration of population means that bus and train services tend to be relatively well developed. For the majority of respondents then, distance should not represent a major barrier to sustainable transport use. For commutes over 10 miles access to appropriate public transport services may become more difficult but suitable public transport options are often still available and car sharing is also an option. Efforts should therefore be made to ensure that these staff are fully informed about the public transport options and car sharing opportunities available to them and encouraged to use these services.

Respondents were asked if they owned a roadworthy cycle 57% replied that they did not including 43% of those that they lived 3 mile or less from work. This barrier can easily be removed by helping staff purchase a cycle through a salary sacrifice scheme.

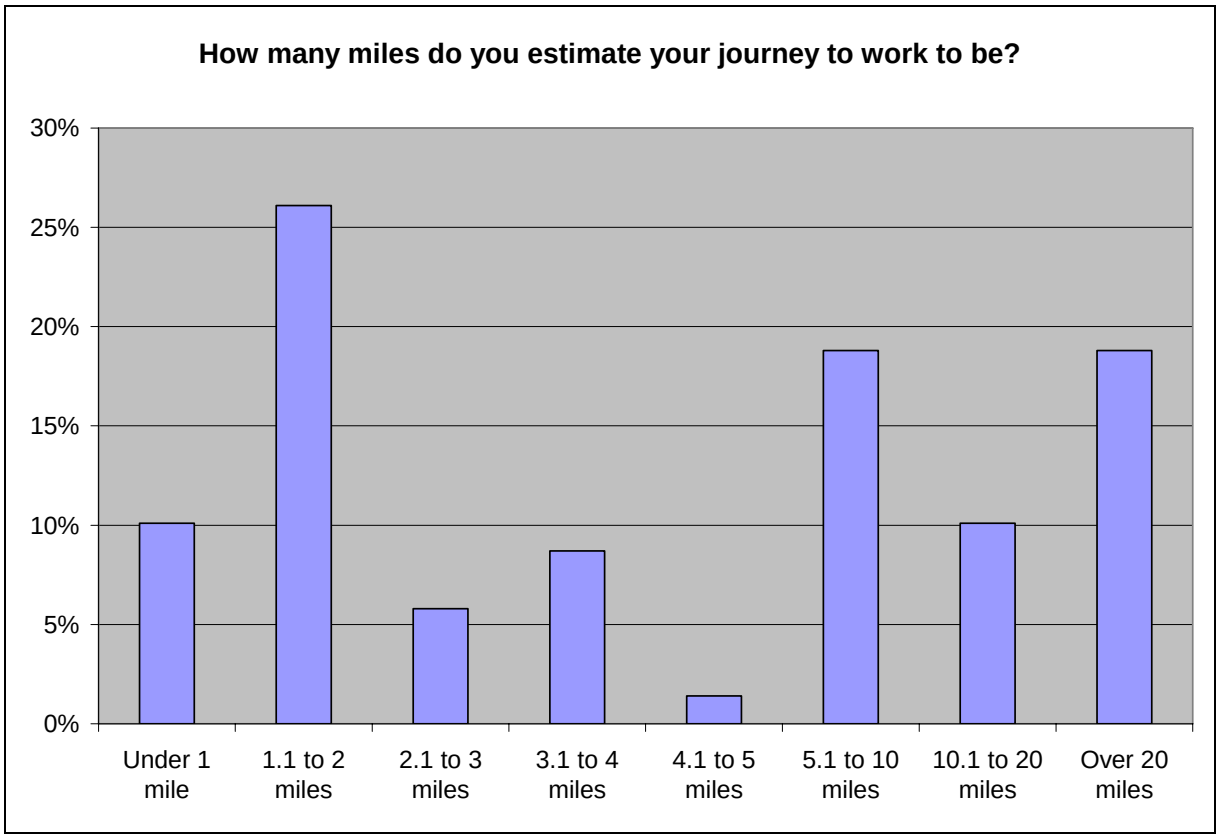

Figure 20- Shows how far respondents estimated their journey to work to be

The survey then looked at current travel patterns and examined the factors that influence current travel patterns.

Figure 20 shows how respondents at Greenfield House typically travel to work. As can be seen the vast majority of respondents travel by car; a total of 81% of commutes are made by car and of those 87% were single occupancy car journeys. Such a high proportion of car journeys is typical for Clackmannanshire however Clackmannanshire has highest proportion of commutes by car in the country and when we compare these results with national figures we can see that this is a particularly high proportion of journeys by car (Figure 21). Car commuters to Greenfield House include 69% of respondents who replied that they lived 3 miles or less from work (a comfortable walking or cycling distance). Given that the council is currently involved in a campaign to significantly reduce congestion in Alloa this is disappointing. Only 9% of respondents replied that they walked to work (less than the national average) and no respondents cycle yet as we have seen 42% of respondents replied that lived within 3 miles of their workplace. 6% respondents replied that they took the bus to work despite 71% living within less than 10 miles of the site. This may be due to a lack of appropriate routes, a lack of knowledge about public transport routes to work or a combination of both.

When respondents were asked if the occasionally travelled to work by a different method 23% of single occupancy car drivers replied that they occasionally walked, cycled took the

bus or travelled as a passenger. If these respondents could be persuaded to make their commute by these modes more frequently the proportion of single occupancy car journeys to Greenfield House could be reduced by as much as 23%.

Mode	**Walk**	**Cycle**	**Bus**	**Train**	Car/van Passenger	Car/van Driver	**Car/van Total**	Other	Total (%)
National	**13**	**2**	**12**	**3**	8	60	**68**	2	100
Clackmannanshire	**8**	**0**	**5**	**0**	10	75	**85**	1	100

Figure 21- Employed adults not working from home - usual method of travel to work: 2003/2004[11]

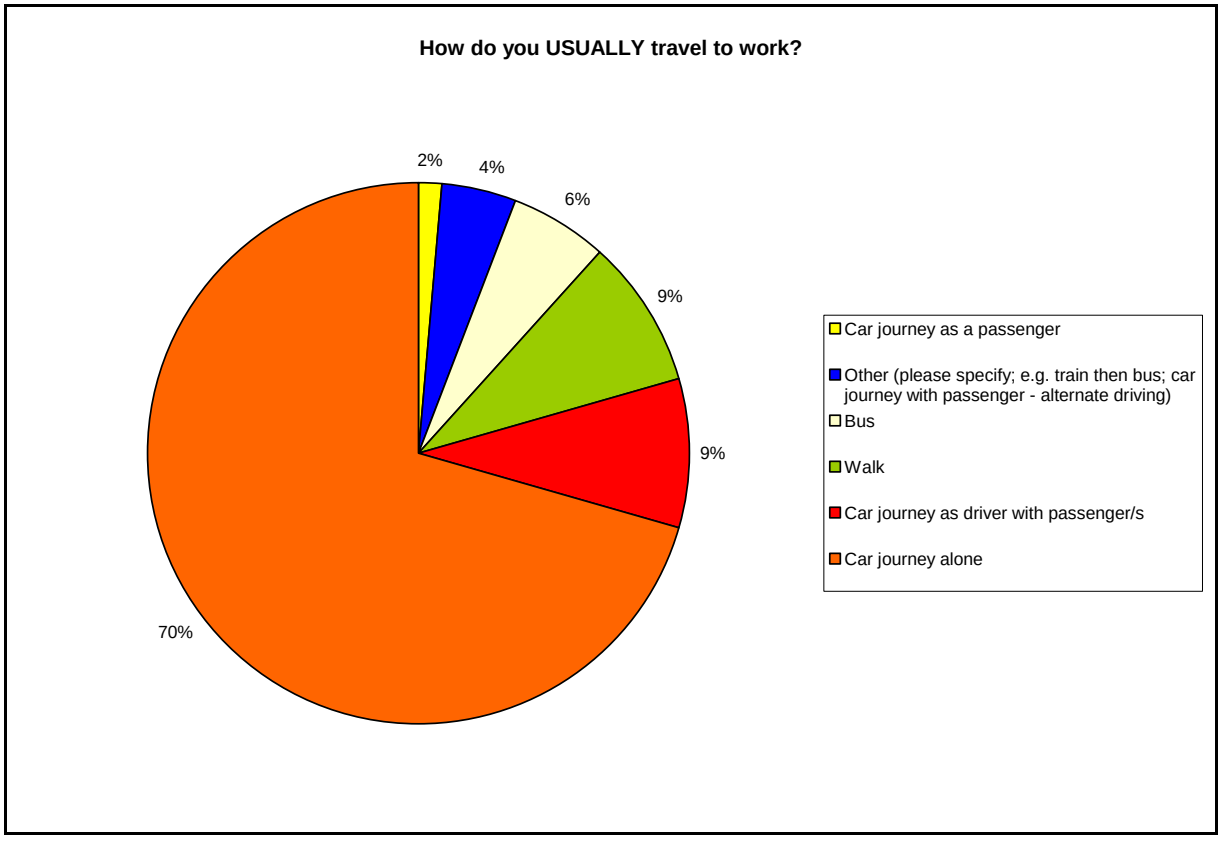

Figure 22- Shows how respondents at Greenfield House usually travel to work

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When respondents were asked what the important factors were in their decision to drive to work (Figure 23) the most popular options were ‘time savings’, ‘convenience’ and ‘unrealistic public transport alternatives’. Factors such as ‘health reasons, ‘cost savings‘, ‘I am

[11] Source: Scottish Household Survey data 2003/04, Scottish Executive, http://www.scotland.gov.uk/Publications/2006/01/10095727/28

contractually required to take my car to work' and 'I have a lot to carry' were not cited as frequently. 26% of respondents noted that 'Taking my children to school/nursery/daycare' was an important factor. If there is a significant proportion of staff with young children it may be worthwhile considering offering a workplace nursery. It is useful to bear all of these 'drivers' in mind when marketing the travel plan to staff and developing effective travel plan measures.

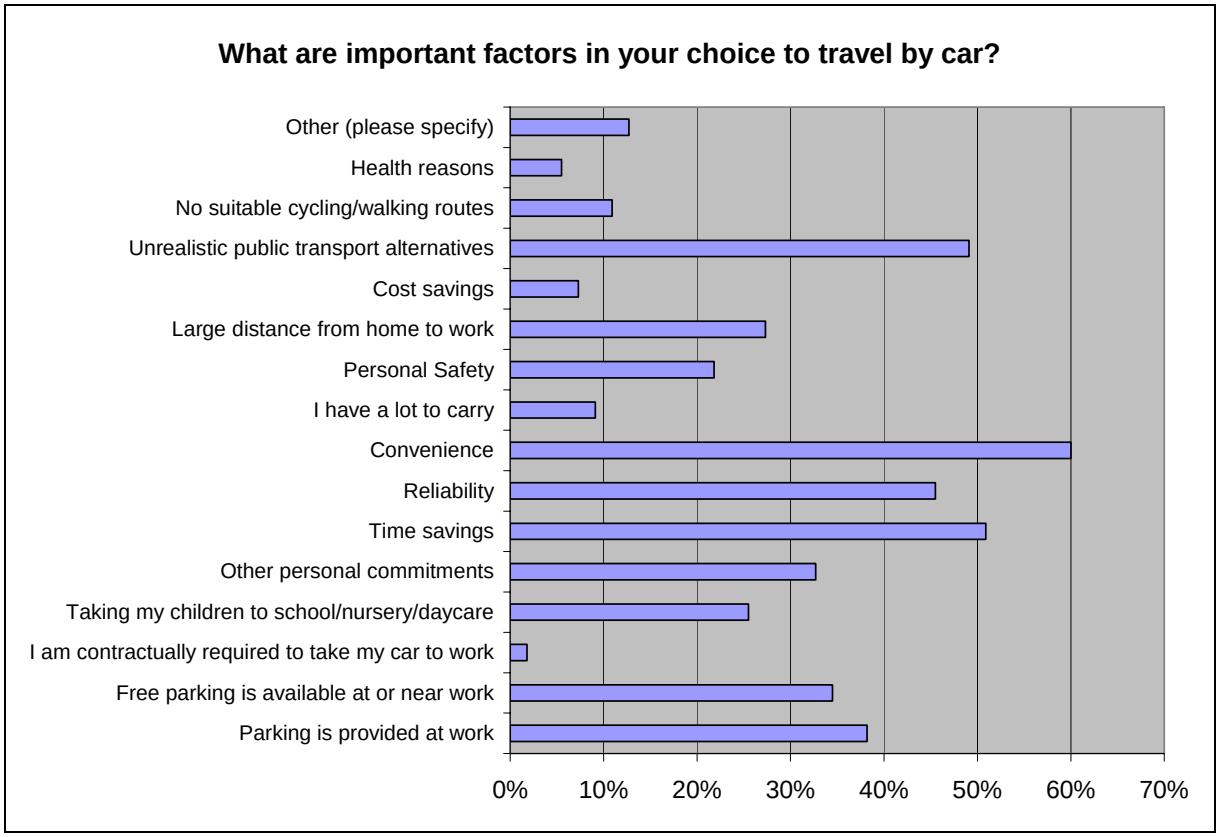

Figure 23- Factors influencing decision to drive to work

When staff believe they are required to use their car for work related travel or for personal business during the day they can feel there is no other option but to drive to work. When asked how often they were required to use their car for business travel, 53% of respondents replied that they either never used their car for business travel or did so once a week or less (Figure 24). 22% of respondents replied that they did so at least 4 times a week. This represents a moderate volume of business travel. By encouraging staff to use sustainable business travel options and by providing pool cars Greenfield House could not only make a significant economic saving in terms of mileage claims but may also be able to free up workers from the need to drive their car to work each day. 27% of respondents who replied that they undertook business travel four times a week or more replied that they would consider not driving to work if pool cars were available for use and a further 9% replied that they would do so from time to time. This works out at a potential reduction in single occupancy car use of 13% if followed through.

Figure 10 shows that a high proportion of respondents (46%) replied that they used their car on personal business during the working day once a week or less. 22% replied that they used their car for personal business more than four times a week. By providing staff with information and encouraging the use of local amenities Greenfield House may be able to cut down on the need for staff to use their car for personal business during the day. The provision of pool bicycles for staff to use for slightly longer trips may also be beneficial, as well as encouraging healthy living. In some cases where local amenities are not within comfortable walking and cycling distance it may be appropriate to offer common goods such as snacks and toiletries for purchase at a workplace shop.

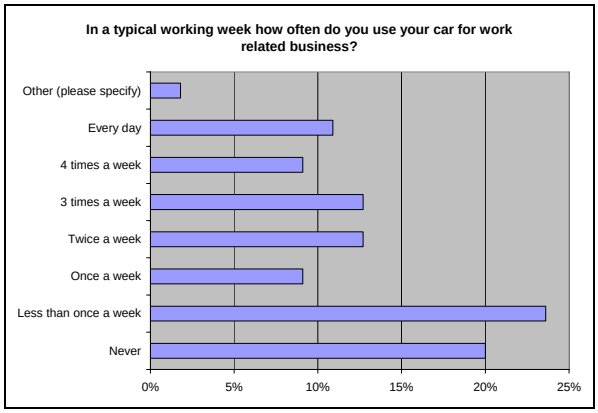

Figure 24- Business travel

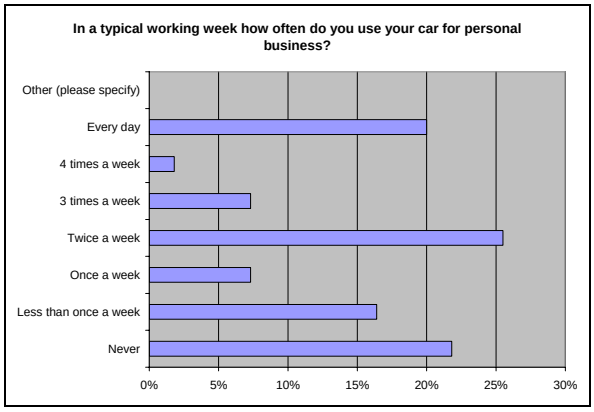

Figure 25- Personal travel during the working day

96% of those that commuted to work by car told us that they parked in the work provided car park. Figure 26 shows how frequently those reported finding a place to park a problem. The majority of respondents reported that they had found finding a place a problem at some stage and 4% reported that they always found it a problem or did so on a regular basis and 56% reported that they sometimes had a problem. 40% of respondents felt that the council staff and operations would benefit from more effective car park management. A good travel plan can provide more effective car parking management and can ensure that spaces are available for those that most need them.

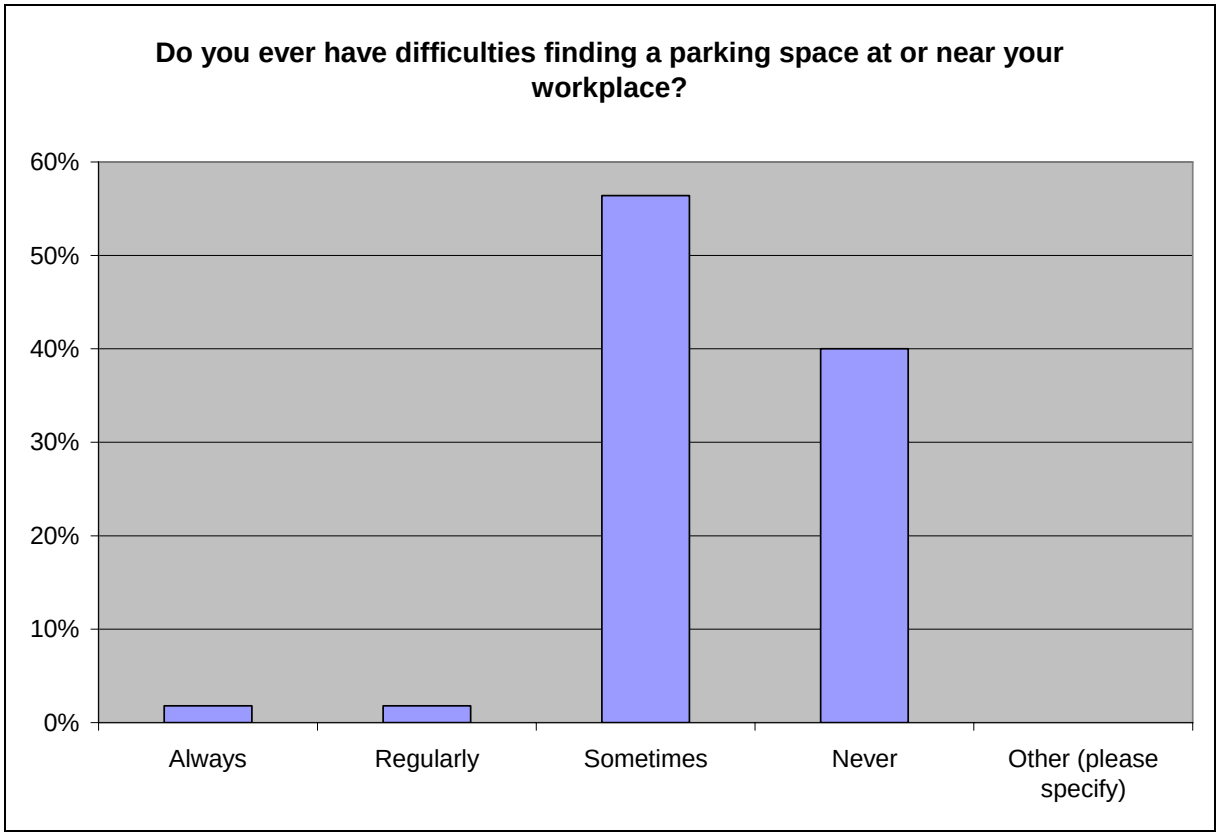

Figure 26- Reported frequency of difficulty in finding a car parking space

As well as establishing a picture of current travel behaviour the survey was interested in finding out what kind of measures might encourage staff to consider sustainable transport options. Again these results will help optimise travel planning measures for Greenfield House. Respondents were asked to consider which incentives might encourage more people to car share (Figure 27). Over 60% of respondents rated the following incentives as likely to be either 'Effective' or 'Very effective'; 'A guaranteed lift home in an emergency' and 'A guaranteed lift home if your car share partner lets you down', 'Incentives for car sharing (reward scheme etc)' and 'Help finding someone to car share with'. When respondents were asked if they would be willing to car share if a colleague with a suitable location and similar work pattern could be found 35% replied that they would and 4% replied that they already did so.

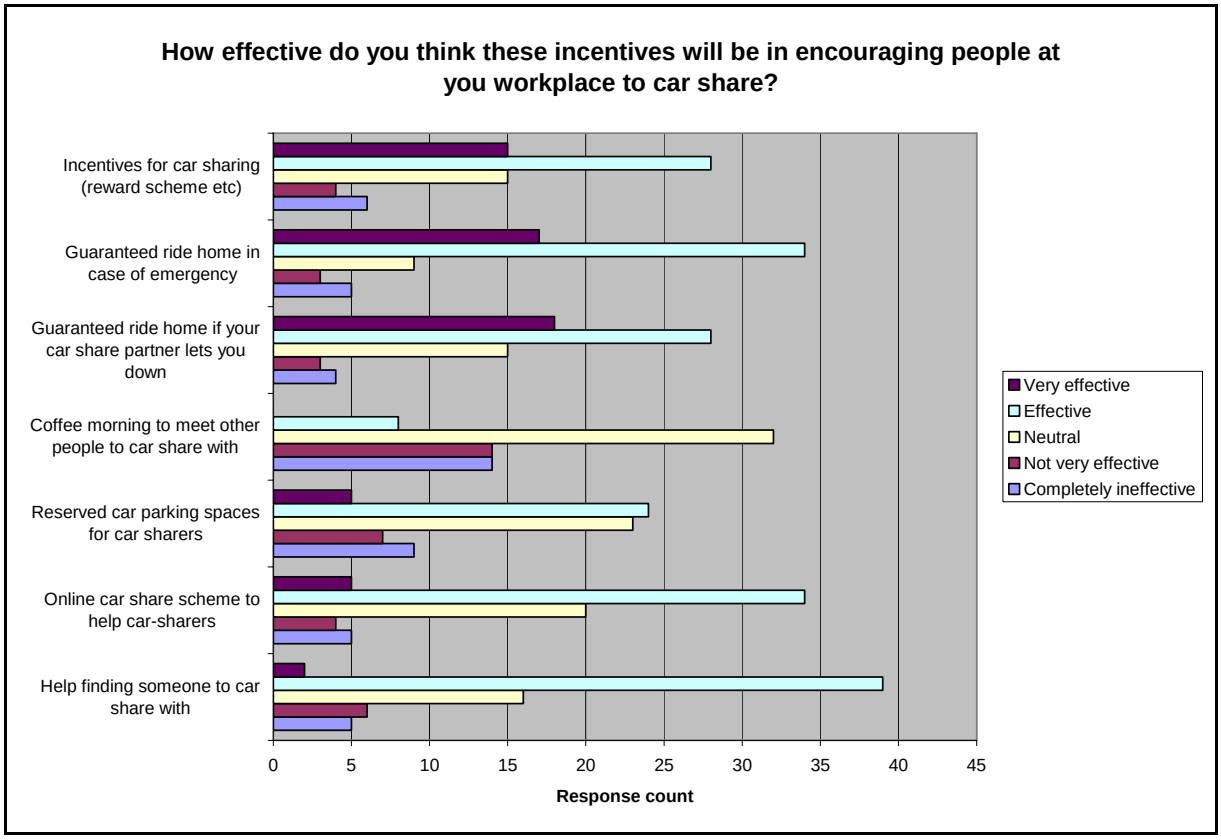

Figure 27- Encouraging staff to car share

Respondents were then asked to consider which incentives might encourage more people to walk or cycle to work (Figure 28). Over 70% rated the following option as likely to be either 'Highly Effective' or 'Effective'; 'A guaranteed ride home in an emergency' and 'Shower Changing Facilities available to use'. Respondents were also given the opportunity to add their own comments. Four respondents noted that cyclists could be encouraged if there were safer routes to work.

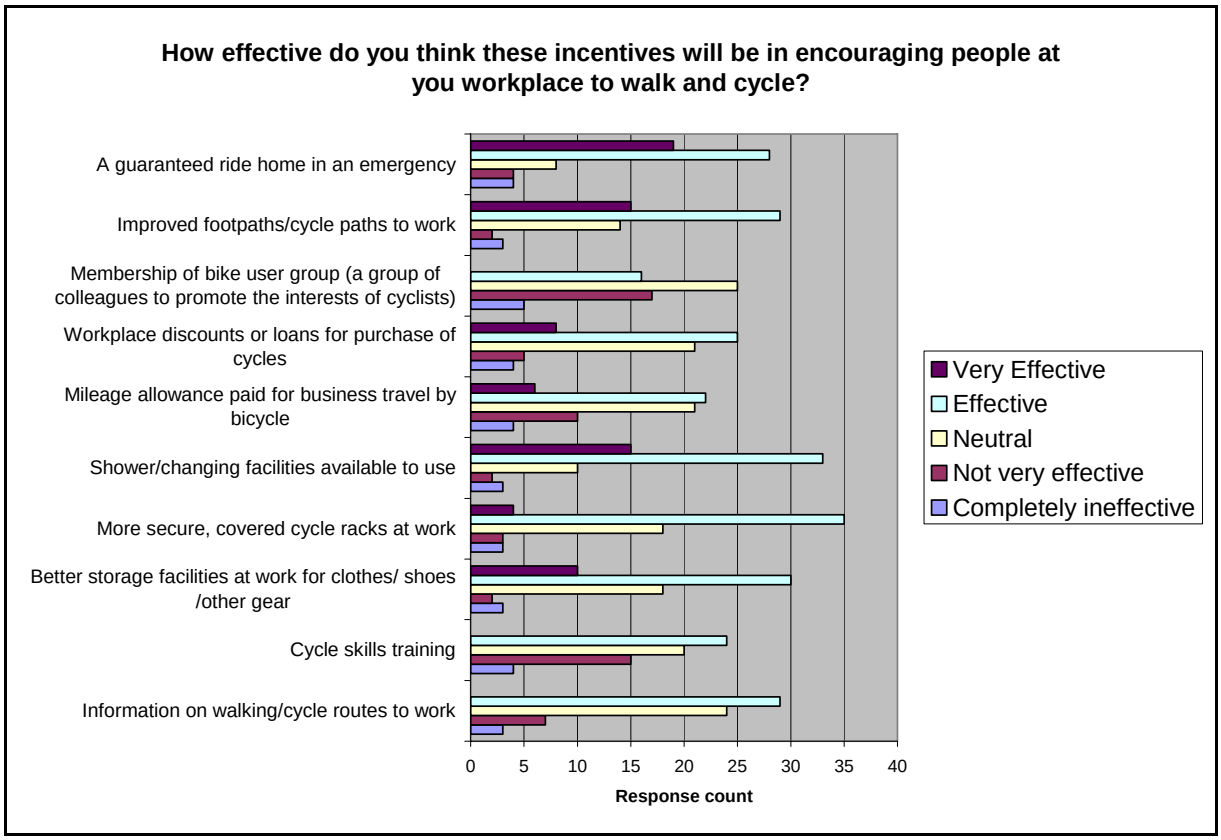

Figure 28- Rating incentives to encourage more people to walk or cycle to work

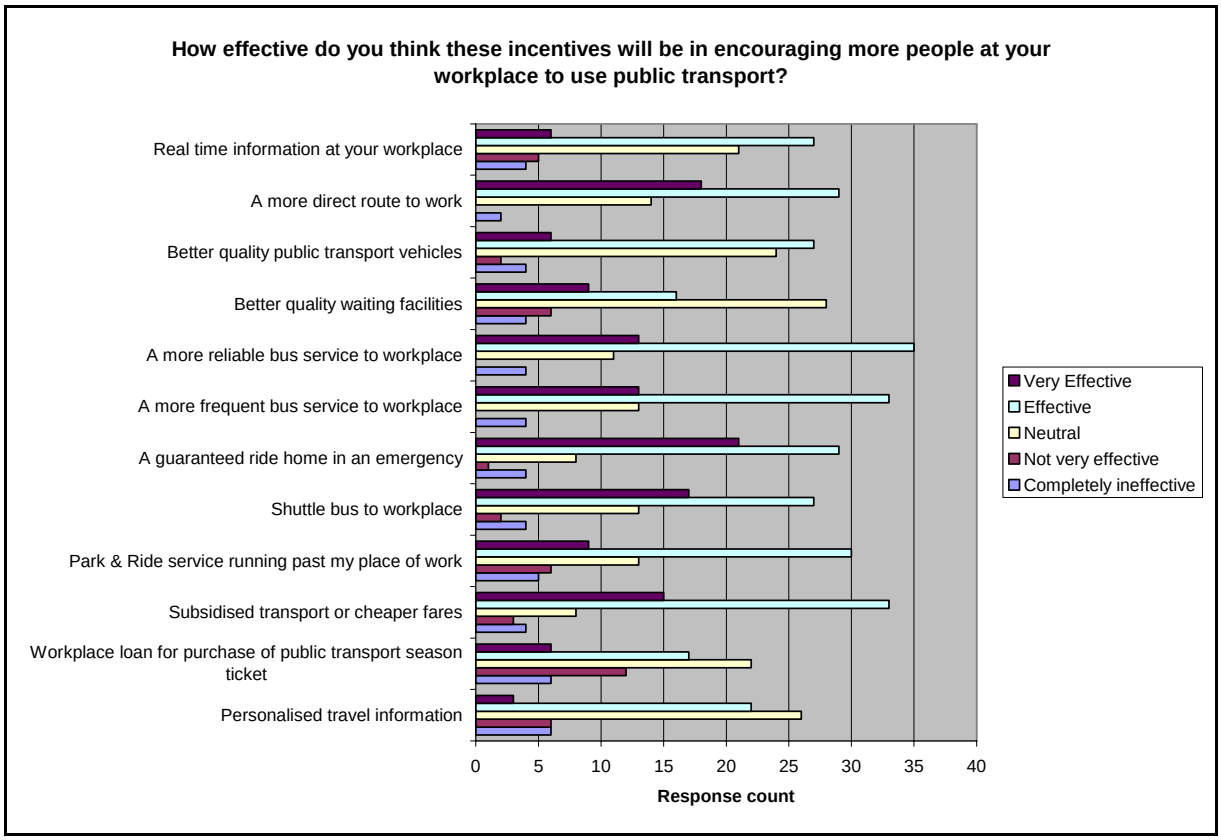

Figure 29- Encouraging staff to use public transport

Respondents were then asked to consider which incentives might encourage more people to use public transport to get to work (Figure 29). Over 70% rated the following options as likely to be either 'Highly Effective' or 'Effective'; 'A guaranteed ride home in an emergency', 'A more reliable bus service to workplace', 'Subsidised transport or cheaper fares', 'A more direct route to work' and 'A more frequent bus service to workplace'.

Next respondents were asked to consider what kind of measures might reduce car travel at their workplace. Over 70% of respondents rated the following measures as likely to be either 'Highly Effective' or 'Effective'; 'Formalised work from home scheme' and 'Flexitime policy (e.g. compressed hours)'.

Finally, respondents were asked how satisfied they were with their journey to work. While 82% of respondents were 'Fairly satisfied' or 'Very satisfied', 51% felt their journey could be more environmentally friendly, 34% would like their journey to be healthier and 34% would like their journey to be cheaper. These results are encouraging as they suggest that commutes at Greenfield House can really be improved by travel planning measures. Sustainable transport options are often cheaper and are certainly healthier and more environmentally friendly.

This 'wish list' should be borne in mind when marketing the benefits of sustainable travel options.

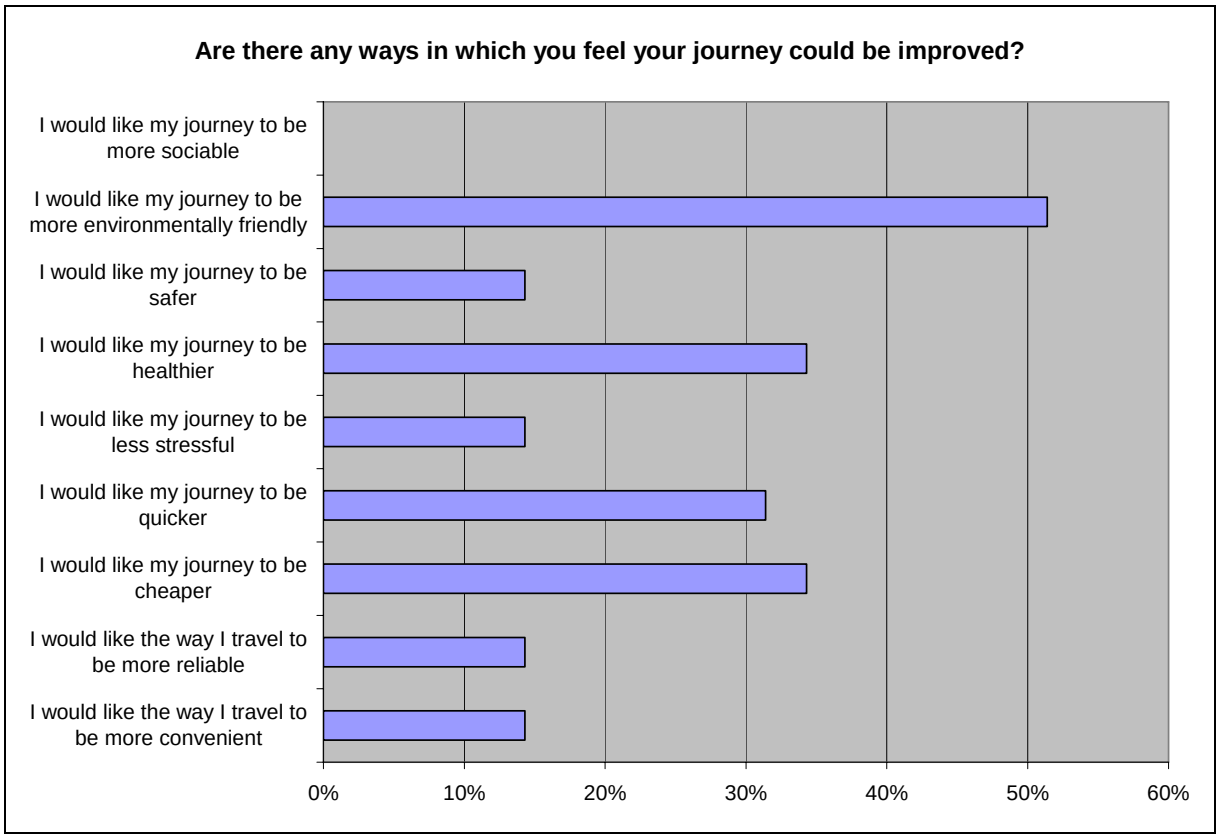

Figure 30- Ways in which staff felt their journey could be improved

3.5 Kilncraigs

Kilncraigs is located in Alloa town centre. The converted mill provides office space for community business and start ups as well as creative industries and has been shortlisted for a number of design awards including a Dynamic Place Award which it won in 2003. A total of 118 staff are based at the mill and work within Development and Environmental Services. 52% of the workforce are male and 48% female. 79% of staff work full time and 21% part time.

Post Code Cluster Mapping

A map of Kilncraigs employee home locations has been produced. The information provided by these maps is useful in identifying the spatial relationships between staff homes and Kilncraigs. In particular, the maps help to highlight opportunities and barriers associated with walking, cycling, public transport and car-sharing for current staff.

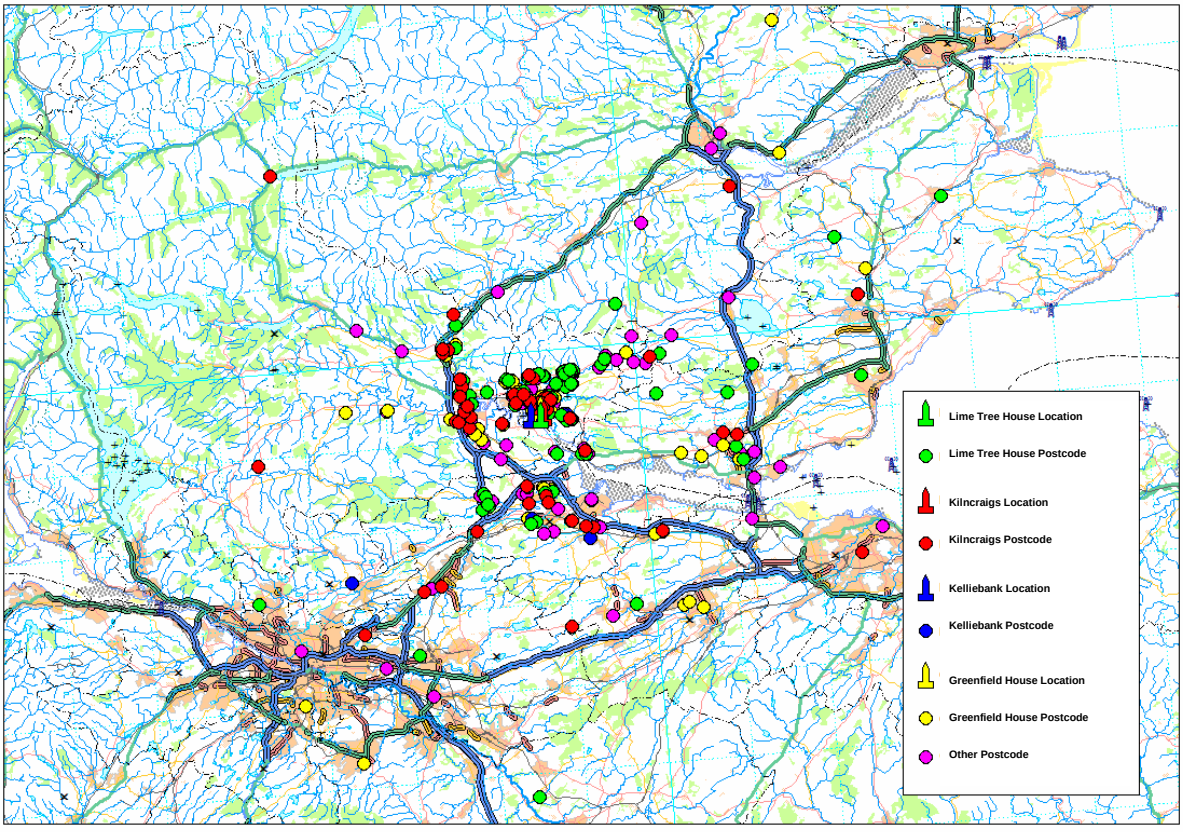

Figure 31- Employee home locations for Clackmannanshire Council

Figure 31 shows the home locations of all Clackmannanshire employees surveyed. The red circles show the home locations of Kilncraigs employees. As we can see while employees travel to Kilncraigs from a wide catchment area including Cumbernauld, Edinburgh and

Glenrothes the majority of employees are travelling from a much smaller catchment area within Clackmannanshire.

Figure 32 zooms in to look at the spatial patterns in this area in more detail.

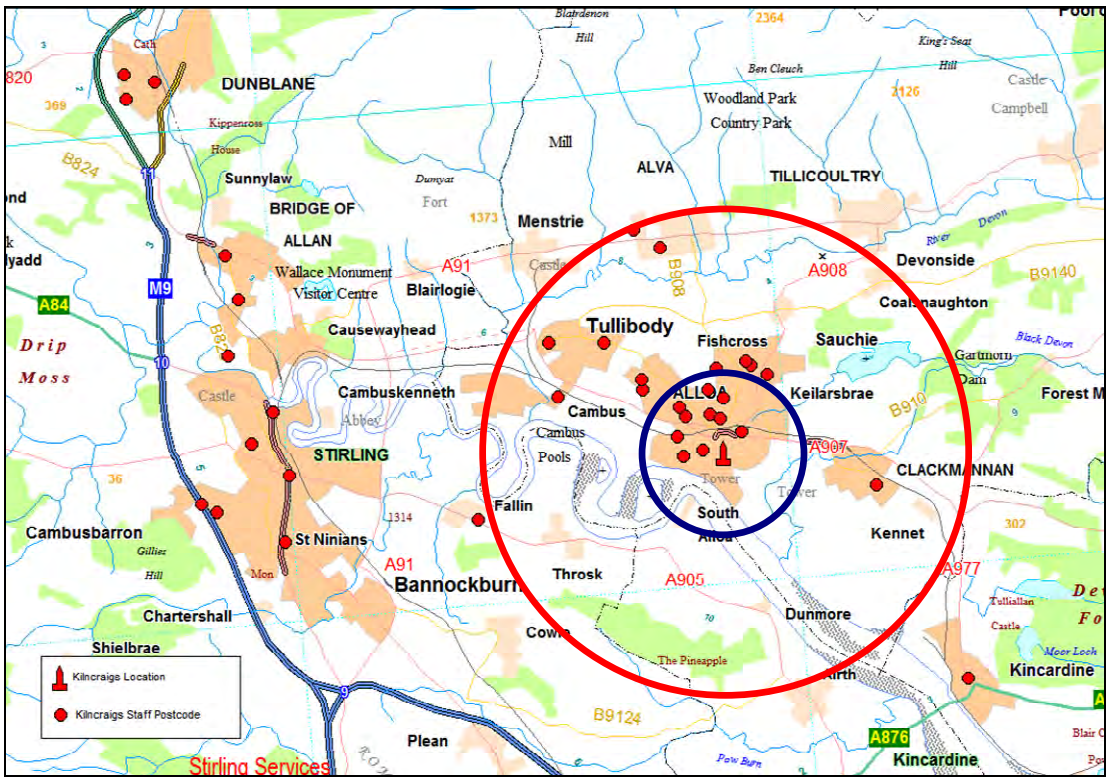

Figure 32 - Home Locations of Kilncraigs Employees and 1 and 3 mile radii

Figure 32 shows employee locations and I and 3 mile radii from Kilncraigs (blue and red circles respectively). A distance of 1- 2 miles is generally considered to be a comfortable walking distance for most adults and a distance of 3 miles a comfortable cycling distance.

Figure 32 reveals that approximately one third of staff surveyed at Kilncraigs live within a 3 mile radius of the site. And of these most live within a 1 mile radius of the site. Although we do not see such a high proportion of staff living within close proximity of the site as we saw at Greenfield and Lime Tree House the mapping still suggests that, for at least one third of staff, distance should not be a barrier to sustainable travel to Kilncraigs. A particular focus on sustainable travel by public transport, park and ride/ cycle and ride and car sharing will however be beneficial at this site.

Opportunities to enter into car-sharing arrangements may be possible particularly around residential clusters in Stirling and Dunblane. As well as Cumbernauld and Falkirk.

Staff Travel Survey

A total of 62 responses were collected, representing 53% of staff employed at the site. 61% of respondents were men and 39% were women, in a Chi Squared test this ratio was not found to differ significantly from the actual ratio of males to females in the workforce.[12]

There are three part time male workers at Kilncraigs however these workers were not captured in this survey and therefore a Chi Squared Test found the proportion of male part time workers to differ significantly from the actual proportion of male part time workers at the site. 39% of female workers at the site are part time workers. 13% of our female survey respondents were part time workers and this was found was found to differ significantly from the actual proportion of female part time workers in a Chi Squared Test.[13]

It is important, however, to recognize that this analysis is only a rough indication as to how accurate a representation of the workforce respondents to this survey were. There are in fact a number of possible biases that may exist in any given survey data set that we have not tested here, for example, it may be that staff who cycle to work are more likely to respond to the survey than car drivers. For the purposes of this report it is worth being aware of the potential bias in our results but also to bear in mind that - while work patterns may be an important determinant of travel behaviour - we have no evidence to suggest that this is so. The best way to minimize these biases is to ensure as high a response rate to your survey as possible. Clackmannanshire Council should where possible seek to strengthen the data presented here with observational studies (e.g. car counts, bicycle counts) or spot surveys as staff arrive at work.

The survey first looked to establish what kind of barriers (if any) staff at Kilncraigs might face in using sustainable transport options to get to work. By identifying what kind of barriers staff might face Clackmannanshire Council can target their travel planning measures effectively. These findings should be complimented by a comprehensive site audit.

Shift pattern can be a barrier to using sustainable transport options if staff are travelling outside the hours of peak public transport provision. Figure 33 shows when respondents begin and finish their working day. As we can see 98% of respondents start their day between 8-10 am and finish between 4 and 7 pm. For the majority of respondents then, start and finish times are broadly coincident with the peak periods of public transport provision. The hours between 7:30 am and 7pm also represent a period during which public transport services are generally busy and therefore present a low risk in terms of personal safety for those staff using public transport services or walking and cycling. Furthermore, Figure 34 shows the flexibility of working hours at Kilncraigs. As we can see over 90% of respondents replied that they had some flexibility in their arrival and/or departure times. Such flexibility is a huge advantage for those that would like to travel by public travel as it allows workers the opportunity to build their working day around the most convenient public transport services.

[12] Chi Squared test with Yates Correction: $X^2=4.26$, $p>0.05$

[13] Chi Squared test with Yates Correction: $X^2=27.33$, $p>0.05$

The findings presented here would suggest that work patterns at Kilncraigs should not present a significant barrier to using sustainable transport options.

Some staff will be limited in their travel options and may have to rely on their car due to health or work related travel. The survey results suggest that these while health constraints may only affect a small proportion of the work force many staff may be obliged to travel to work by car because of their job; 2% of respondents replied that they had a disability that affected their method of travel to work and 43% of respondents replied that they were 'Essential Car Users'. This is a high proportion of Essential Car Users and it may be cost effective for Clackmannanshire Council to review whether car travel really is an essential requirement of their job. It is often the case that many trips can be substituted for video or tele conferences and those trips that are essential can often be made more efficiently by sustainable transport options such as pool cars, trip sharing or public transport. For those that do need use of a car, an effective workplace travel plan will bring benefits by ensuring that car parking spaces are available when required by these high priority users.

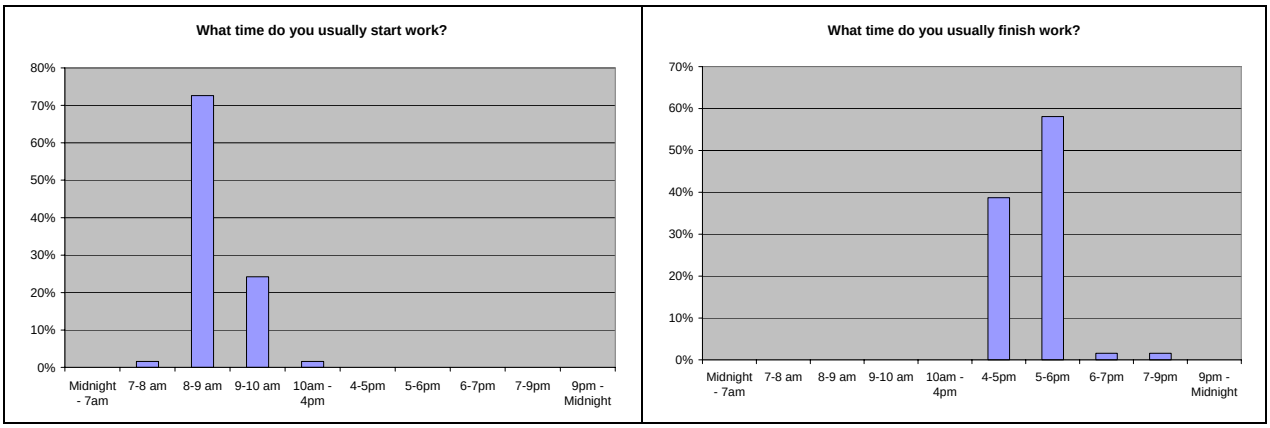

Figure 33- Shows when respondents at Kilncraigs start and finish their working day.

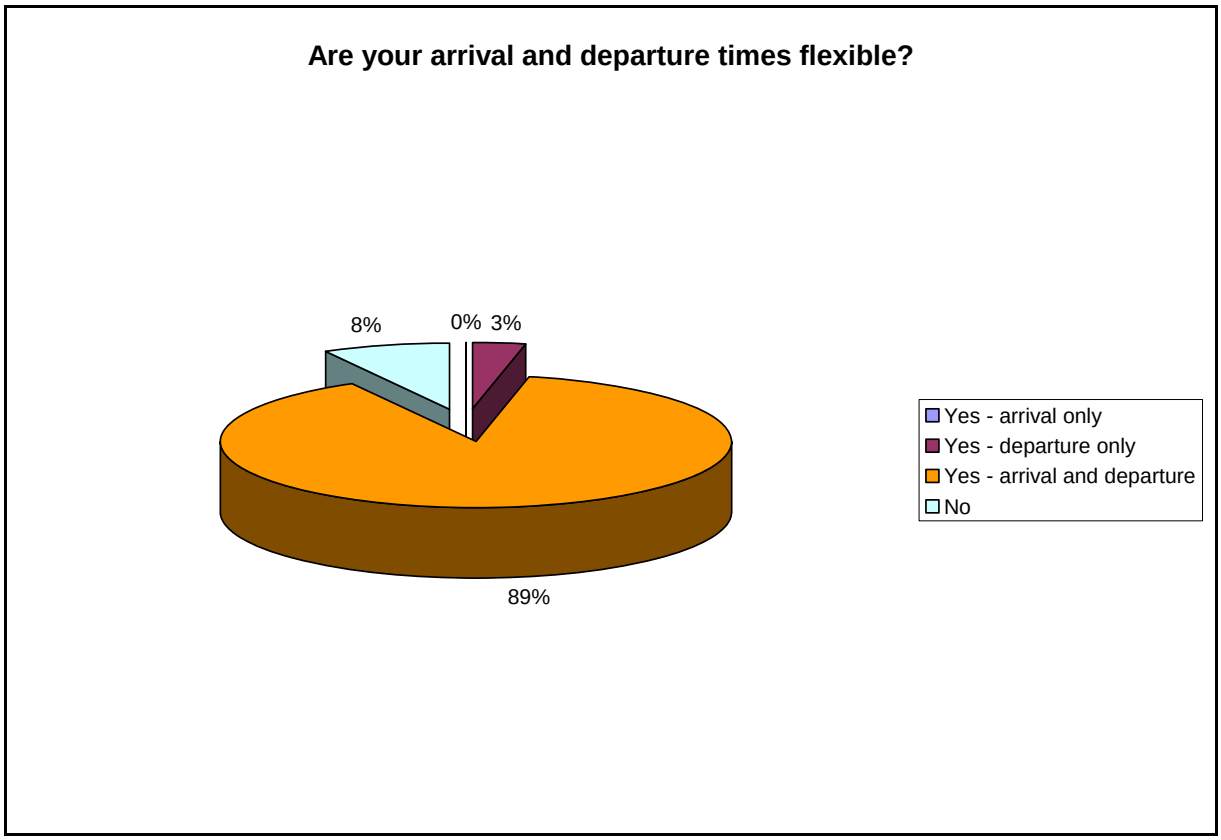

Figure 34: Flexibility in working times at Kilncraigs

The survey then established how far respondents were travelling to work. Respondents were asked to estimate how far their journey to work was (Figure 35). 56% responded that they travelled less than 10 miles to work each day and of those, 56% responded that they travelled 3 miles or less to work each day. A journey of 3 miles is generally considered to be comfortable cycling distance for most adults and 1-2 miles a reasonable walking distance. A journey of less than 10 miles is usually feasible by public transport particularly within an urban area such as Alloa where the concentration of population means that bus and train services tend to be relatively well developed. For 56% of respondents then, distance should not represent a major barrier to sustainable transport use. There are however a significant proportion of respondents who are travelling more than 10 miles to Kilncraigs (44%). For commutes over 10 miles access to appropriate public transport services may become more difficult and walking and cycling alone is unlikely to be feasible. Some suitable public transport options are however likely to be available and there may be car sharing opportunities amongst staff with similar travel patterns. Particular efforts will be required at Kilncraigs to ensure that these staff are fully informed about the public transport options and Car sharing opportunities available to them and encouraged to use these services.

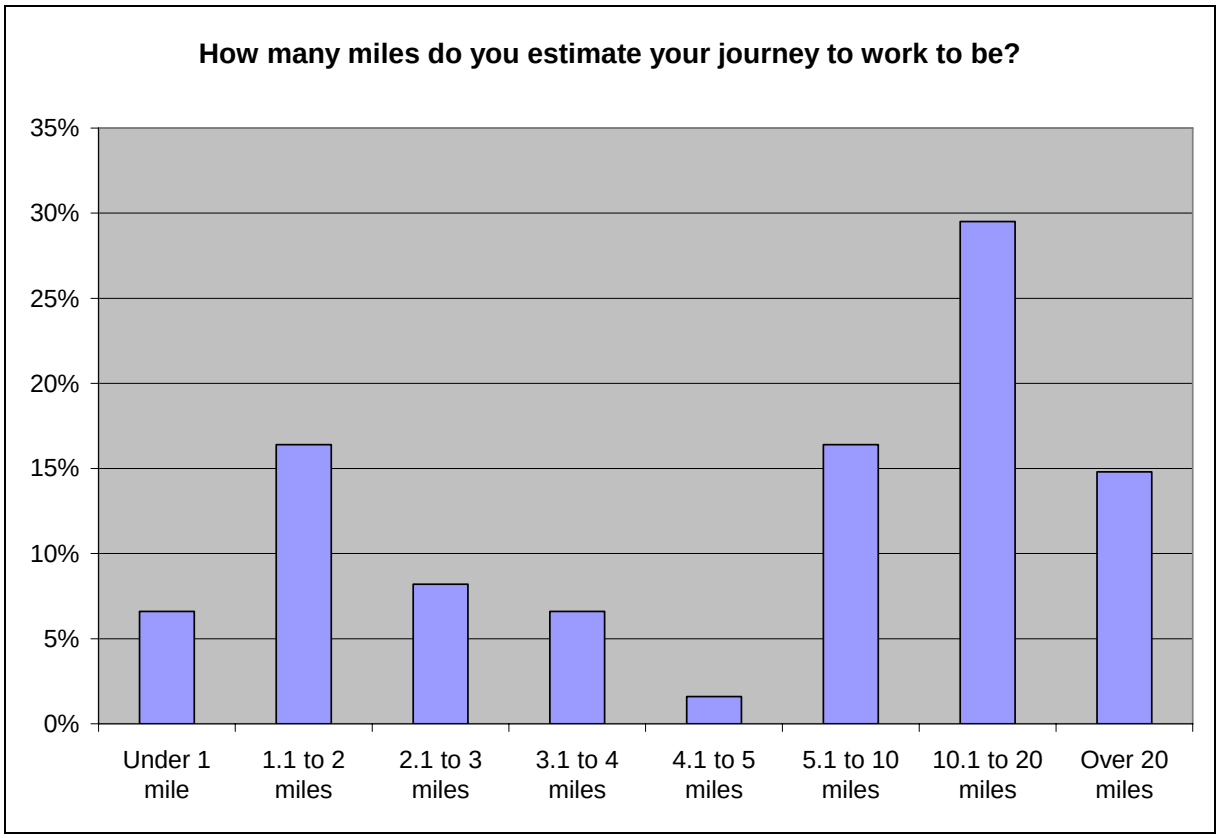

Figure 35 - Estimated distance to work

Respondents were asked if they owned a roadworthy cycle 37% replied that they did not including 35% of those that lived 3 mile or less from work. This barrier can easily be removed by helping staff purchase a cycle through a salary sacrifice scheme.

The survey then looked at current travel patterns and examined the factors that influence current travel patterns.

Figure 37 shows how respondents at Kilncraigs typically travel to work. As can be seen the vast majority of respondents travel by car; a total of 85% of commutes are made by car and of those 90% were single occupancy car journeys. This high proportion of car journeys is typical for Clackmannanshire however it is important to note that Clackmannanshire has the highest proportion of commutes by car in Scotland. When we compare these results with national figures (Figure 36) we can see that this is a particularly high proportion of journeys by car. It is important to note here that this high proportion of car journeys is not simply a result of the high proportion of respondents commuting long distances to work; 84% of respondents who travel 3 miles or less to work do so by car.

Only 2% of respondents replied that they walked to work (less than the national and Clackmannanshire average) and no respondents cycled yet as we have seen 31% of respondents replied that lived within 3 miles of their workplace. 8% respondents replied that

they took the bus to work, less than the national average of 12% and despite 56% living within less than 10 miles of the site. This may be due to a lack of appropriate routes, a lack of knowledge about public transport routes to work or a combination of both.

When respondents were asked if they occasionally travelled to work by a different method 33% of single occupancy car drivers replied that they occasionally walked, cycled took the bus or travelled as a passenger. If these respondents could be persuaded to make their commute by these modes more frequently this could represent a reduction in proportion of single occupancy car journeys by as much as 33%.

Mode	**Walk**	**Cycle**	**Bus**	**Train**	Car/van Passenger	Car/van Driver	**Car/van Total**	Other	Total (%)
National	**13**	**2**	**12**	**3**	8	60	**68**	2	100
Clackmannanshire	**8**	**0**	**5**	**0**	10	75	**85**	1	100

Figure 36- Employed adults not working from home - usual method of travel to work: 2003/2004[14]

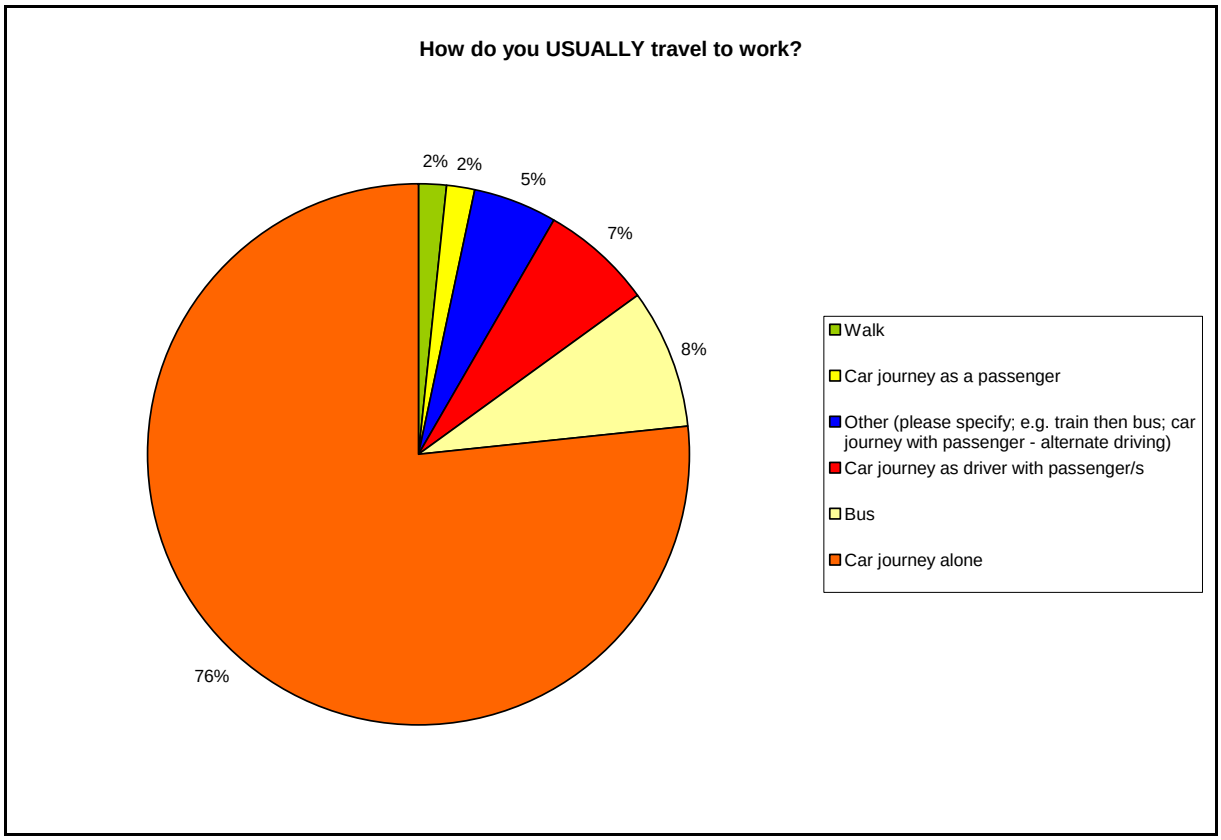

Figure 37- Shows how respondents at Kilncraigs usually travel to work

[14] Source: Scottish Household Survey data 2003/04, Scottish Executive, http://www.scotland.gov.uk/Publications/2006/01/10095727/28

When respondents were asked what the important factors were in their decision to drive to work (Figure 38) the most popular options were 'time savings', 'convenience' and 'unrealistic public transport alternatives'. Factors such as 'health reasons, 'cost savings', and 'I have a lot to carry' were not cited as frequently. It is useful to bear all of these 'drivers' in mind when marketing the travel plan to staff and developing effective travel plan measures.

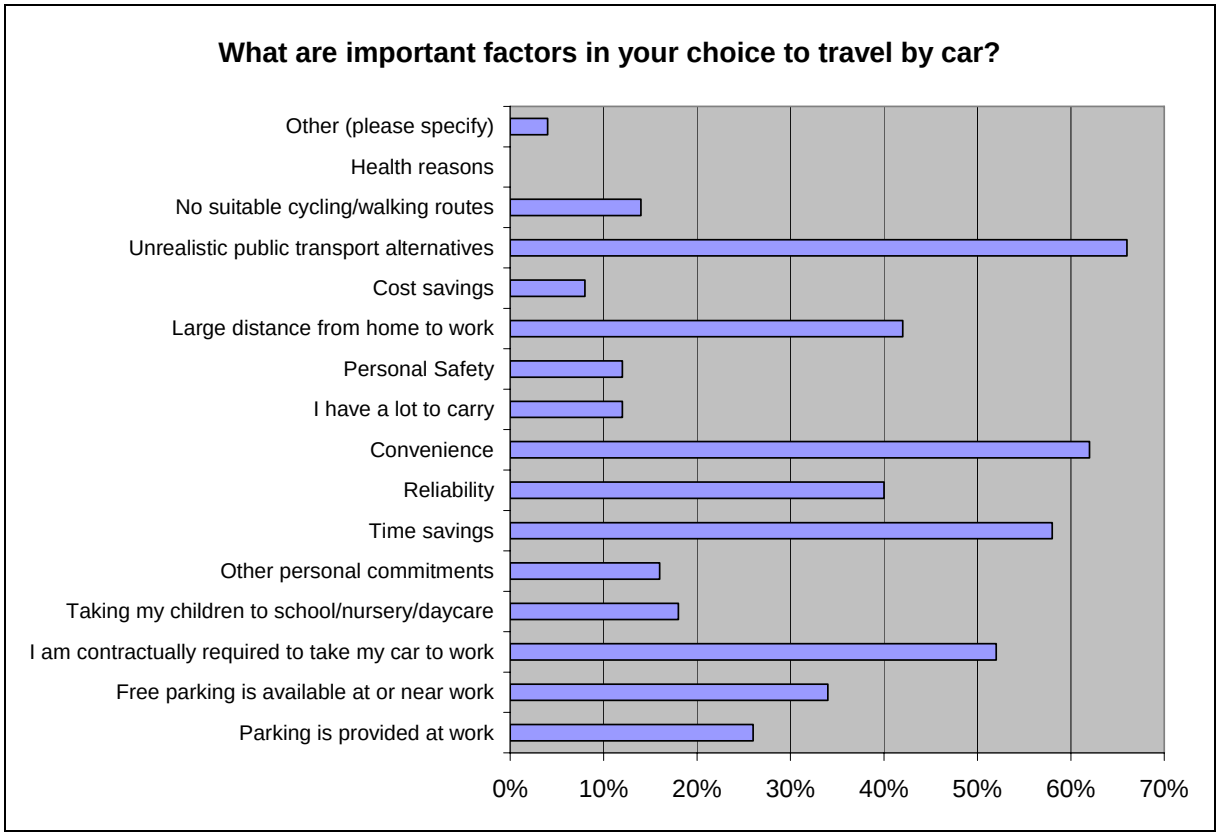

Figure 38- Factors influencing decision to drive to work

When staff believe they are required to use their car for work related travel or for personal business during the day they can feel there is no other option but to drive to work. When asked how often they were required to use their car for business travel, 26% of respondents replied that they either never used their car for business travel or did so once a week or less (Figure 39). However 48% of respondents replied that they did so at least 4 times a week. This represents a high volume of business travel. By encouraging staff to use sustainable business travel options and by providing pool cars Kilncraigs could not only make a significant economic saving in terms of mileage claims but may also be able to free up workers from the need to drive their car to work each day. While only 8% of respondents who replied that they undertook business travel four times a week or more replied that they would consider not driving to work if pool cars were available for use and a further 25% replied that they would do so from time to time. That a reasonable proportion of car driving

staff would be prepared not to drive to work from time to time is encouraging and could lead to not insignificant reductions in car use on any one day.

Figure 10 shows that the vast majority of respondents (70%) replied that they used their car on personal business during the working day once a week or less. Just 8% replied that they used their car for personal business more than four times a week. By providing staff with information and encouraging the use of local amenities Kilncraigs may be able to almost eliminate the need for staff to use their car for personal business during the day. The provision of pool bicycles at Kilncraigs is positive and Kilncraigs should ensure that staff are aware of this resource and encouraged to use make use of it

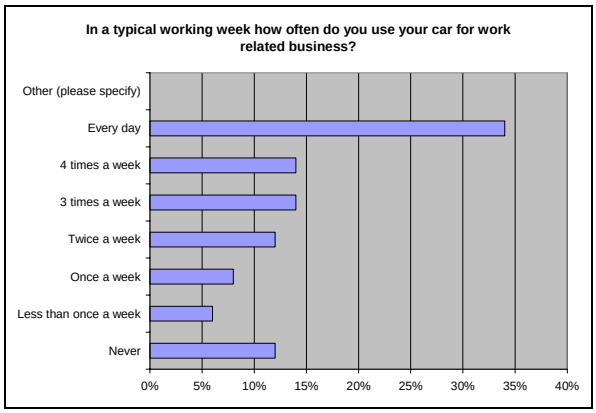

Figure 39- Business travel

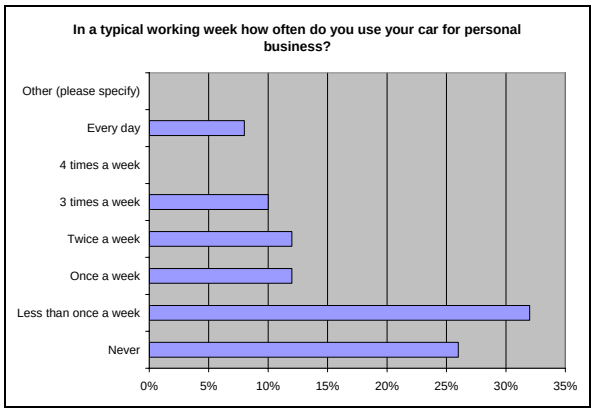

Figure 40- Personal travel during the working day

96% of those that commuted to work by car told us that they parked in the work provided car park. Figure 42 shows how frequently those reported finding a place to park a problem. Half of respondents reported that they had found finding a place a problem at some stage and 6% reported that they always found it a problem or did so on a regular basis and 44% reported that they sometimes had a problem. 38% of respondents felt that the council staff and operations would benefit from more effective car park management. A good travel plan can provide more effective car parking management and can ensure that spaces are available for those that most need them.

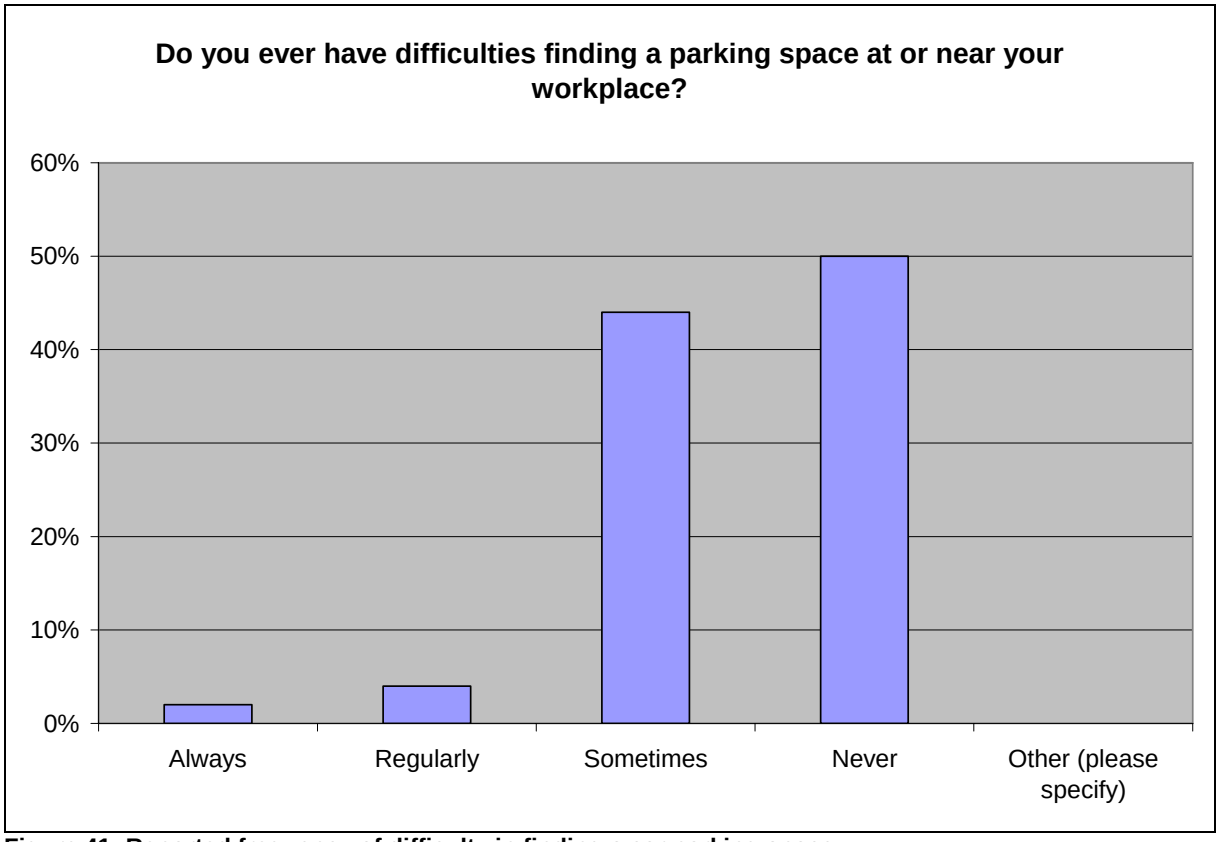

Figure 41- Reported frequency of difficulty in finding a car parking space

As well as establishing a picture of current travel behaviour the survey was interested in finding out what kind of measures might encourage staff to consider sustainable transport options. Again these results will help optimise travel planning measures for Kilncraigs. Respondents were asked to consider which incentives might encourage more people to car share (Figure 42). Over 70% of respondents rated the following incentives as likely to be either 'Effective' or 'Very effective'; 'A guaranteed lift home in an emergency' and 'Incentives for car sharing (reward scheme etc)' and 'Help finding someone to car share with. 'A Guaranteed ride home if your car share partner lets you down' was also popular. When respondents were asked if they would be willing to car share if a colleague with a suitable location and similar work pattern could be found 47% replied that they would and 13% replied that they already did so.

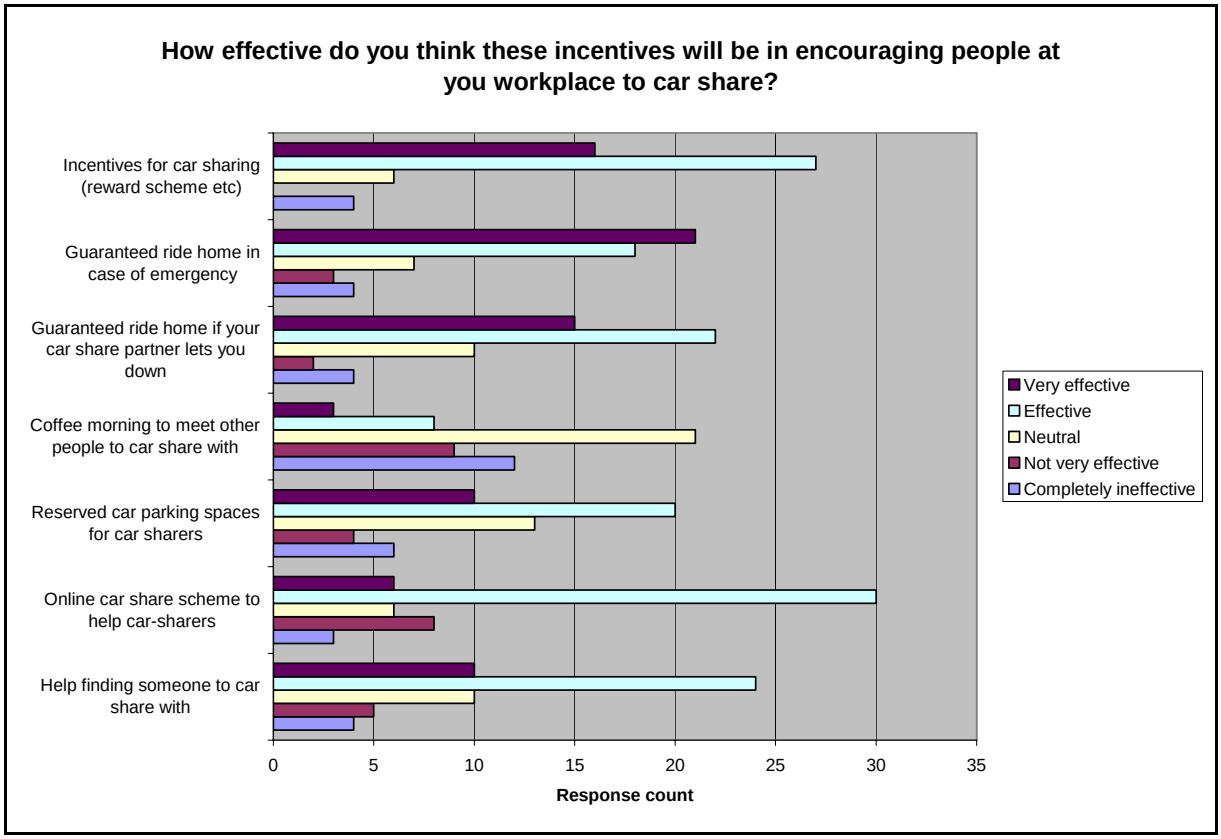

Figure 42- Encouraging staff to car share

Respondents were then asked to consider which incentives might encourage more people to walk or cycle to work (Figure 43). Over 70% rated the following option as likely to be either 'Highly Effective' or 'Effective'; 'Improved footpaths/cycle paths to work', 'Better storage facilities at work for clothes/ shoes /other gear', 'A guaranteed ride home in an emergency' and 'Shower Changing Facilities available to use'. 'Information on walking/cycle routes to work' was also popular.

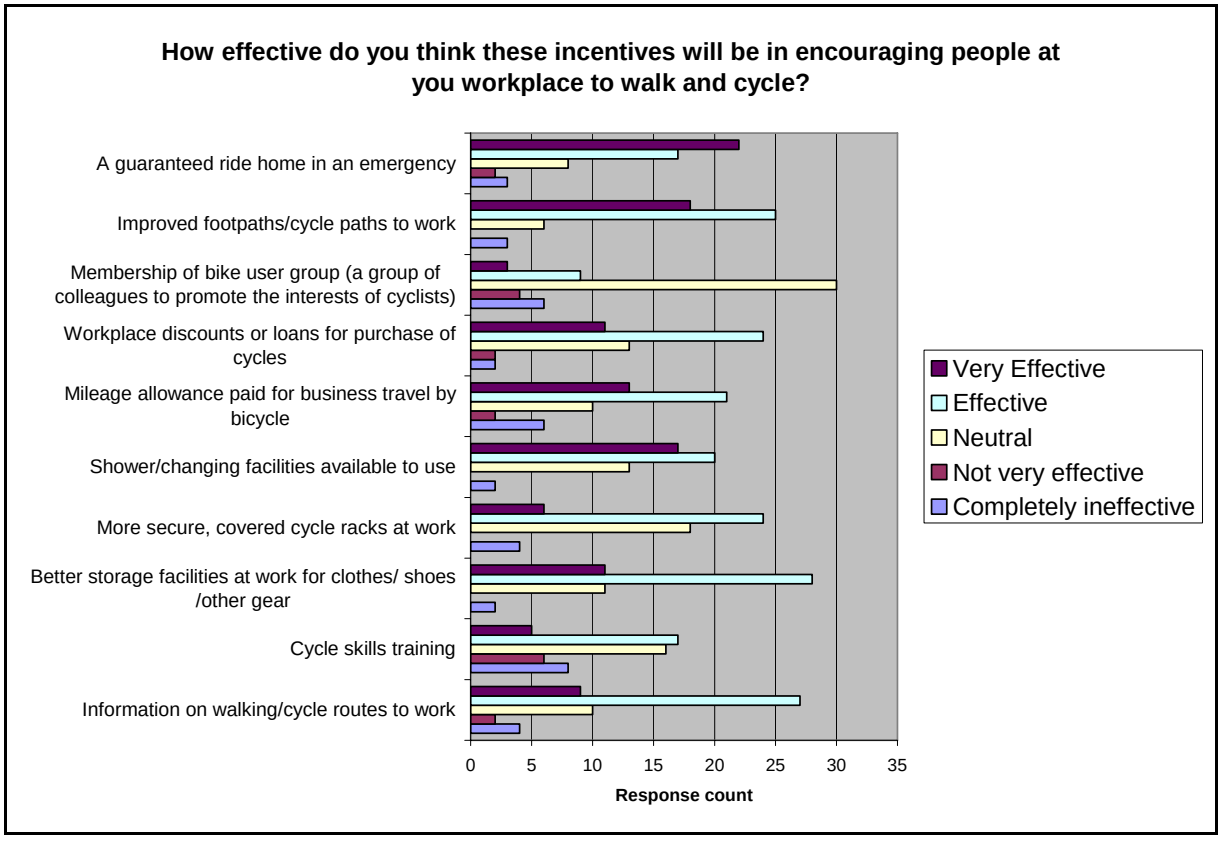

Figure 43 - Rating incentives to encourage more people to walk or cycle to work

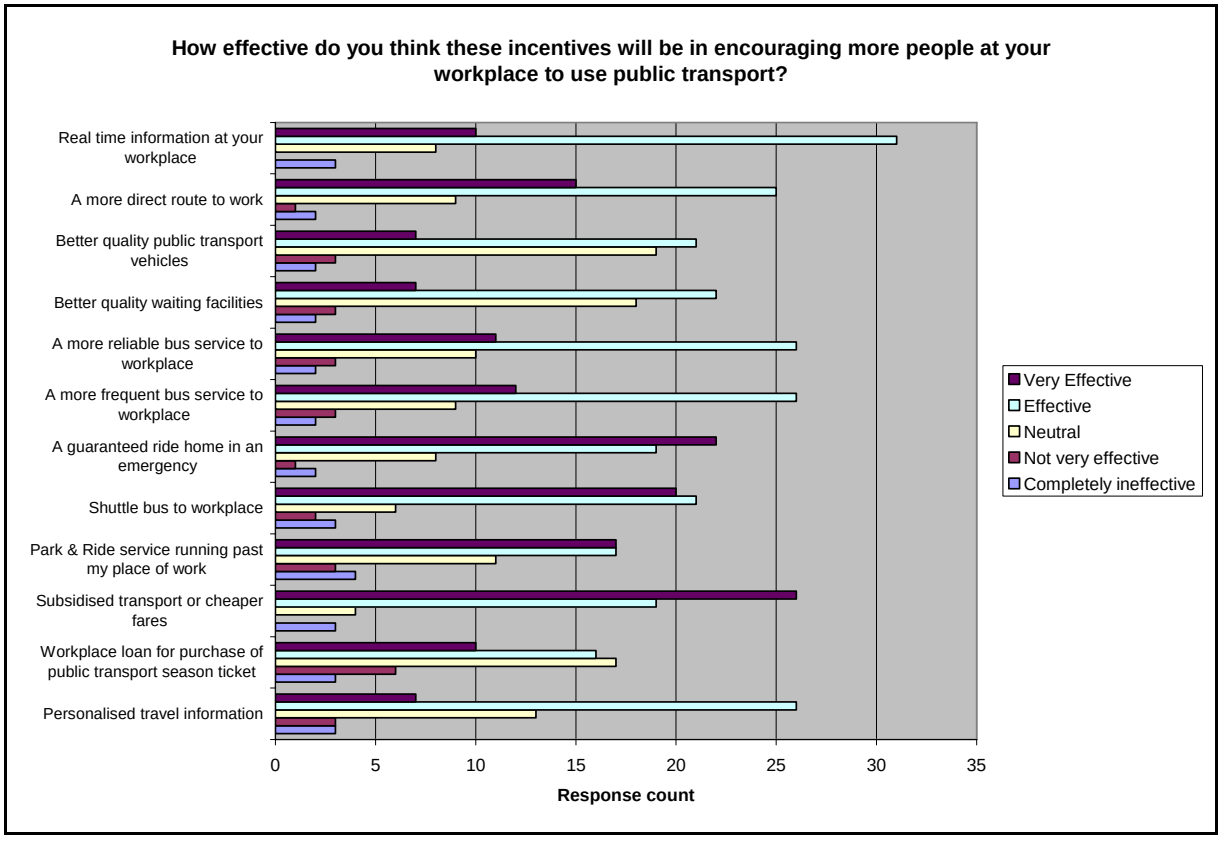

Figure 44- Encouraging staff to use public transport

Respondents were then asked to consider which incentives might encourage more people to use public transport to get to work (Figure 44). Over 75% rated the following options as likely to be either 'Highly Effective' or 'Effective'; Real time information at your workplace' 'A guaranteed ride home in an emergency', 'A more direct route to work', 'Shuttle bus to workplace' and 'Subsidised transport or cheaper fares'. 'A more frequent bus service to workplace' and 'A more reliable bus service to workplace' were also popular.

Next respondents were asked to consider what kind of measures might reduce car travel at their workplace. Over 80% of respondents rated the following measures as likely to be either 'Highly Effective' or 'Effective'; 'Formalised work from home scheme' and 'Flexitime policy (e.g. compressed hours)'.

Finally, respondents were asked how satisfied they were with their journey to work. While 73% of respondents were 'Fairly satisfied' or 'Very satisfied', 52% felt their journey could be more environmentally friendly, 40% would like their journey to be cheaper and 43% would like their journey to be quicker. These results are encouraging as they suggest that commutes at Kilncraigs can really be improved by travel planning measures. Sustainable transport options are often cheaper and are certainly more environmentally friendly.

This 'wish list' should be borne in mind when marketing the benefits of sustainable travel options.

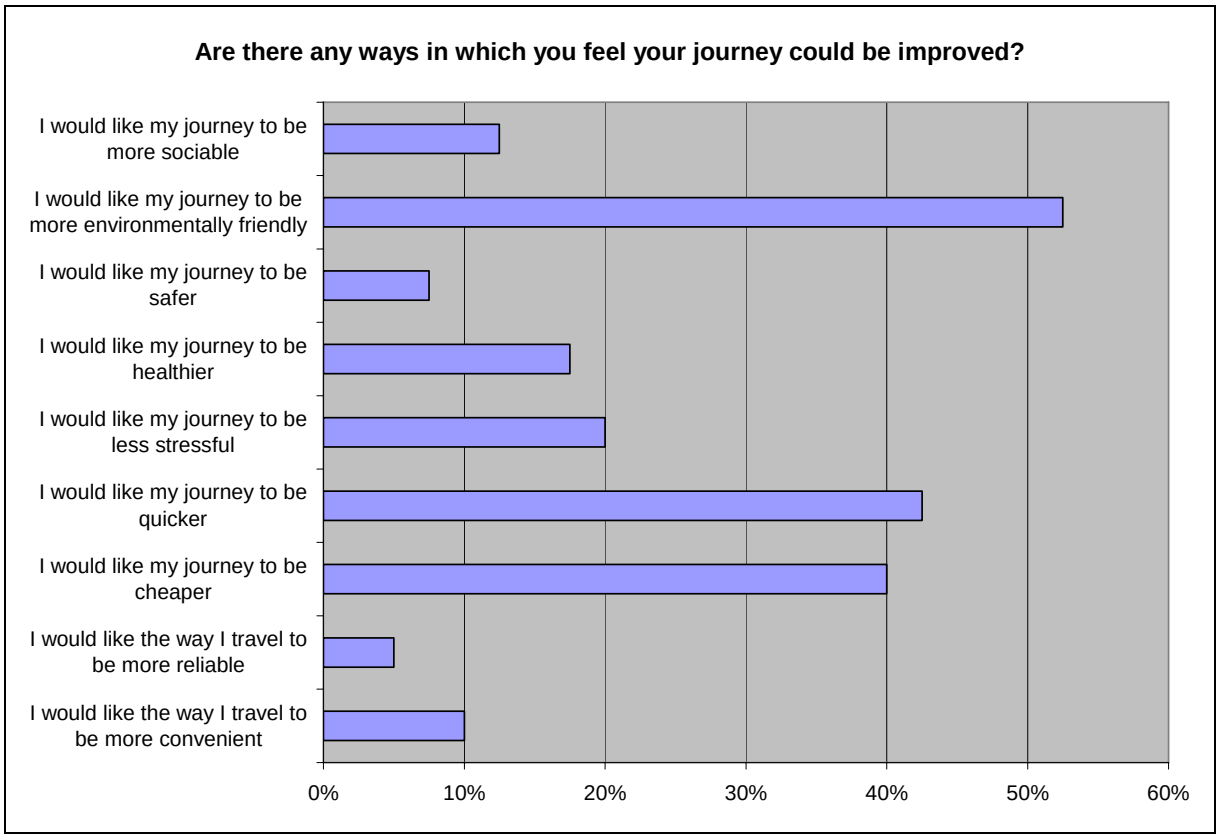

Figure 45- Ways in which staff felt their journey could be improved

3.6 Kelliebank Depot

Kelliebank Depot is located on the outskirts of Alloa. A total of 231 staff are based at this location. 92% of the workforce are male and 8% female. 95% of staff work full time and 5% part time.

Post Code Cluster Mapping

A map of Kelliebank depot employee home locations has been produced. The information provided by these maps is useful in identifying the spatial relationships between staff homes and Kelliebank depot In particular, the maps help to highlight opportunities and barriers associated with walking, cycling, public transport and car-sharing for current staff.

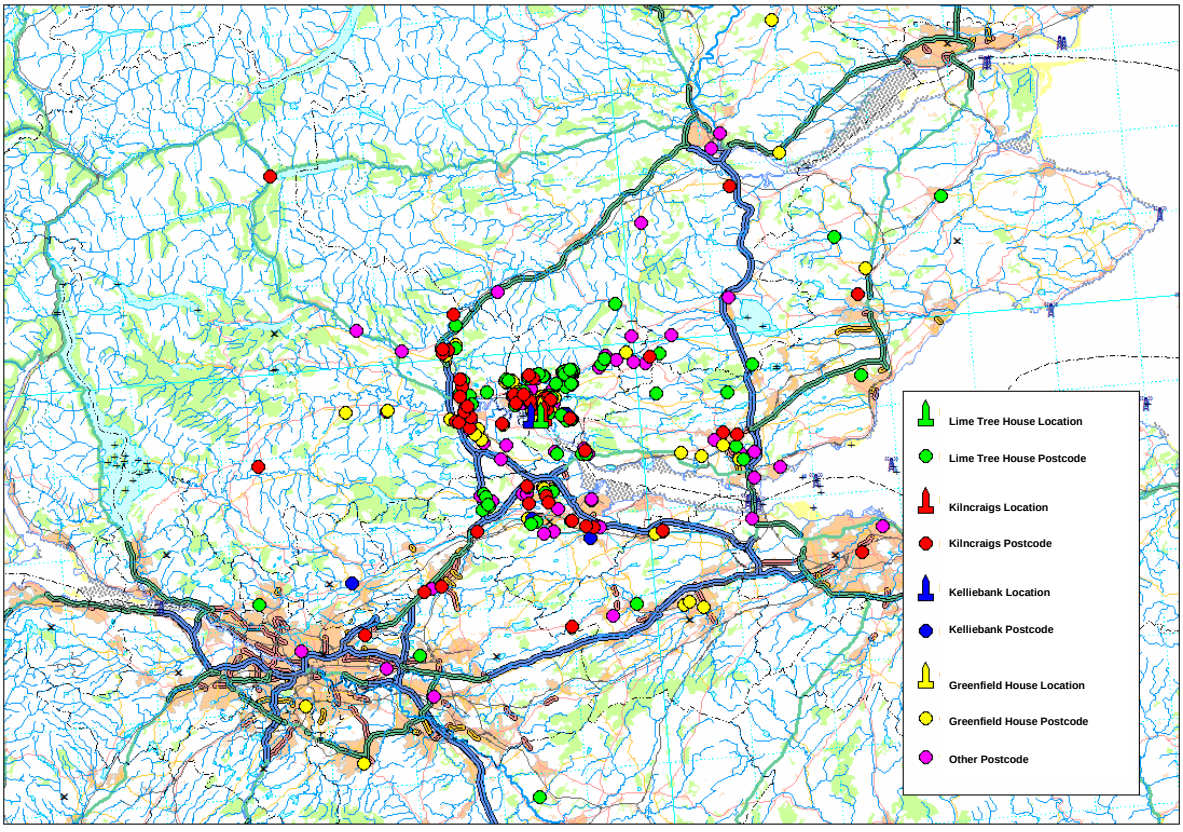

Figure 46- Employee home locations for Clackmannanshire Council

Figure 46 shows the home locations of all Clackmannanshire employees surveyed. The blue circles show the home locations of Kelliebank Depot employees. As we can see, the majority of Kelliebank employees are travelling from a much smaller catchment area within Clackmannanshire than for other work-sites.

Figure 47 zooms in to look at the spatial patterns in this area in more detail.

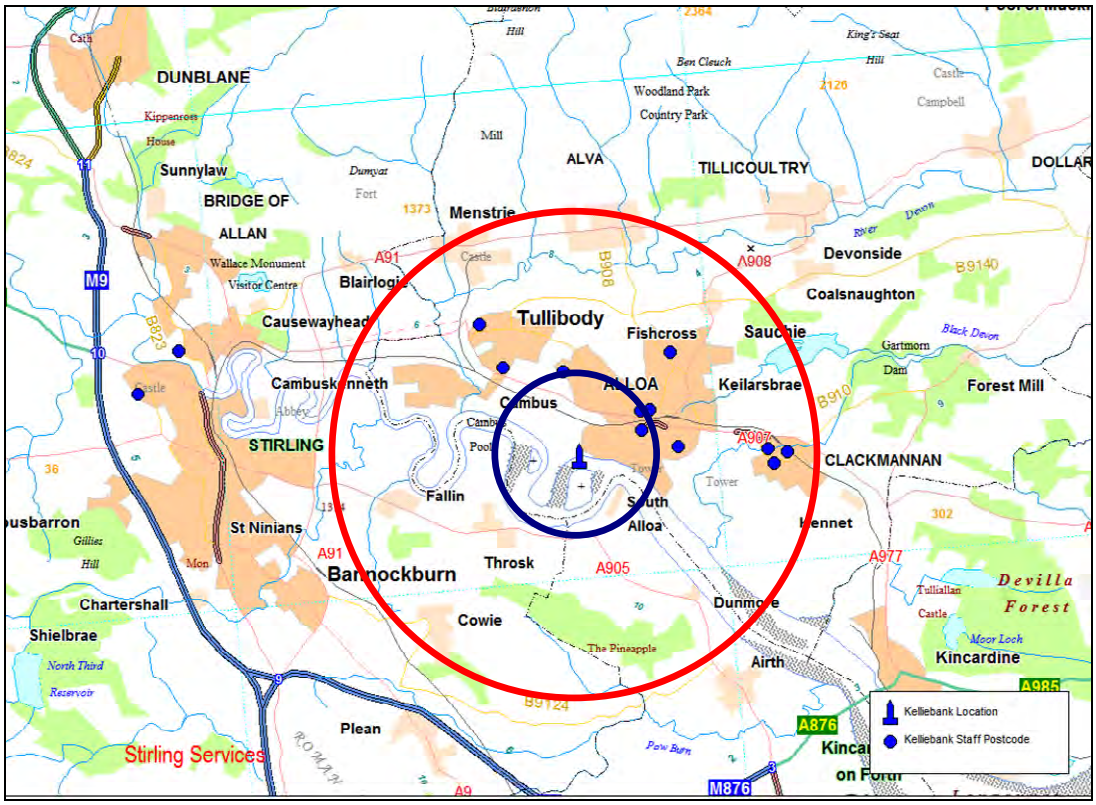

Figure 47 - Home Locations of Kelliebank Depot Employees and 1 and 3 mile radii

Figure 47 shows employee locations and I and 3 mile radii from Kelliebank Depot (blue and red circles respectively). A distance of 1- 2 miles is generally considered to be a comfortable walking distance for most adults and a distance of 3 miles a comfortable cycling distance.

Figure 47 reveals that approximately 60% of staff surveyed at Kelliebank Depot live within a 3 mile radius of the site. Approximately 10% of staff live within a 1 mile radius of the site. If the staff surveyed here are typical of staff at Kelliebank Depot (see below for comment) then this mapping exercise strongly suggests that, for most staff at Kelliebank, distance should not be a barrier to sustainable travel and assuming appropriate routes are available, a significant proportion of employees are likely to be in a position to walk, cycle or make use of public transport services to access Kelliebank.

With such a small sample of staff surveyed it is hard to pin point opportunities for car-sharing arrangements accurately. However as we outline below, with such a large workforce operating on similar work patterns there are likely to be many opportunities.

Staff Travel Survey

A total of 18 responses were collected, representing 8% of staff employed at the site. 72% of respondents were men and 28% were women, in a Chi Squared test this ratio was found to differ significantly from the actual ratio of males to females in the workforce.[15]

In a Chi-squared test the proportion of male part time workers that responded to the survey was found to differ significantly from the actual proportion of male part time workers at the site as was the proportion of part time female workers that responded to the survey when compared with the actual proportion of female part time workers.[16]

That the profile of respondents is quite different to that of the actual workforce (at least in terms the proportions of male and female respondents and full and part time workers) is not unexpected given the low proportion of respondents. The best way to ensure an accurate reflection of the workforce and to minimize biases is to ensure as high a response rate as possible to your survey. Given the low response rate to this survey it is recommended that Clackmannanshire Council seek to strengthen the data presented here with observational studies (e.g. car counts, bicycle counts) or spot surveys as staff arrive at work.

The survey first looked to establish what kind of barriers (if any) staff at Kelliebank depot might face in using sustainable transport options to get to work. By identifying what kind of barriers staff might face Clackmannanshire Council can target their travel planning measures effectively. These findings should be complimented by a comprehensive site audit.

Kelliebank is not served directly by public transport. However, given the sites proximity to Alloa town centre and assuming a work pattern concomitant with public transport provision, many staff commuting from out with Alloa are likely to be in a position to make use of public transport services to Alloa town centre and then make the short walk or cycle to Kelliebank. If work patterns are broadly similar it may even be worthwhile for the Council to consider offering staff a shuttle bus service between Alloa town centre and Kelliebank.

Figure 48 shows when respondents at Kelliebank begin and finish their working day. As we can see 100% of respondents start their day between 7-10 am and finish between 4 and 7 pm. For the majority of respondents then, start and finish times *are* broadly coincident with the peak periods of public transport provision. The hours between 7:30 am and 7pm also represent a period during which public transport services are generally busy and therefore present a low risk in terms of personal safety for those staff using public transport services or walking and cycling.

The broadly consistent staff work patterns we see here also suggest good opportunity for car sharing arrangements and shuttle bus provision.

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[15] Chi Squared test with Yates Correction: $X^2=52.1$, $p<0.05$

[16] Chi Squared test with Yates Correction: $X^2=15.56$, $p,<0.05$ and Chi Squared test with Yates Correction: $X^2=59.15$, $p<0.05$ respectively

It is worth bearing in mind that staff starting work before 8 am are likely to encounter slightly reduced public transport services than those starting after 8 am, however with 50% of the workforce starting between 7 and 8 am there are good opportunities for car sharing which may provide a solution in areas where public transport services are poor before 7:30 am.

Figure 49 shows the flexibility of working hours at Kelliebank. As we can see over 40% of respondents replied that they had some flexibility in their arrival and/or departure times including 11% of workers who start work between 7 and 8 am. Such flexibility is an advantage for those that would like to travel by public travel as it allows workers the opportunity to build their working day around the most convenient public transport services. The findings presented here would suggest that while some staff may encounter some problems with early provision of public transport services, in the main work patterns at Kelliebank should not present a significant barrier to using sustainable transport options.

Some staff will be limited in their travel options and may have to rely on their car due to health or business travel. The survey results suggest that while health constraints may only affect a small proportion of the work force many staff may be obliged to travel to work by car because of their job; 0% of respondents replied that they had a disability that affected their method of travel to work and 39% of respondents replied that they were 'Essential Car Users'. This is a relatively high proportion of Essential Car Users and it may be cost effective for Clackmannanshire Council to review whether car travel really is an essential requirement of their job. It is often the case that many trips can be substituted for video or tele conferences and those trips that are essential can often be made more efficiently by sustainable transport options such as pool cars, trip sharing or public transport. For those that do need use of a car an effective workplace travel plan will bring benefits by ensuring that car parking spaces are available when required by these high priority users.

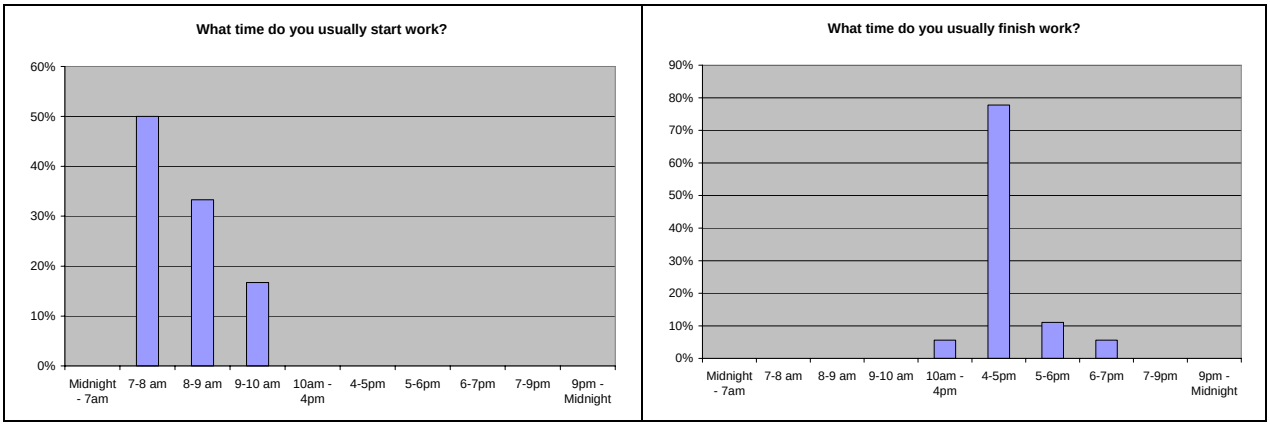

Figure 48- Shows when respondents at Kelliebank start and finish their working day.

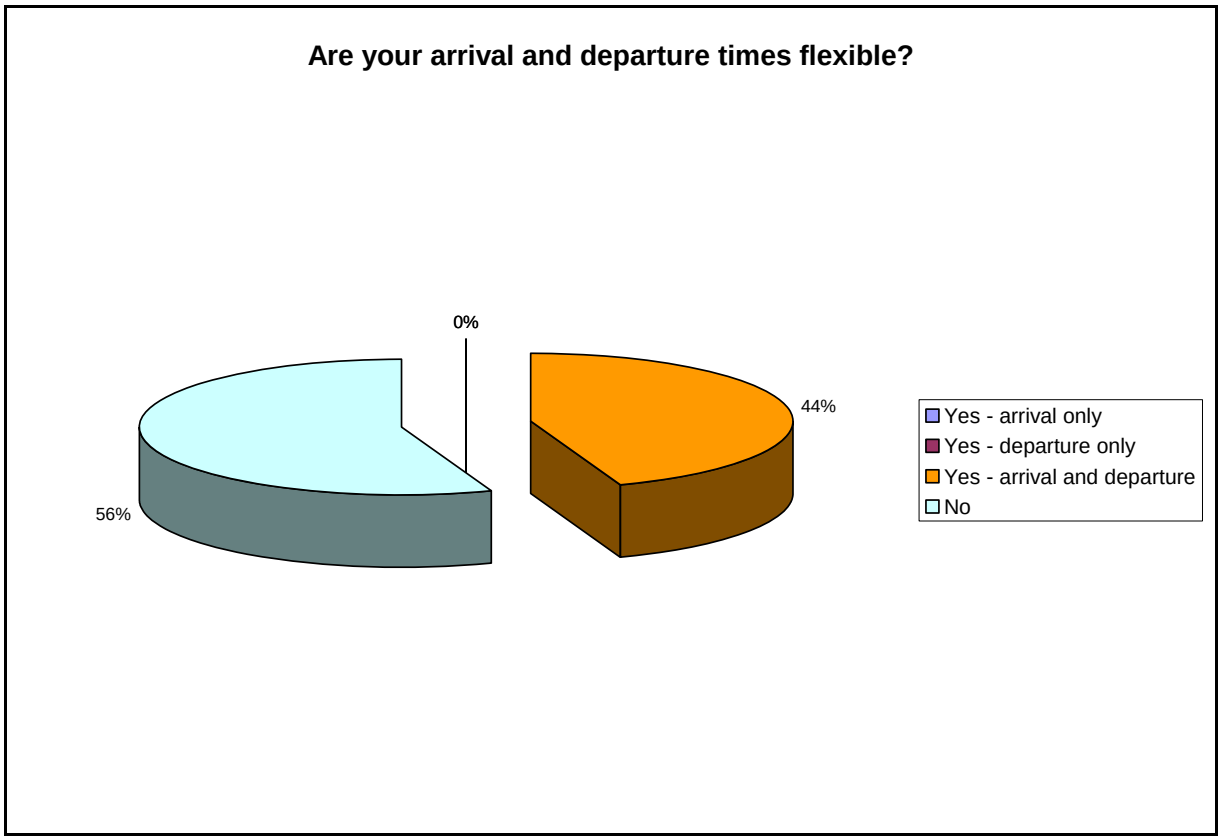

Figure 49: Flexibility in working times at Kelliebank

The survey then established how far respondents were travelling to work. Respondents were asked to estimate how far their journey to work was (Figure 50), and 72% responded that they travelled less than 10 miles to work each day and of those, 61% responded that they travelled 3 miles or less to work each day. These results put employees at Kelliebank in an excellent position regards their travel. A journey of 3 miles is generally considered to be comfortable cycling distance for most adults and 1-2 miles a reasonable walking distance. A journey of less than 10 miles is usually feasible by public transport. For 72% of respondents then, distance should not represent a major barrier to sustainable transport use. Those respondents who are travelling more than 10 miles to Kelliebank (28%) may find access to appropriate public transport services more difficult and walking and cycling is unlikely to be feasible. This does not mean that sustainable travel is not an option however; some suitable public transport options are likely to be available and there may be car sharing opportunities amongst staff with similar travel patterns. Kelliebank should ensure that these respondents are catered for in their travel plan and ensure that these staff are fully informed about the public transport options that exist. Car sharing opportunities should be made available to them and they should be encouraged to use these services.

Respondents were asked if they owned a roadworthy cycle, and only 36% of staff replied that they did, including only 33% of those living within 3 miles or less from work. This significant barrier can easily be removed by helping staff purchase a cycle through a salary sacrifice scheme.

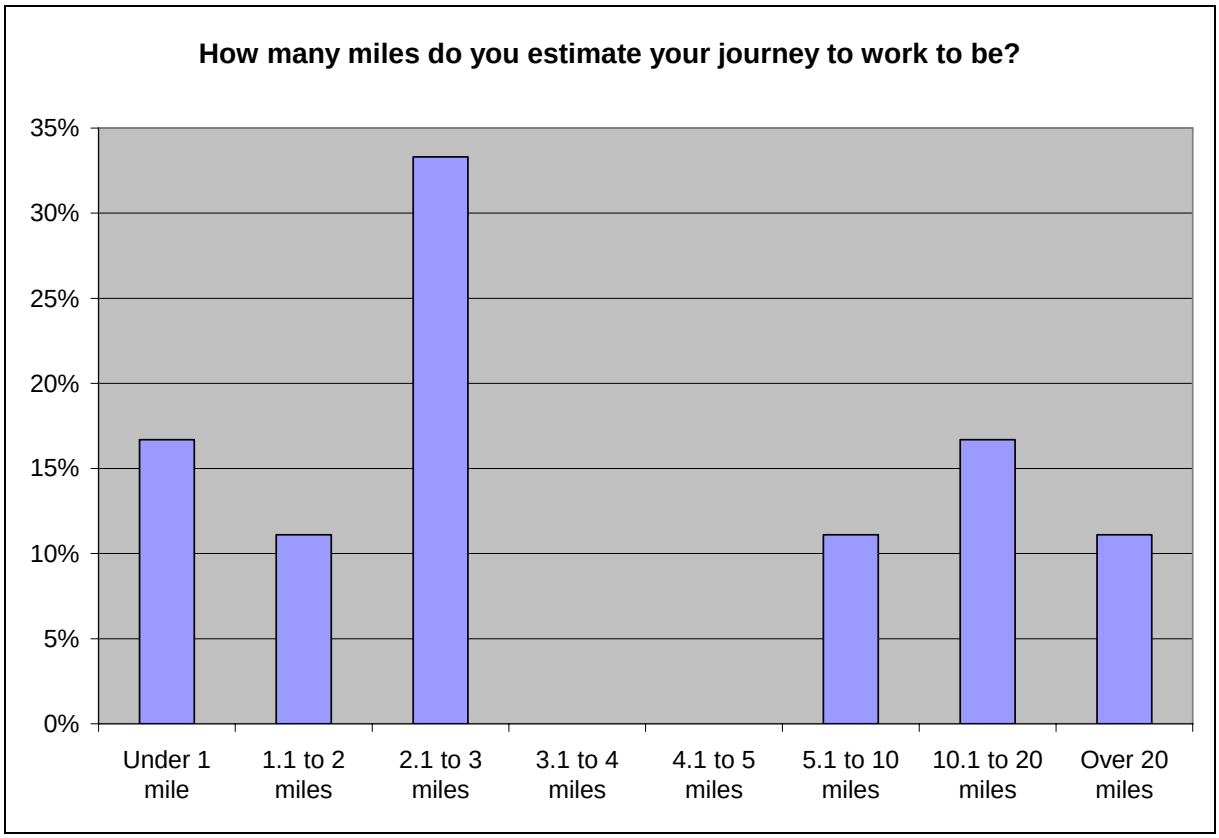

Figure 50- Shows how far respondents estimated their journey to work to be

The survey then looked at current travel patterns and examined the factors that influence current travel patterns.

Figure 52 shows how respondents at Kelliebank typically travel to work. As can be seen the vast majority of respondents travel by car; a total of 78% of commutes are made by car and of those 79% were single occupancy car journeys. As we can see in Figure 51 this high proportion of car journeys is actually slightly lower than the typical for Clackmannanshire. However, it is important to note that Clackmannanshire has the highest proportion of commutes by car in Scotland and, when we compare these results with national figures we can see that this is a particularly high proportion of journeys by car. It is important to note here that this high proportion of car journeys is not simply a result of the high proportion of respondents commuting long distances to work; 55% of respondents who travel 3 miles or less to work a day do so by car.

Only 6% of respondents replied that they walked to work (less than the national and Clackmannanshire average) and 17% of respondents cycled; yet while the proportion of cyclists is encouraging (a relatively high proportion when compared to both regional and national figures) these are nonetheless disappointing figures considering that 61% of respondents live within 3 miles of the site. No respondents replied that they took the bus to work, much less than the national average of 12% and despite an encouraging 72% living within less than 10 miles of the site. This may be a result of a lack of direct public transport

When respondents were asked if they occasionally travelled to work by a different method only 9% of single occupancy car drivers replied that they occasionally walked. Nonetheless if these respondents could be persuaded to make their commute by sustainable modes more frequently this could represent a reduction in proportion of single occupancy car journeys by as much as 9%.

Mode	**Walk**	**Cycle**	**Bus**	**Train**	Car/van Passenger	Car/van Driver	**Car/van Total**	Other	Total (%)
National	**13**	**2**	**12**	**3**	8	60	**68**	2	100
Clackmannanshire	**8**	**0**	**5**	**0**	10	75	**85**	1	100

Figure 51- Employed adults not working from home - usual method of travel to work: 2003/2004[17]

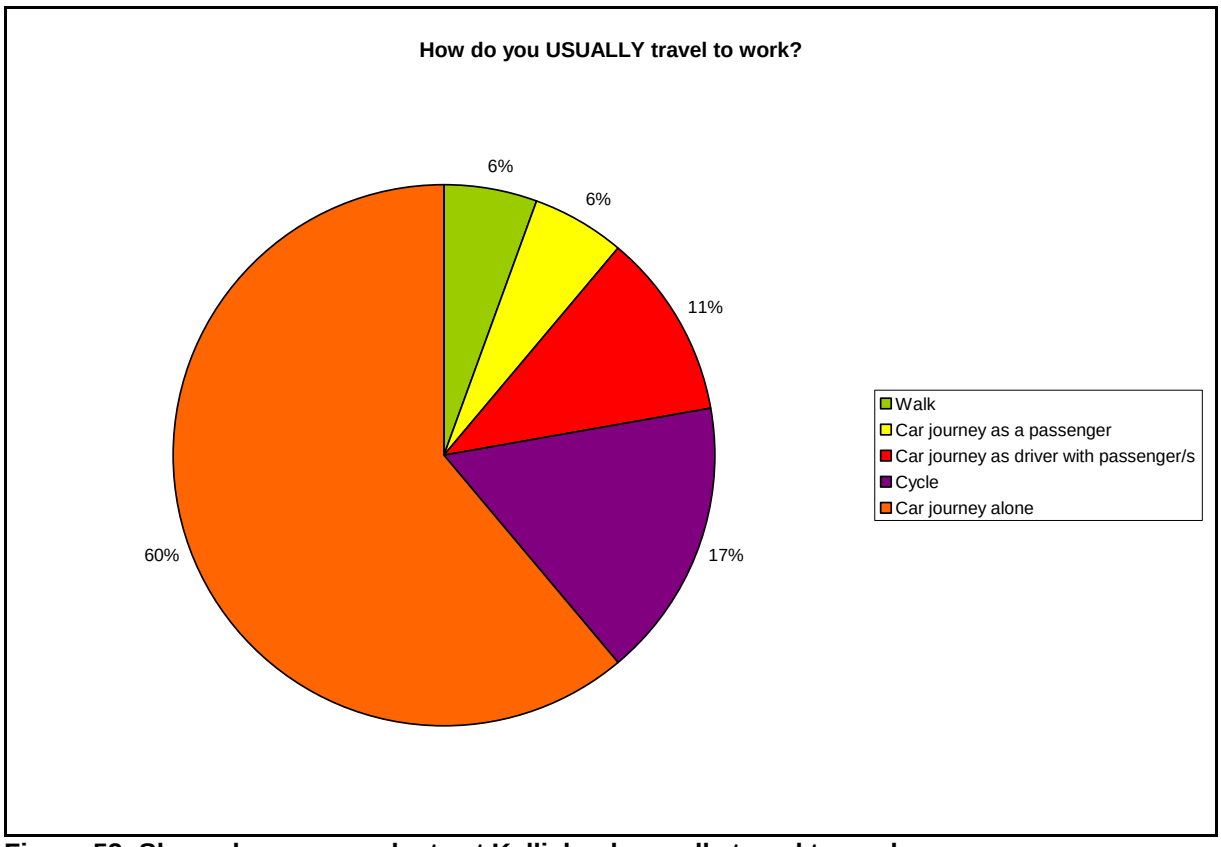

Figure 52- Shows how respondents at Kelliebank usually travel to work

When respondents were asked what the important factors were in their decision to drive to work (Figure 53) the most popular options were 'unrealistic public transport alternatives' and 'convenience' as well as 'Parking is provided at work' and 'Reliability'. Factors such as 'health reasons, 'No suitable cycling/walking routes' and 'I have a lot to carry' were not cited

[17] Source: Scottish Household Survey data 2003/04, Scottish Executive, http://www.scotland.gov.uk/Publications/2006/01/10095727/28

as frequently. It is useful to bear all of these 'drivers' in mind when marketing the travel plan to staff and developing effective travel plan measures.

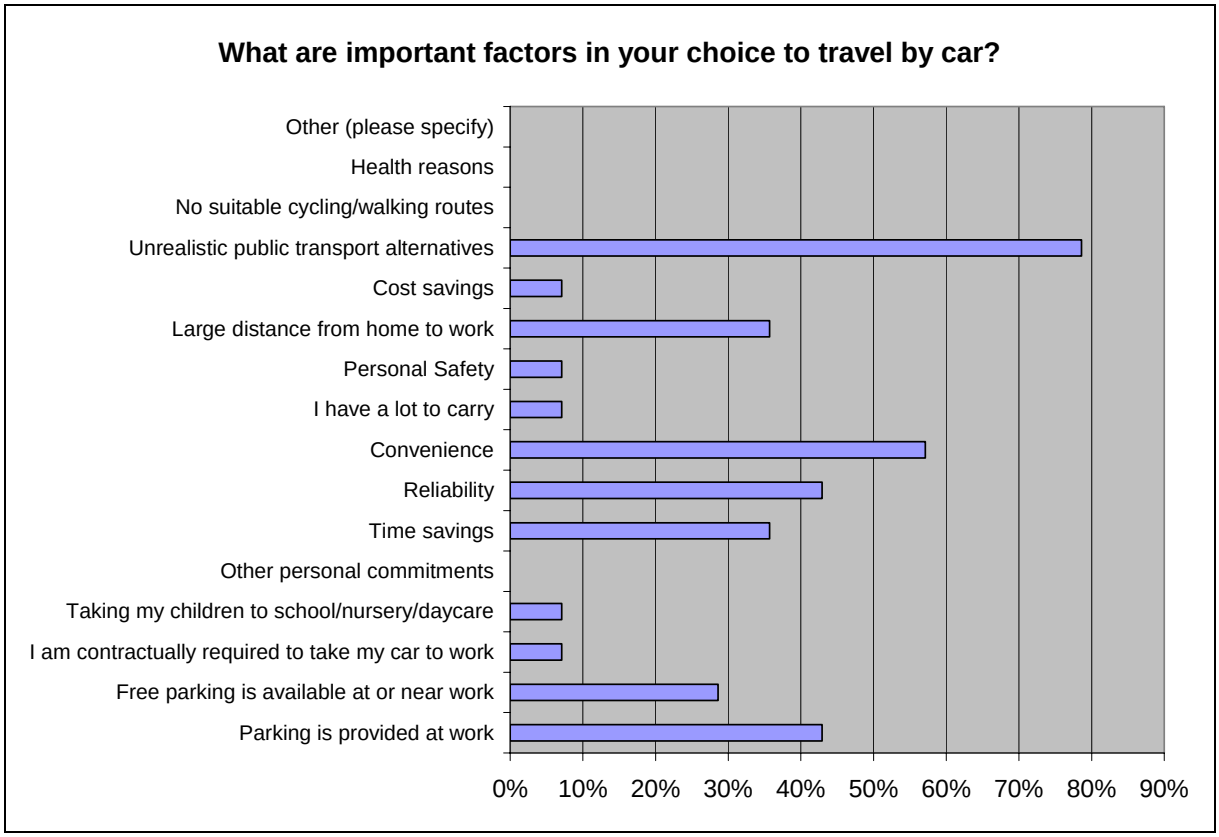

Figure 53- Factors influencing decision to drive to work

When staff know they are required to use their car for work related travel or for personal business during the day they can feel there is no other option but to drive to work. When asked how often they were required to use their car for business travel, 79% of respondents replied that they either never used their car for business travel or did so once a week or less (Figure 54) but only 14% of respondents replied that they did so at least 4 times a week. This is encouraging as it does not represent a particularly high volume of business travel. However Kelliebank may want to bear in mind that - by encouraging staff to use sustainable business travel options and by providing pool cars - Kelliebank could not only make a significant economic saving in terms of mileage claims but may also be able to free up those workers from the need to drive their car to work each day. 100% of respondents who replied that they undertook business travel four times a week or more replied that they would consider not driving to work if pool cars were available for use from time to time. That a reasonable proportion of car driving staff would be prepared not to drive to work from time to time is encouraging and could lead to not insignificant reductions in car use on any one day.

Figure 10 shows that the majority of respondents (64%) replied that they used their car on personal business during the working day once a week or less. However 21% replied that

they used their car for personal business more than four times a week. By providing staff with information and encouraging the use of local amenities Kelliebank may be able to almost eliminate the need for staff to use their car for personal business during the day. The provision of pool bicycles for staff to use for slightly longer trips may also be beneficial, as well as encouraging healthy living.

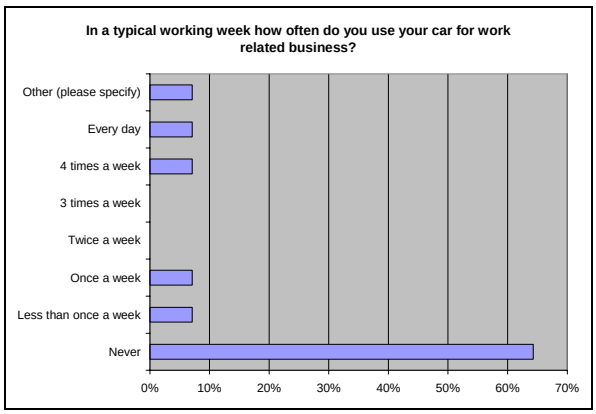

Figure 54- Business travel

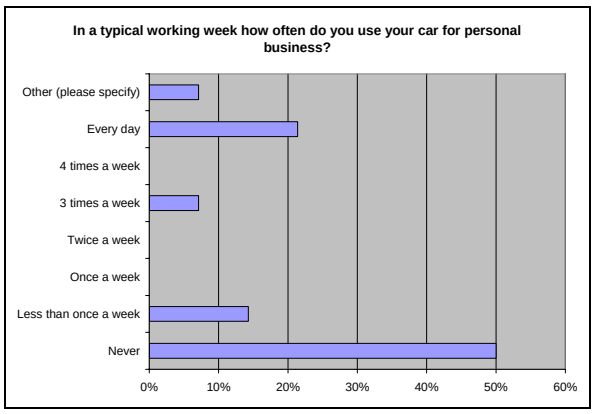

Figure 55- Personal travel during the working day

93% of those that commuted to work by car told us that they parked in the work provided car park. Figure 57 shows how frequently those people reported finding a place to park a problem. Over half of respondents reported that they had found finding a place a problem at some stage and 21% reported that they had regular problems. 43% of respondents felt that the council staff and operations would benefit from more effective car park management. A good travel plan can provide more effective car parking management and can ensure that spaces are available for those that most need them.

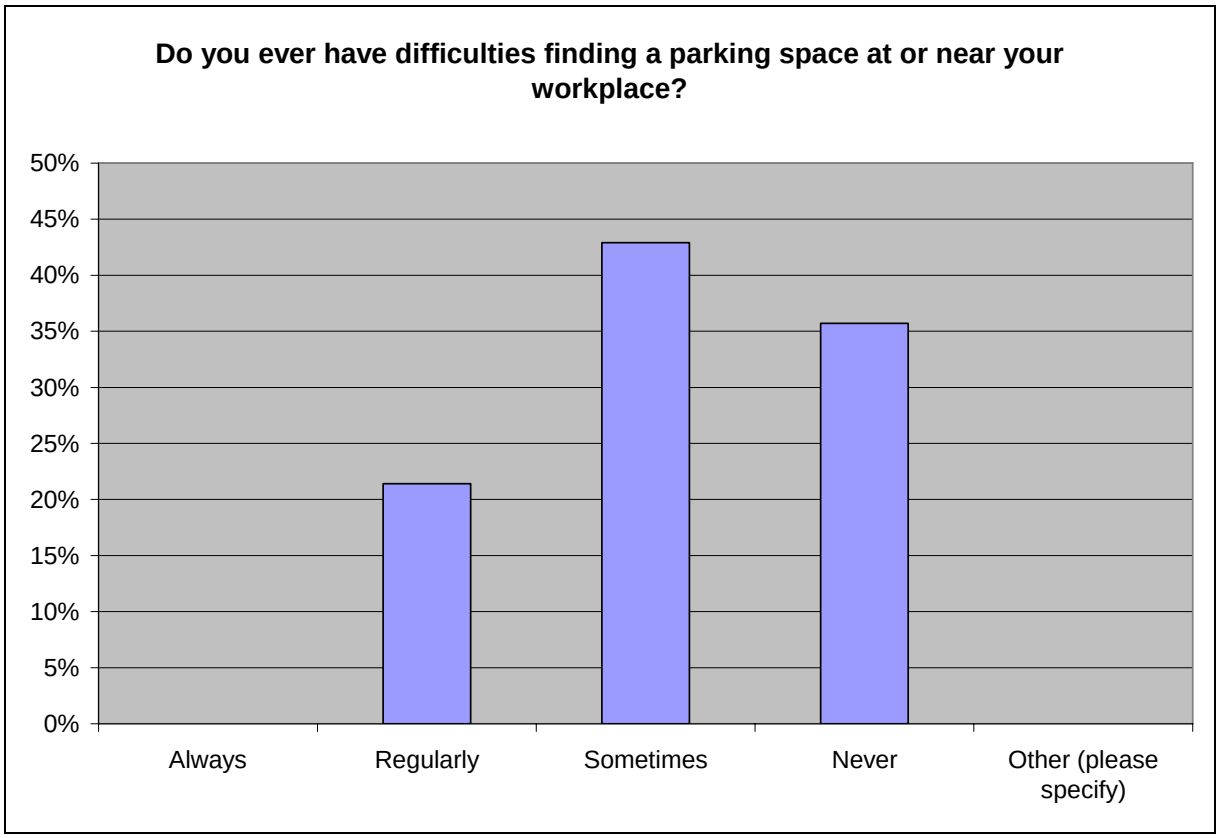

Figure 56- Reported frequency of difficulty in finding a car parking space

As well as establishing a picture of current travel behaviour, the survey was interested in finding out what kind of measures might encourage staff to consider sustainable transport options. Again these results will help optimise travel planning measures for Kelliebank.

Respondents were asked to consider which incentives might encourage more people to car share (Figure 57). Over 60% of respondents rated the following incentives as likely to be either 'Effective' or 'Very effective'; 'A guaranteed lift home in an emergency' and 'A Guaranteed ride home if your car share partner lets you down'. When respondents were asked if they would be willing to car share if a colleague with a suitable location and similar work pattern could be found 47% replied that they would and 13% replied that they already did so.

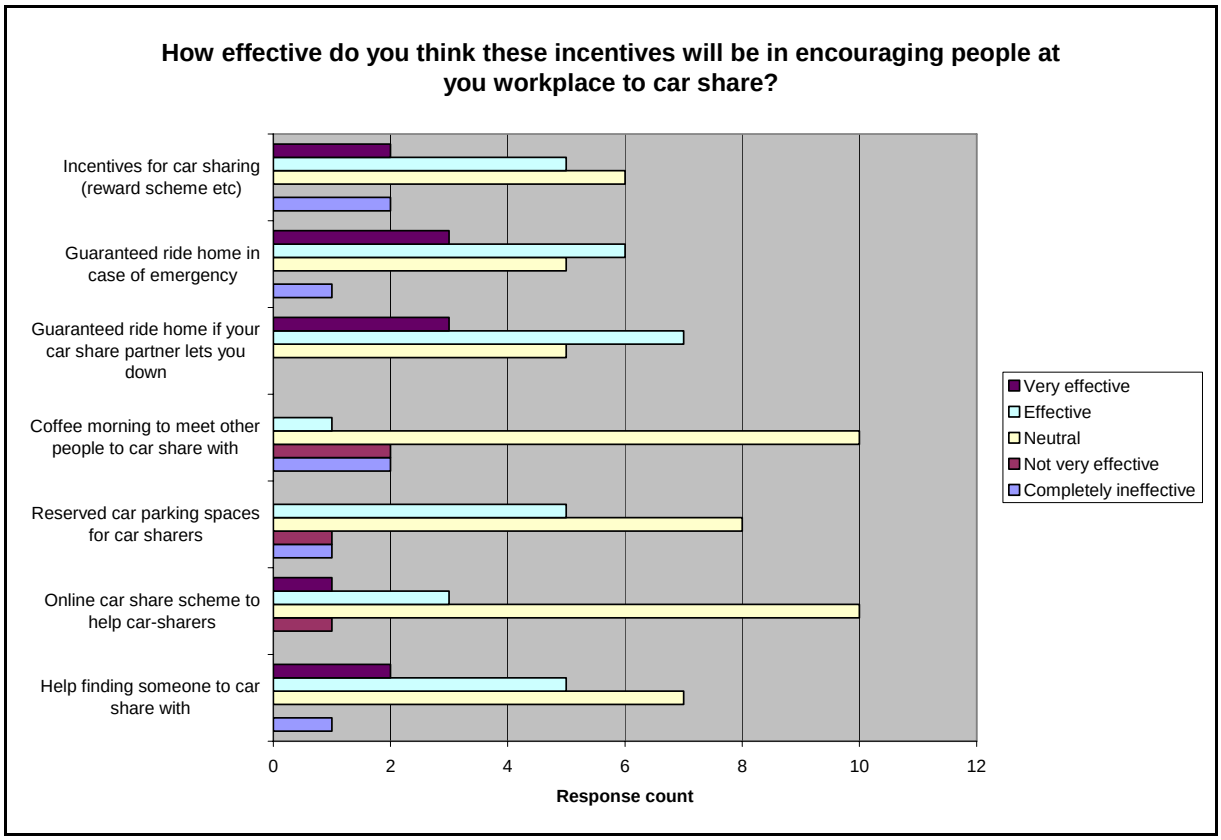

Figure 57- Encouraging staff to car share

Respondents were then asked to consider which incentives might encourage more people to walk or cycle to work (Figure 58). Over 75% rated the following option as likely to be either 'Highly Effective' or 'Effective'; 'Improved footpaths/cycle paths to work' and 'A guaranteed ride home in an emergency'.

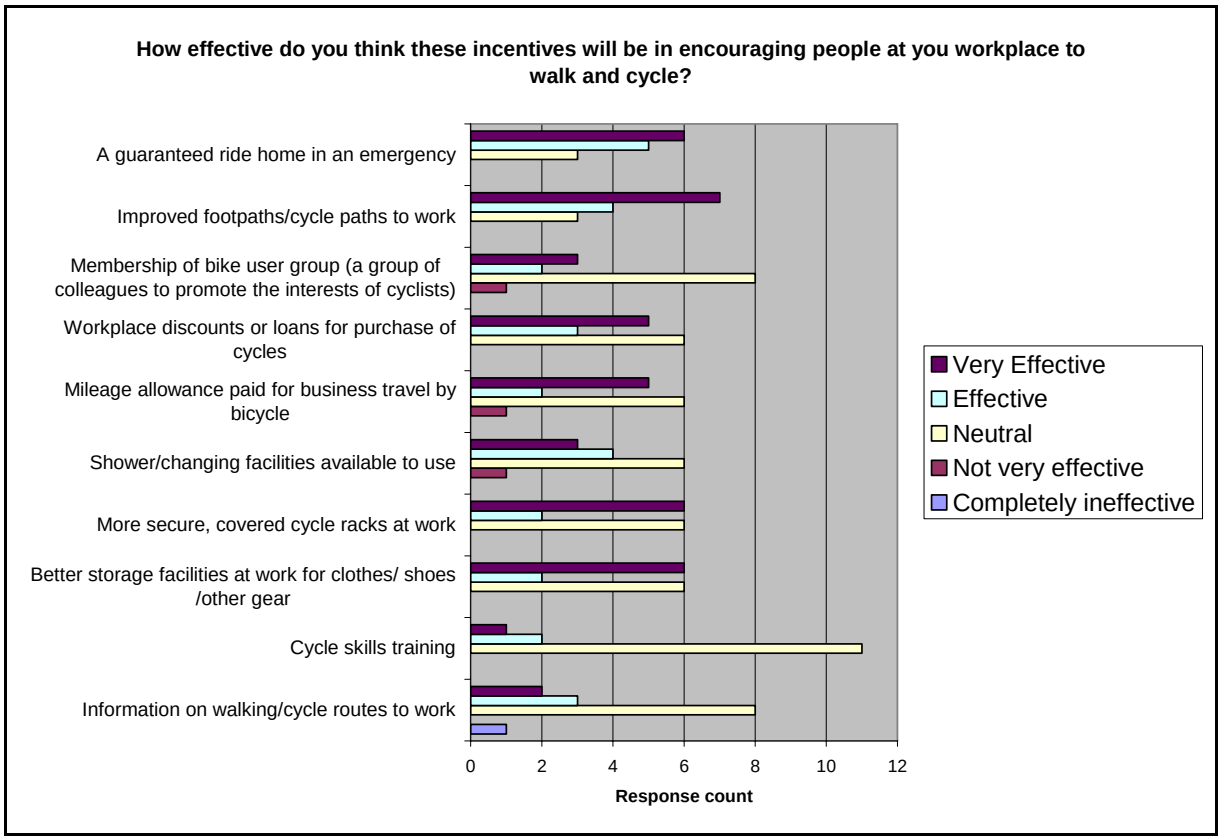

Figure 58- Rating incentives to encourage more people to walk or cycle to work

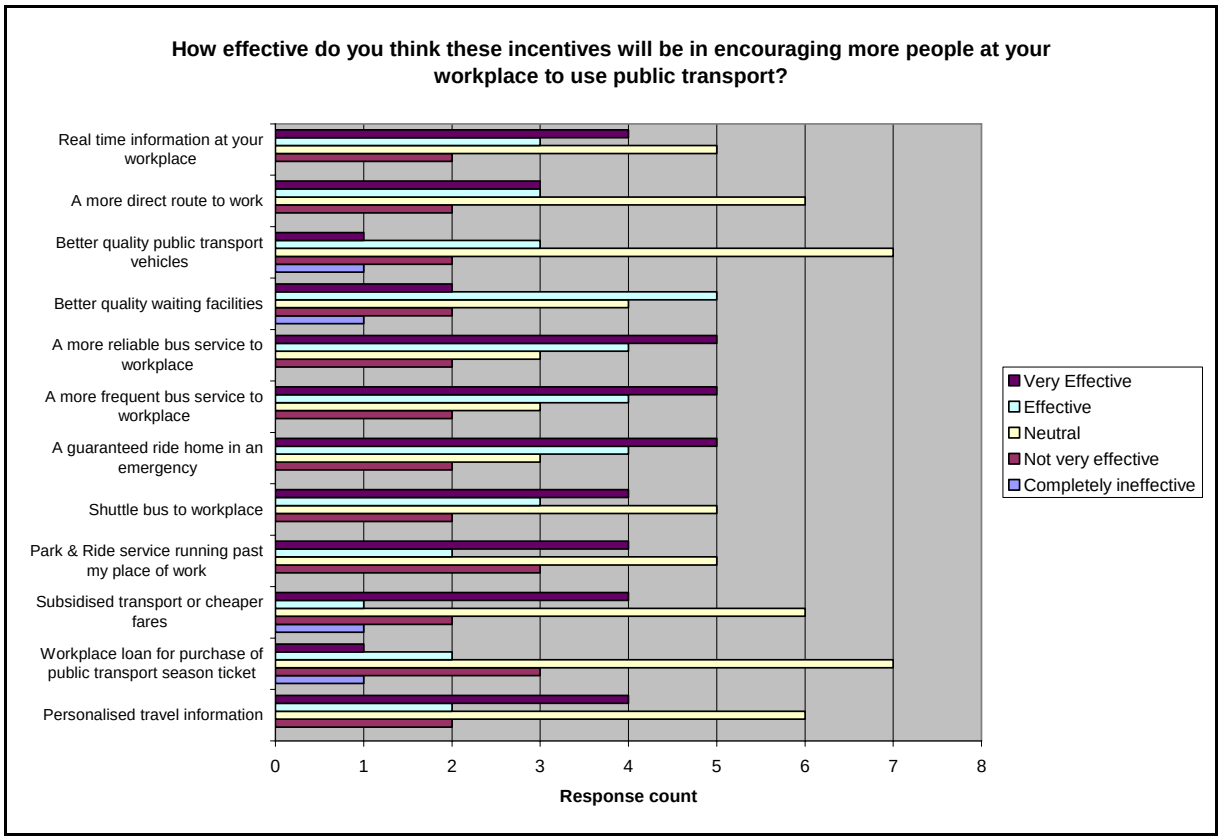

Figure 59- Encouraging staff to use public transport

Respondents were then asked to consider which incentives might encourage more people to use public transport to get to work (Figure 59). 50% rated the following options as likely to be either 'Highly Effective' or 'Effective'; 'A guaranteed ride home in an emergency', 'A more frequent bus service to workplace' and 'A more reliable bus service to workplace'. That staff were less keen to rate these incentives as likely to be 'Effective' or 'Highly Effective' is probably a result of the current lack of direct services to Kelliebank (a trip by public transport would also involve a walk of 1 mile from Alloa town centre). It is recommended that Clackmannanshire Council investigate the possibility of developing public transport services to the site or running a workplace shuttle bus service from Alloa town centre (approximately 40% of respondents rated this as likely to be 'Effective' or 'Highly Effective'); such services would not only benefit Council employees but would also benefit employees of other tenants of the site.

Finally, respondents were asked how satisfied they were with their journey to work. While 64% of respondents were 'Fairly satisfied' or 'Very satisfied', 60% would like their journey to be more environmentally friendly and 50% would like their journey to be healthier. These results are encouraging as they suggest that commutes at Kelliebank can really be improved by travel planning measures as sustainable transport options are certainly more environmentally friendly and are healthier too.

This 'wish list' should be borne in mind when marketing the benefits of sustainable travel options.

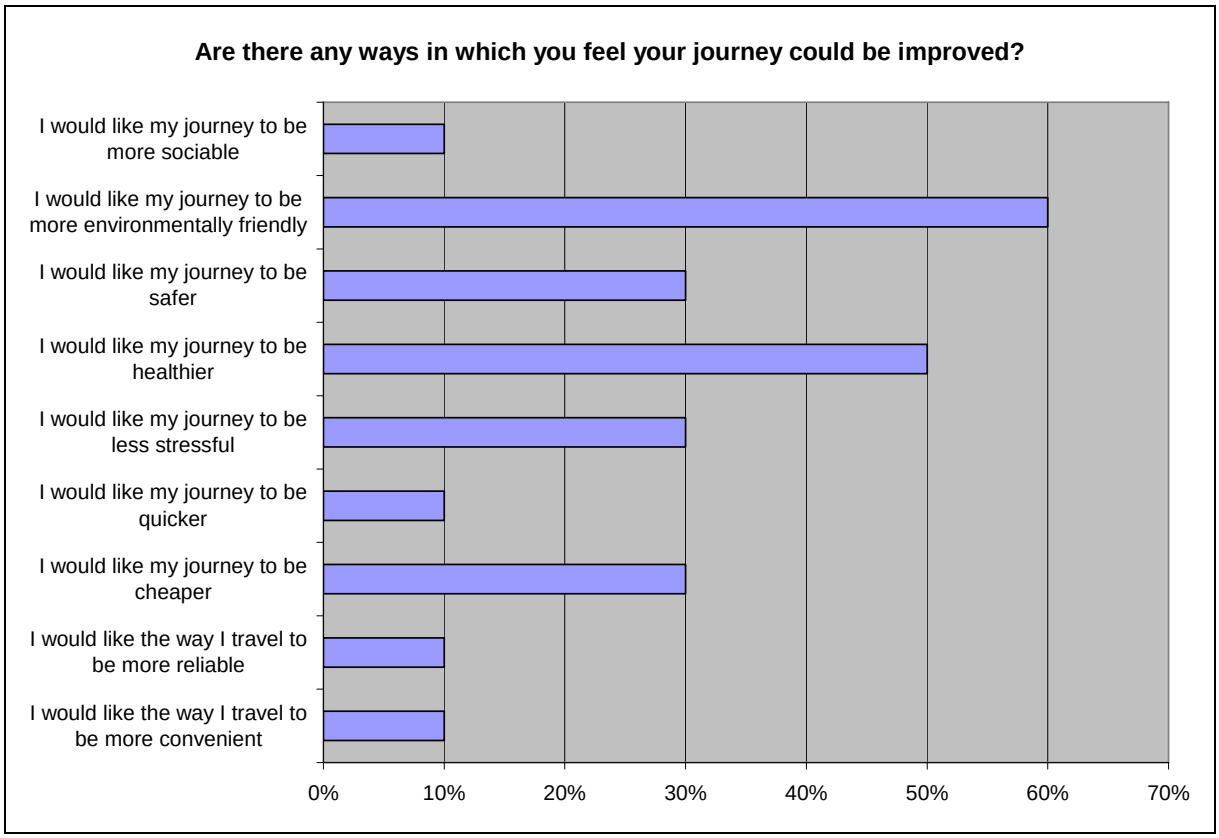

Figure 60- Ways in which staff felt their journey could be improved

3.7 Clackmannanshire Council- an overview

The previous sections presented survey results for Clackmannanshire Council's main sites; the following section considers survey results for Clackmannanshire Council as a whole. The summary presented here should highlight any council wide trends and may be used to inform a council wide travel planning policy that will guide travel planning at all council sites. Such a policy will be particularly useful in directing travel planning at the Council's smaller sites which are not considered here separately.

Post Code Cluster Mapping

A map of employee home locations has been produced for all Clackmannanshire Council staff who replied to the staff survey. The information provided by this map will be useful in identifying the spatial relationships between staff homes and Council locations. In particular, the map helps to highlight opportunities and barriers associated with walking, cycling, public transport and car-sharing for current staff.

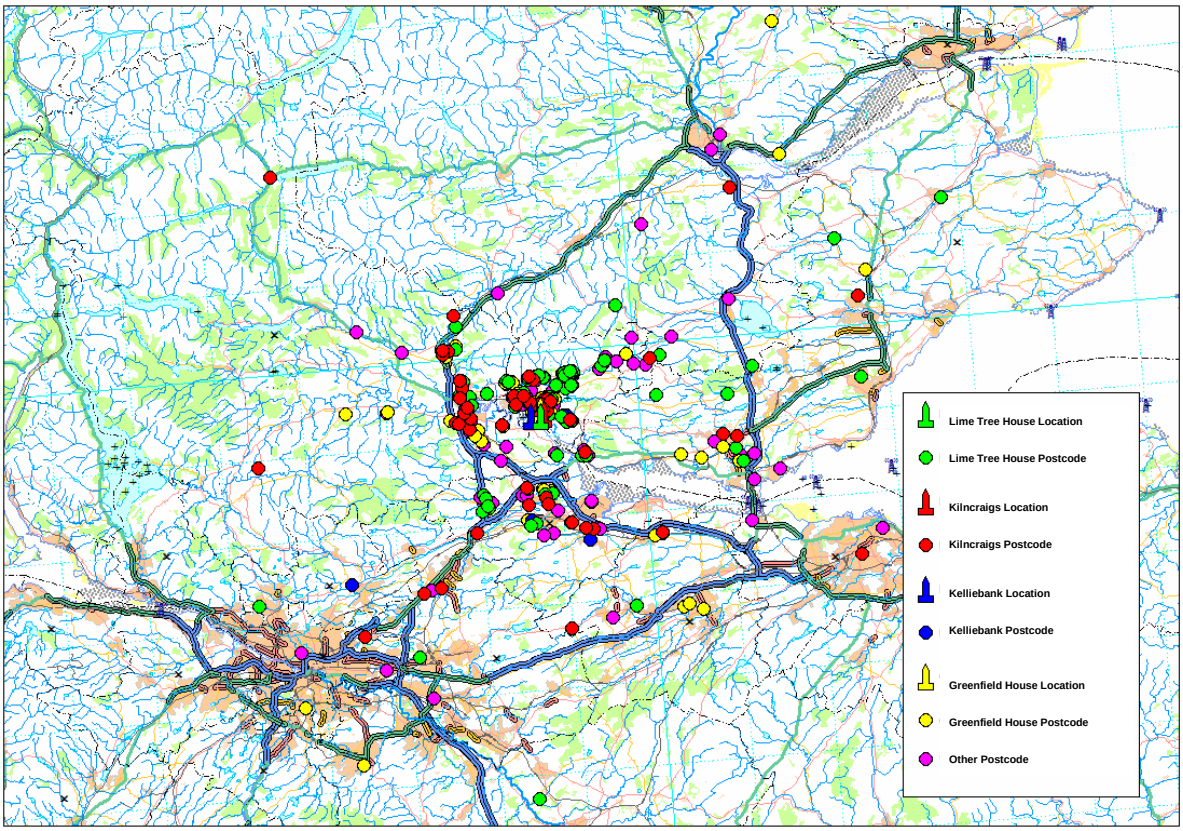

Figure 61- Employee home locations for Clackmannanshire Council

Figure 61 shows the home locations of all Clackmannanshire employees surveyed. Employees of Lime Tree House, Greenfield House, Kilncraigs, Kelliebank Depot and other council locations are identified by coloured circles. This map illustrates the relatively wide

catchment area for Clackmannanshire Council employees. As we can see some employees are commuting to Clackmannanshire Council locations from as far afield as Perth, Edinburgh and Glasgow. However, the majority of employees are commuting from within Clackmannanshire Council area.

Most staff surveyed at Clackmannanshire Council live in Tullibody, Alloa or Clackmannanshire with residential clusters in Menstrie and Tillicoultry. The concentration of staff in these locales is encouraging as it offers good opportunities for sustainable travel; urban areas such as Alloa tend to be better developed in terms of public transport because demand is generally high enough to make services financially viable; walking and cycling routes are often more widely available in these areas and clusters of staff offers good potential for car sharing.

Clackmannanshire Council also benefits from a high proportion of staff located within 3 miles of Alloa town centre and a large proportion of whom are within 1 mile of Alloa town centre. With a 1-2 mile journey a comfortable walking distance for most adults and 3 miles a comfortable cycle, distance is not a barrier to sustainable travel for a large proportion of staff based at council locations in Alloa and it is important that Clackmannanshire Council take advantage of this situation and ensure that their staff have access to and are well informed of suitable public transport, walking and cycling routes to work.

Summary of survey results for Clackmannanshire Council

In total 428 responses were received, represent approximately 15% of Clackmannanshire Council staff. Of these:

- 64% of respondents were women and 36% were men.
- 81% of respondents were aged 54 or under.

Table 2 shows the return rates for each of the 4 main council sites.

Table 2- Return rates

Location	Return Rate %
Lime Tree House	29
Greenfield House	42
Kilncraigs	53
Kelliebank	8

The proportion of respondents based across all sites is shown below.

Table 3- Breakdown of respondents according to site

Location	Percentage %
Lime Tree House	24
Greenfield House	17
Kilncraigs	15
Kelliebank	4
Other	39

The vast majority of those surveyed (90%) start work between 8 and 10 am and finish work between 4 and 7pm (92%). These times broadly coincide with periods of peak public transport provision. As most staff start and finish at broadly the same time there are also plenty of opportunities for car sharing.

Other key results include:

- 71% of staff have flexible start and finish times and therefore have the opportunity to, within limits, adjust their working day according to suitable public transport services.
- 96% of staff surveyed work during the week, with only 4% working on Saturday or Sundays.
- 69% of staff surveyed live less than 10 miles from their workplace and 37% of staff live less than 3 miles from their workplace. There are therefore good opportunities for current staff to take up sustainable travel options such as walking, cycling and travel on public transport.
- 3% of staff surveyed have a disability that affects their method of travel to work.
- 96% of staff surveyed have a full driving licence and 90% have access to a car all day.
- 43% of staff surveyed indicated that they would be willing to Car-share if a colleague with a suitable location and working pattern could be found and 7% replied that they already did so.

Table 4 shows how staff surveyed at Clackmannanshire Council typically travel to work and compares this with national figures. The proportion of staff driving to work by car or as a passenger is notably higher than the national average and walking, cycling and public transport use notably lower.

Table 4- Employed adults not working from home - usual method of travel to work: 2003/2004[18] (Scotland) and staff surveyed at Clackmannanshire Council

Mode	**Walk**	**Cycle**	**Bus**	**Train**	Car/van	Car/van Driver	**Car/van Total**	Other	Total (%)
National	**13**	**2**	**12**	**3**	8	60	**68**	2	100
Clackmannanshire Council staff	**6**	**1**	**3**	**0**	3	84	**87**	3	100

24% of car drivers surveyed indicated that they occasionally travelled to work on foot, by cycle, by bus, via a park and ride facility or as a car passenger. If these car drivers can be encouraged to travel this way more frequently this would lead to a significant reduction in the proportion of staff driving to work.

In addition:

- 41% of car drivers surveyed use their car for business travel less than once a week.
- 37% of car drivers surveyed use their car for business travel more than 4 times a week and 27% are essential car users.
- 57% of car drivers use their cars for personal business during the working day once a week or less and 20% use their cars for personal business 4 times a week or more.
- 18% of those that undertake business travel more than 4 times a week indicated that they would consider not driving to work if pool cars were available and 21% indicated that they would do so from time to time.
- 83% of car drivers surveyed use a work provided car park, 6% park in the street and 9% park in off street parking areas.
- 56% of respondents reported having difficulty in securing a parking space at some time, with 10% indicating that they regularly or always faced difficulties.
- When asked 'Do you think council staff and operations would benefit from better car parking management?' 41% replied yes and 34% were unsure.
- The most common factors cited as being important in a staff members decision to drive to work were: 'Unrealistic public transport alternatives', 'Convenience' and 'Time savings'. 'Health reasons', 'No suitable cycling/walking routes' and 'I have a lot to carry' were least common.

[18] Source: Scottish Household Survey data 2003/04, Scottish Executive, http://www.scotland.gov.uk/Publications/2006/01/10095727/28

When respondents were asked what kind of incentives they felt would be effective in encouraging people at their workplace to Car-share over 70% indicated that they felt that the following incentives were likely to be 'Effective' or 'Very Effective'; 'Guaranteed ride home if your Car-share partner lets you down' and 'Guaranteed ride home in case of emergency'.

When respondents were asked what kind of incentives they felt would be effective in encouraging people at their workplace to walk or cycle over 75% indicated that they felt that the following incentives were likely to be 'Effective' or 'Very Effective'; 'Better storage facilities at work for clothes/ shoes /other gear', 'More secure, covered cycle racks at work', 'Shower/changing facilities available to use' and 'Improved footpaths/cycle paths to work'.

When respondents were asked what kind of incentives they felt would be effective in encouraging people at their workplace to walk or cycle over 70% indicated that they felt that the following incentives were likely to be 'Effective' or 'Very Effective'; 'Subsidised transport or cheaper fares', 'Park & Ride service running by place of work', 'A more frequent bus service to workplace', 'A more reliable bus service to workplace' and 'A more direct route to work'.

When respondents were asked what kind of measures they felt would be effective in encouraging people at their workplace to walk or cycle the measures rated as most likely to be 'Effective' or 'Very Effective' were; 'Formalised work from home scheme' and 'Flexitime policy'.

When respondents were asked if they felt there were any ways in which their journeys could be improved the most popular responses were; 'I would like my journey to be cheaper', 'I would like my journey to be more environmentally friendly' and 'I would like my journey to be quicker'. These are all outcomes that can be achieved via sustainable travel and are worth bearing in mind when marketing the Clackmannanshire Council travel plans.

Finally, respondents were asked to put forward their own suggestions as to how Clackmannanshire Council could make sustainable travel options more attractive. Their responses are detailed below:

Have meetings where the majority of people can walk to and from their workplace

Clacks is unique in its area. Give information out as to how we get from Alloa to Dollar and back quickly, conveniently and safely.

Provision of a Council computer with software and technical support

Working from other council's offices

Kill the ability to claim mileage for car trips within a 2.5 mile radius of workplace.

Encourage more teams to use public transport to meetings in Edinburgh, etc. I hear of many people taking their cars.

Flexitime policy in place for many employees, not sure what 'compressed hours' means. Most car trips made by members of my team are to other council locations. Development and better publicity of the scheme for sharing trips during the day would be beneficial. I also think mileage claims for walkable distances should be paid - I have no option but to walk, why should other people get money back for petrol when I don't get money for wear and tear on my shoes!

Open the Wagon Way to improve walking routes in Alloa.

Diary management re meetings enabling attendees to travel together.

Better bus services

Fewer meetings and a more centralised meeting base within Alloa.

Cut back on unnecessary meetings.

Have worked with compressed hours system in the past. This did reduce journeys and freed up car parking spaces.

3.8 Carbon emissions from car journeys to work

It now generally accepted that if we are to avoid potentially catastrophic economic, environmental and social consequences of climate change, we must significantly cut our climate change emissions. 40% of all CO_2 emissions each year come directly from the actions of individuals, and of those, 40% are generated from travel.[19] By making small changes to our travel habitats we can reduce our carbon footprint and in doing so each play an important role in tackling climate change. As a public service employer Clackmannanshire Council has a responsibility to help make those changes to travel behaviour as easy as possible for its employees and in doing so help Scotland achieve its climate change targets.

As Table 5 illustrates car travel produces by far the most CO_2 emissions per km when compared with public transport options such as rail or bus. Walking or cycling are effectively CO_2 free. Where walking cycling or public transport options are not available car sharing is the next best option as the CO_2 emissions created by the car journey are shared by everyone in the car.

Table 5: Average CO_2 emissions per km by transport mode

Vehicle type	Details	gCO_2/km
Average car		*205.9*[20]
Average motorcycle	Average	*106.7*[21]
Bus		*89.1*[10]
Rail	Average National Rail	*60.2*[10]

During the course of the travel survey, staff were asked to provide information about their work patterns, the distance of their commute, the type of car they travelled in, the size of their engine and the number of other people they shared their journey with. Based on this data Vipre UK was able to produce an indication of the CO_2 generated from car commutes to and from its major sites over the course of one year. The dataset and calculations used to produce this estimate are detailed in Appendix 2.

This calculation can provide a useful baseline for these sites and may be used to set targets and measure travel planning progress in subsequent years; as car travel reduces and car sharing increases amongst staff the average CO_2 emissions per staff member will fall.

[19] DEFRA 2007, Act On CO2 Calculator; Data, Methodology & Assumptions Paper at www.defra.gov.uk/environment/climatechange/uk/individual/actonco2/index.htm
[20] DEFRA 2007, Act On CO2 Calculator; Data, Methodology & Assumptions Paper at www.defra.gov.uk/environment/climatechange/uk/individual/actonco2/index.htm
[21]DEFRA 2007, greenhouse gas (GHG) conversion factors for company reporting at www.defra.gov.uk/environment/business/envrp/pdf/conversion-factors.pdf

Lime Tree House

In total 97 staff responded to the Lime Tree House survey and of these 89 replied that they travelled to work by car alone, by car as a passenger or by car with a passenger.

In total, car commutes were estimated to generate approximately 95.3 tonnes of CO_2 per year. This equates to 1.1 tonnes of CO_2 per year from each respondent that travelled by car and an average of 0.98 tonnes of CO_2 per staff member[22] who responded to the survey.

Figure 62 illustrates how much CO_2 is generated over the course of one year by an average individual in the UK and compares this with the CO_2 generated just through commuting by the average car user at Lime Tree House.

If we assume that car travellers at Lime Tree House have a comparable CO_2 footprint to the average UK individual then we can see that their commute currently accounts for 24%- almost a quarter - of their carbon footprint. If these staff were to start walking or cycling to work tomorrow they could effectively cut their carbon footprint by one quarter over night.

By implementing measures that will help their staff make sustainable travel choices Clackmannanshire Council is therefore providing staff with the opportunity to dramatically reduce their carbon footprint.

[22] This is the figure that may be used as a baseline measure. Travel planning measures should be designed to reduce this figure.

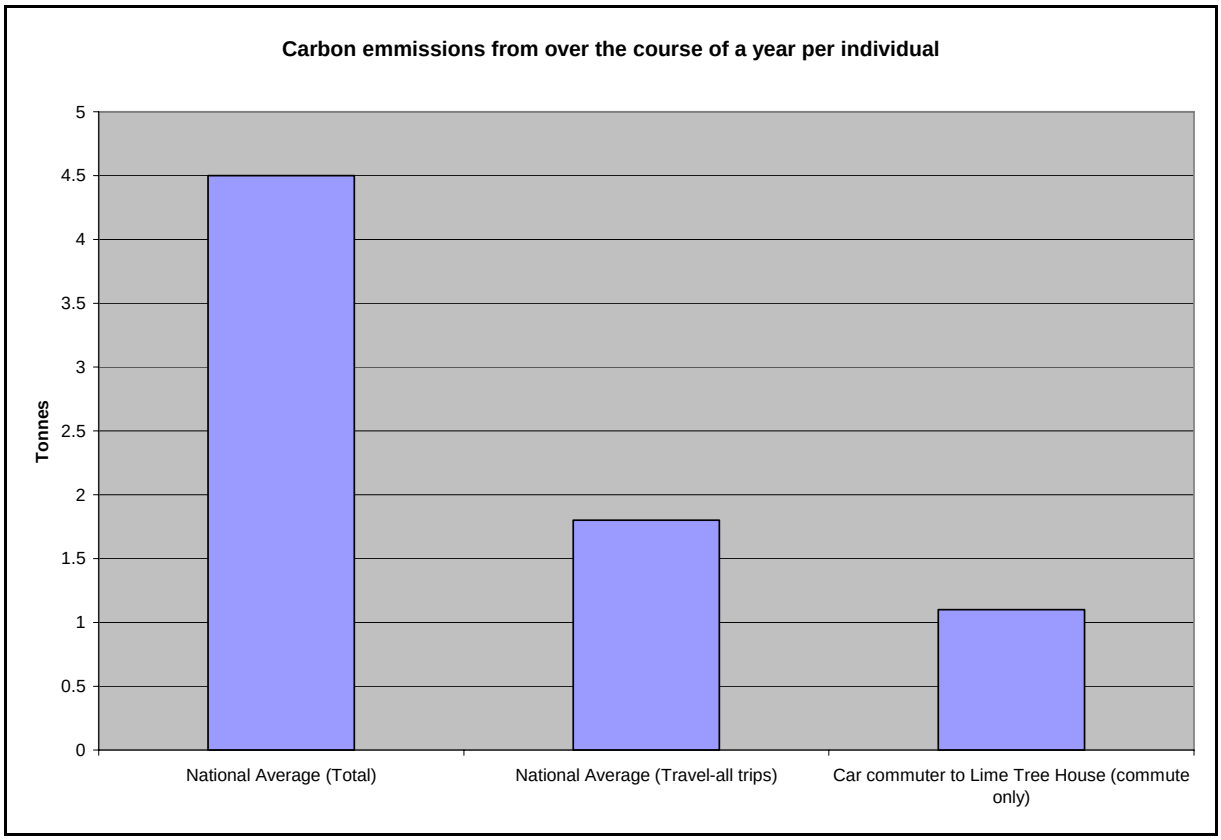

Figure 62- Carbon emissions from travel over the course of one year

Greenfield House

In total 70 staff responded to the Greenfield House survey and of these 59 replied that they travelled to work by car alone, by car as a passenger or by car with a passenger.

In total, car commutes were estimated to generate approximately 64.2 tonnes of CO_2 per year. This equates to 1.1 tonnes of CO_2 per year from each respondent that travelled by car and an average of 0.92 tonnes of car per staff member[23] who responded to the survey.

Figure 63 illustrates how much CO_2 is generated through over the course of one year by an average individual in the UK and compares this with the CO_2 generated just through commuting by the average car user at Greenfield House.

If we assume that car travellers at Greenfield House have a comparable carbon footprint to the average UK individual then we can see that their commute currently accounts for 24%- almost a quarter- of their carbon footprint. If these staff were to start walking or cycling to work tomorrow they could effectively cut their carbon footprint by one quarter over night.

[23] This is the figure that may be used as a baseline measure. Travel planning measures should be designed to reduce this figure.

By implementing measures that will help their staff make sustainable travel choices Clackmannanshire Council is therefore providing staff with the opportunity to dramatically reduce their carbon footprint.

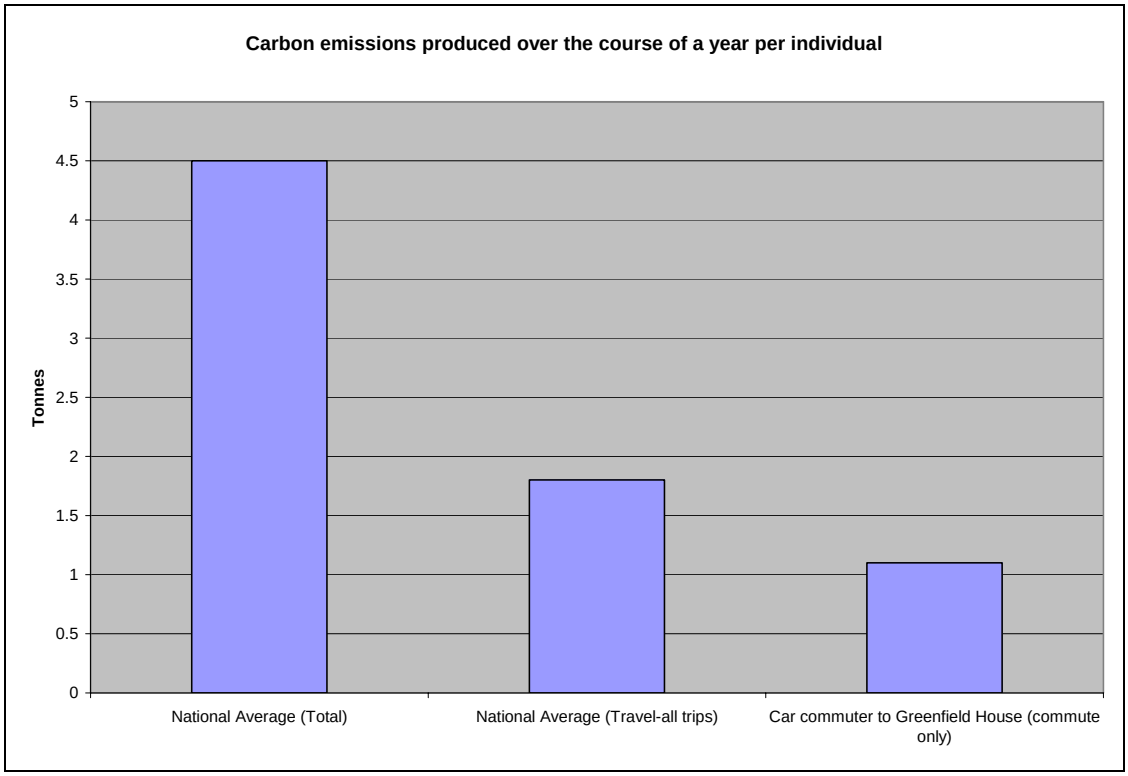

Figure 63-Carbon emissions over the course of one year

Kilncraigs

In total, 70 staff responded to the Kilncraigs survey and of these, 59 replied that they travelled to work by car alone, by car as a passenger or by car with a passenger.

In total car commutes were estimated to generate approximately 81.4 tonnes of CO_2 per year. This equates to 1.6 tonnes of CO_2 per year from each respondent that travelled by car and an average of 1.2 tonnes of CO_2 per staff member[24] who responded to the survey.

Figure 64 illustrates how much CO_2 is generated through over the course of one year by an average individual in the UK and compares this with the CO_2 generated just through commuting by the average car user at Kilncraigs.

[24] This is the figure that may be used as a baseline measure. Travel planning measures should be designed to reduce this figure.

If we assume that car travellers at Kilncraigs have a comparable carbon footprint to the average UK individual then we can see that their commute currently accounts for 35% - over one third - of their carbon footprint. If these staff were to start walking or cycling to work tomorrow they could effectively cut their carbon footprint by one third over night.

By implementing measures that will help their staff make sustainable travel choices Clackmannanshire Council is therefore providing staff with the opportunity to dramatically reduce their carbon footprint.

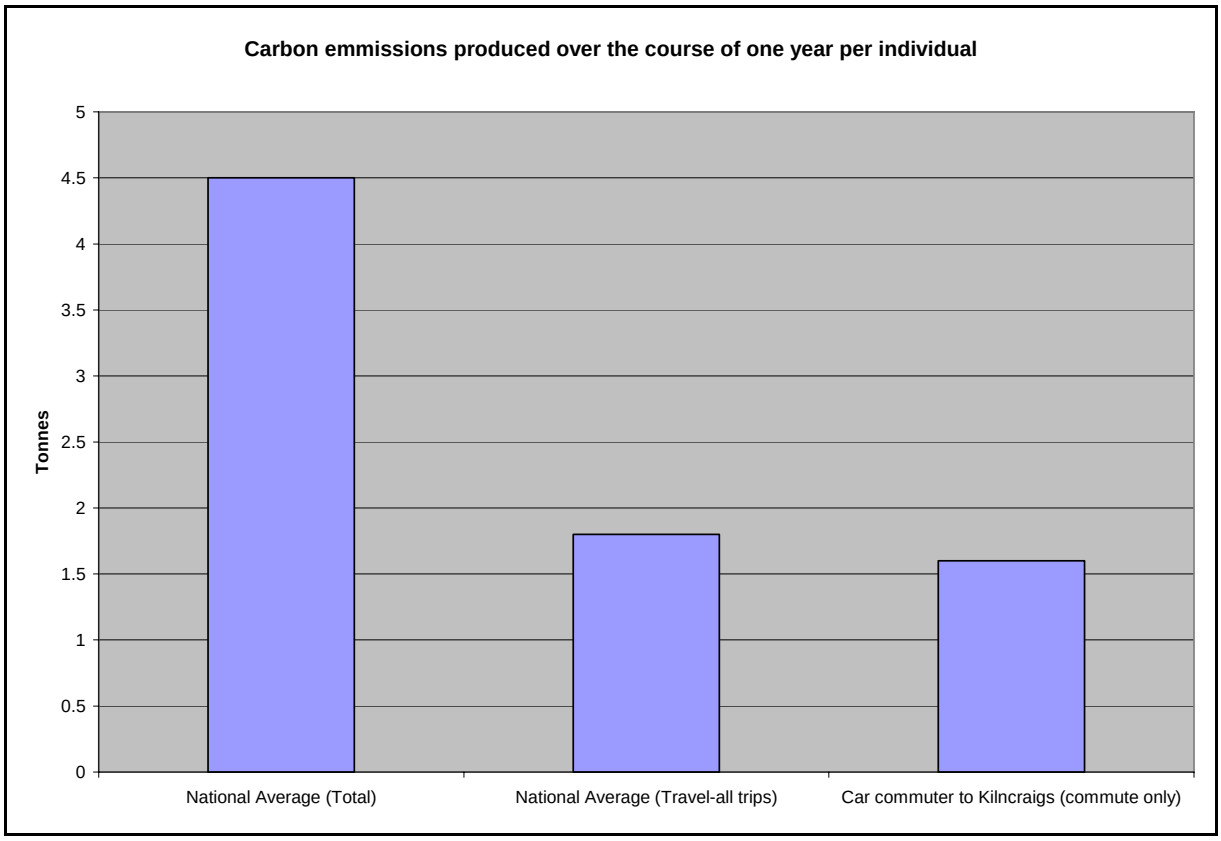

Figure 64- Carbon emissions over the course of one year

Kelliebank Depot

18 staff responded to the Kelliebank Depot survey, and of these, 14 replied that they travelled to work by car alone, by car as a passenger or by car with a passenger.

In total, car commutes were estimated to generate approximately 18.1 tonnes of CO_2 per year. This equates to 1.3 tonnes of CO_2 per year from each respondent that travelled by car and an average of 1 tonne of CO_2 per staff member[25] who responded to the survey.

Figure 65 illustrates how much CO_2 is generated through over the course of one year by an average individual in the UK and compares this with the CO_2 generated just through commuting by the average car user at Kelliebank.

If we assume that car travellers at Kelliebank have a comparable carbon footprint to the average UK individual then we can see that their commute currently accounts for 28% - almost one third - of their carbon footprint. If these staff were to start walking or cycling to work tomorrow they could effectively cut their carbon footprint by one third over night.

By implementing measures that will help their staff make sustainable travel choices Clackmannanshire Council is therefore providing staff with the opportunity to dramatically reduce their carbon footprint.

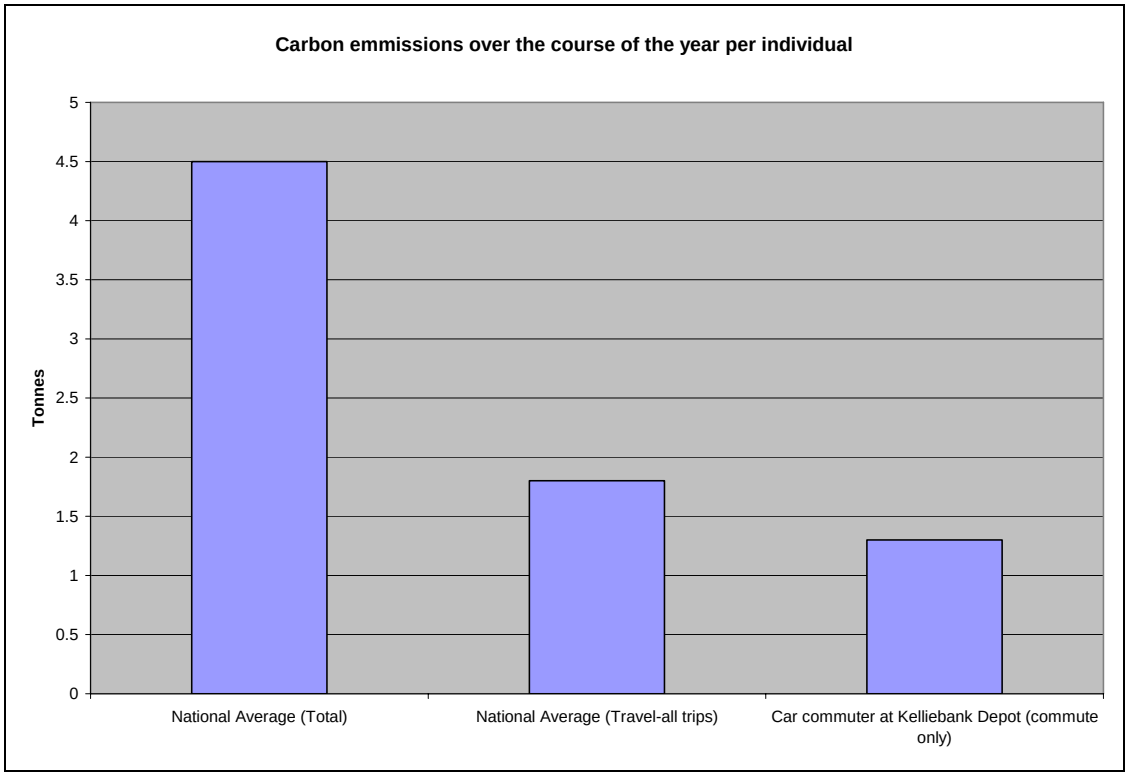

Figure 65- Carbon emissions over the course of one year

[25] This is the figure that may be used as a baseline measure. Travel planning measures should be designed to reduce this figure.

Overview of Clackmannanshire Council

In total, 428 staff responded to the Clackmannanshire survey, and of these, 347 replied that they travelled to work by car alone, by car as a passenger or by car with a passenger.

In total car commutes were estimated to generate approximately 404.2 tonnes of CO_2 per year. This equates to 1.2 tonnes of CO_2 per year from each respondent that travelled by car and an average of 0.94 tonnes of CO_2 per staff member[26] who responded to the survey.

Figure 66 illustrates how much CO_2 is generated through over the course of one year by an average individual in the UK and compares this with the CO_2 generated just through commuting by the average car user within Clackmannanshire Council.

If we assume that car travellers within Clackmannanshire Council have a comparable carbon footprint to the average UK individual then we can see that their commute currently accounts for 26% - approximately one quarter - of their carbon footprint. If these staff were to start walking or cycling to work tomorrow they could effectively cut their carbon footprint by one quarter over night.

By implementing measures that will help their staff make sustainable travel choices Clackmannanshire Council is therefore providing staff with the opportunity to dramatically reduce their carbon footprint.

[26] This is the figure that may be used as a baseline measure. Travel planning measures should be designed to reduce this figure.

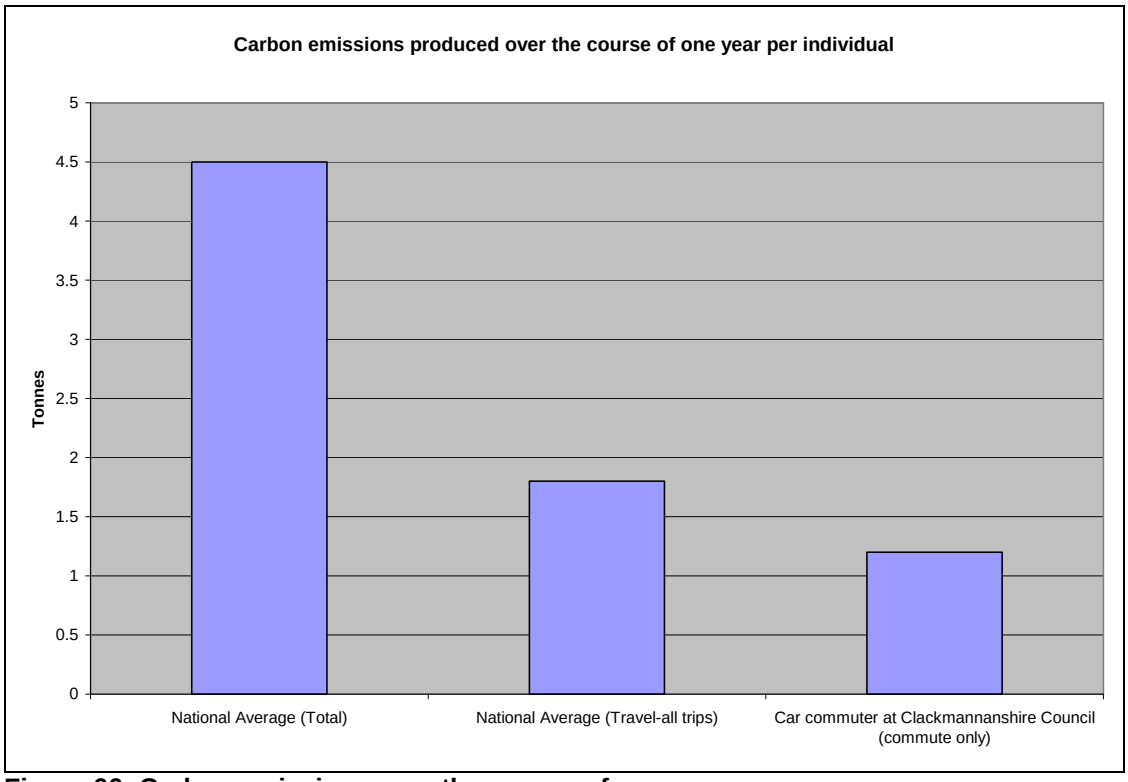

Figure 66- Carbon emissions over the course of one year

4 Strengths / Weaknesses Assessment

The following table summarises a range of strengths that were identified in the previous sections.

Key Strengths	Possible Benefits	Location / s
A large proportion of staff live within a 3 mile radii of the site	• Distance should not be a barrier to sustainable travel for most staff; a large proportion of staff are able to walk or cycle to work	All sites and in particular Lime Tree House/ Greenfield House
Postcode analysis has identified residential clusters	• Good potential for car sharing arrangements amongst staff	All sites[27]
Most staff work between 7am and 7pm, Monday to Friday	• Work patterns for most staff coincide with the hours of peak public transport provision	
Most staff have similar work patterns	• Staff start and finish work at similar times- good opportunities for car sharing	All sites
A large proportion of staff have some flexibility in their start and finish times	• Within reason, staff have the potential to adjust their start and finish times according to suitable public transport service times	All sites
A high proportion of staff would be willing to car-share	• Good potential for car sharing at all sites	All sites
A high proportion of staff felt that incentives to encourage car sharing, public transport use and walking and cycling would be effective if implemented	• Good potential for encouraging more staff to use sustainable transport options	All sites
A high proportion of staff felt that a formalised work from home policy and compressed working hours would be effective in reducing car travel to their workplace	• Good potential to reduce car trips through flexible working policies	All sites with the exception of Kelliebank

[27] Further postcode analysis is required at Kelliebank depot to identify residential clusters with car-sharing potential

Key Strengths	Possible Benefits	Location / s
At least a third of staff who travel for business frequently have indicated that they would consider not driving to work, at least from time to time, if pool cars were available for business travel	• Having pool cars available cars could free staff from the need to travel to work by car	All sites
A high proportion of staff indicated that they would like their journeys to be more environmentally friendly, cheaper or quicker	• A significant proportion of staff have travel aspirations that match potential benefits associated with sustainable travel options	All sites (Over 50% of staff at Greenfield House and Lime Tree House)

The following table summarises a range of weaknesses that were identified in the previous sections.

Key Concerns	Possible Issues	Location / s
A high proportion of staff are driving to work alone	• A relatively high proportion of commutes are single occupancy car journeys in comparison to both regional and national figures, undermining local efforts to reduce congestion in Alloa town centre	All sites, although (unclear at Kelliebank Depot)
The proportion of staff travelling to work by sustainable modes is lower than the national average	• The proportion of staff travelling to work on foot, by cycle or on public transport is notably lower than the national average despite high proportions of staff living within 10 and 3 miles of the site.	All sites
A relatively high proportion of staff living within 3 miles of their workplace do not own a roadworthy cycle	• A relatively high proportion of staff with the greatest potential to cycle to work do not own a roadworthy cycle	All sites
A relatively high proportion of staff use their car for business travel more than four times a week	• High economic and environmental costs for Clackmannanshire Council. Means that these staff are obliged to travel to work by car.	All sites
'Unrealistic public transport options' was commonly cited as to important factors in staff members decision to drive to work	• Staff are either unaware of the public transport options available to them, public transport options are poor or a combination of both	All sites

5 Recommendations

This section outlines key recommendations and next steps in compiling effective travel planning at Clackmannanshire Council. Where appropriate site specific measures have been incorporated.

Key Points	Recommended Action	Output	Timing	Who	Priority
Establish Steering Group	Establish a Steering Group that is charged with coordinating the implementation and monitoring of the Travel Plan	The Steering Group will ensure that the Travel Plan is a "Living" document is updated on a regular basis. Its measures implemented and impact monitored	Meeting every 2-3 months to discuss Travel Plan progress and reviewed thereafter	Steering Group and senior management	High
Identify a senior member of staff to champion implementation of Travel Plans at each site	Identify a senior member of staff to champion implementation of Travel Plan at each site with support from the steering group	Travel Plan should have a champion within the workforce	As early as possible	Senior management	High
Strengthen the data presented in this report with spot travel surveys	Conduct spot travel surveys at all major sites as staff arrive at work	The data presented here is strengthened by these surveys and the most accurate picture of travel patterns at Clackmannanshire Council is established. These surveys will be particularly important for smaller sites.	By Spring 2008	Steering Group and Senior Management	High
Establish sustainable travel focus groups and hold sustainable travel workshops at all major sites	The focus groups should consist of a cross section of employees. The purpose of the workshops will be to identify the determinates of current staff travel behaviour at each site and to review measures that would be most effective at each site.	In conjunction with the data presented here, a more accurate picture of why staff at each site travel as they do is established and the most effective travel planning measures are identified	By May 2008	Steering Group and Senior Management with assistance from Vipre UK if required	High

Key Points	Recommended Action	Output	Timing	Who	Priority
Carry out site audits	Carry out comprehensive site audits at all council sites including a review of local cycling, walking and public transport routes as well as on site facilities such as cycle parking, showering and changing facilities. The site survey should also consider provision of sustainable travel information for staff and visitors and business travel options.	Strengths and weakness are identified at each site and inform site specific measures to encourage sustainable travel to these sites.	By April 2008	Steering Group and Senior Management at each site	High
Establish a travel planning policy for Clackmannanshire Council	Produce a set of clear council travel planning guidelines to direct the travel planning process at all council sites	Clackmannanshire Council's position on travel planning is clear and there is a unified approach to encouraging sustainable travel across the council	April 2008	Steering Group and Senior Management	High
Incorporate the analysis presented in this report, the results of spot surveys, the site audits and the outcomes of workshopping events into comprehensive travel plans	Produce comprehensive site specific travel plans for all major sites with tailored travel planning measures informed by the research presented here as well as further research carried out by Clackmannanshire Council.	Site specific travel planning measures targeted to encourage sustainable travel to each site and reduce the proportion of single occupancy car journeys	Summer 2008	Steering Group and Senior Management	High
Set a programme of targets and monitoring	Produce a set of targets, including a target to reduce the mean amount of CO_2 produced from the daily commute per staff member that will be achieved through implementation of the Travel Plan. An annual	Travel plan progress evaluated and monitored effectively and measures refined and developed over time	May 2008	Steering Group and Senior Management	High

Key Points	Recommended Action	Output	Timing	Who	Priority
	programme for monitoring progress should also agreed upon				
Provide staff with feedback on the survey and workshops	Provide staff with a summary of survey results and note which actions arise from the data collected in the survey	Staff are kept informed of developments and understand that their input is important in establishing the travel plan. Staff are supportive of the travel plan.	Staff thanked by summer 2007 and provided with regular feedback	Steering Group	High

Appendices

Appendix 1 – Links to National Programmes

In this section we provide links to National Programmes that are supportive (e.g. in terms of provision of advice, information and other resources) of the goals of many of the initiatives put forward in this document.

- Energy Saving Trust: http://www.est.org.uk/
- Bike Week: http://www.bikeweek.org.uk/
- Cycle Friendly Employers: http://www.cyclingscotland.org/cyclefriendlyemployer.aspx
- SPOKES – Lothian Cycle Campaign: http://www.spokes.org.uk/
- Cycling Scotland: http://www.cyclingscotland.org/
- Scotland's Health at Work: http://www.shaw.uk.com/about_scheme.asp
- Paths to Health: http://www.pathsforall.org.uk/pathstohealth/
- Pedometer Challenge: http://www.bhf.org.uk/thinkfit/article.asp?secID=1590&secondlevel=1592&thirdlevel=1608&artID=7278
- National Liftshare Day: http://www.liftshare.org/nlsd.asp
- Road Safety Scotland: http://www.road-safety.org.uk/
- Traffic Scotland: http://www.trafficscotland.org/
- European Mobility Week: http://www.mobilityweek-europe.org/

The following links are to websites that provide a range of useful information.

- Travel Line Scotland – Public Transport Information: http://www.travelinescotland.com
- UK Public Transport Information: http://www.transportdirect.info
- Scotland's Sustainable Transport Alliance : http://www.transformscotland.org.uk
- UK Sustainable Transport Charity : http://www.sustrans.org.uk
- UK Environmental Transport Body: http://www.transport2000.org.uk/
- Sustainable Transport Advice: http://www.travelwise.org.uk/

Appendix 2- Calculations and Dataset for the Carbon Calculator

Car journey CO_2 calculator

Calculations and dataset are based on DEFRA's 'Act on CO_2 Calculator: Public Trial Version, Data, Methodology and Assumptions Paper' published June 2007 (www.defra.gov.uk/environment/climatechange/uk/individual/actonco2/index.htm) and DEFRA's greenhouse gas (GHG) conversion factors for company reporting revised June 2007 (www.defra.gov.uk/environment/business/envrp/pdf/conversion-factors.pdf)

Carbon emissions are calculated for the car commutes of respondents to the survey only; using the formula;

{CO_2 emissions per year = actual gCO_2/km x km travelled per year}

{km travelled per year= respondents estimated distance travelled to work x working days in the year x2}

For the purposes of this calculation the number of working days in the year is based on a 5 day week and is assumed to be 225. Where staff indicate they work fewer than 5 days a week the figure is adjusted proportionately.

For simplicity occasional journeys by alternative modes of transport have not been factored in here.

Where staff indicate that they car share or travel with more than one person in the car it is assumed that all passengers make the same journey as the respondent and the CO_2 emissions per year are calculated as:

{CO_2 emissions per year = actual gCO_2/km x km travelled per year x 1/total no. of people in car}

Carbon emissions from public transport journeys are not calculated here for two reasons: a more in depth survey would need to be carried out to provide the required dataset for such calculations *and* the most significant reductions in CO_2 emissions can be made by reducing the volume of car trips to the workplace, consequently such data is not essential for establishing targets in CO_2 emissions as.

The transport fuel conversion figures used in the calculations are shown in Table 6: Transport fuel conversion figures.

Table 6: Transport fuel conversion figures

Vehicle type	Engine size	Size label	gCO_2/km
Petrol	<1.4 l	Small	183
	1.4-2 l	Medium	216
	>2 l	Large	296
Average petrol car			210
Diesel	<1.7 l	Small	151
	1.7-2 l	Medium	188
	>2	Large	263
Average Diesel car			199
Hybrid petrol-electric car		Medium	126.2
		Large	224
Average car			205.9
Average motorcycle	Average		106.7
Buses			89.1
Rail	Average National Rail		60.2