

The Scottish Government

**Monitoring and Evaluation of the Smarter Choices Smarter
Places Programme**

Going Smarter in Dundee

Final Report

March 2013

Version 3.1



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Executive Summary

This report describes the monitoring and evaluation results for the “Dundee Travel Active” (DTA) programme, which encompassed a range of infrastructure and behavioural change measures to encourage more sustainable travel choices in central Dundee.

The planned programme was **successfully delivered** between 2009 and 2011 and was extended with additional funding into 2012. The DTA programme fostered joint working between the City Council, the NHS and other partners. The joint working is now leading to new initiatives including a new project in Broughty Ferry that builds on the Dundee scheme. Feedback from the programme participants also suggests that it has delivered improved communications between Council departments.

The main conclusions and observations on **travel behaviour change** are:

- Car use as a driver has fallen slightly (but not significantly) compared with a slight increase in the equivalent Scottish Household Survey (SHS) data for other comparator areas.
- There was a significant rise in travel as a passenger in a car. This is consistent with more than 4% of the population now having signed up for lift sharing schemes.
- Bus use reduced by more than in the equivalent SHS data and the major changes in local bus services appear to have influenced this change.
- Whilst not statistically significant, walking trips increased compared to a slight reduction in the SHS.

In the area of **physical activity** levels, the proportion of people who undertake the recommended level of exercise (30 minutes of moderate physical activity on most days of the week) was relatively unchanged from 2009 to 2012 (40.2% versus 40.5%). However, there was a reduction in the proportion of people who said they exercised on ‘no days’ which fell from 26% to 19%.

In terms of **changes in attitudes** over the Dundee Travel Active programme period:

- There was a strong increase in the proportion of car drivers who believe that there are practical alternatives to car use and who are trying to use their cars less.
- There was an improvement in the perceptions of the walking environment and road safety when walking.
- Some perceptions of cycling have improved with opportunities for safer trips.

Local awareness of the Dundee Travel Active programme in the 2012 household survey was moderate, with 22% of respondents saying that they had heard of the campaign. 34% recognised the logo but many were not sure what the campaign was about.

The programme has had positive **impacts** in terms of reducing the cost of travel, assisting with social inclusion for older and disabled people, nurturing community development, reducing emissions from transport and helping to integrate transport with regeneration and other policy aims. The project has invested in organisational structures and forward funding commitments which already look set to sustain the benefits into the future.

1.0 Introduction

- 1.1 This report describes monitoring and evaluation results for the “Dundee Travel Active” programme, which encompassed a range of infrastructure and behavioural change measures to encourage more sustainable travel choices in Dundee. This report describes the planning, development, management, delivery and monitoring of a programme of measures in Dundee to encourage people to adopt travel patterns which aim to save them money, make them healthier, reduce transport emissions and develop more cohesive communities.
- 1.2 This report reviews the period from 2008, when a proposal was made to the Scottish Government for funding, to May 2012 when the latest monitoring data became available. During that period there have been many changes to the approach, specification and delivery of the programme and this report reviews the factors leading to these changes.
- 1.3 This report :
- Describes the local smarter choices smarter places (SCSP) programme in Chapter 2.
 - Discusses in Chapter 3 how the SCSP programme relates to wider changes in the economy, society and transport over the programme period.
 - Describes the delivery of the programme of measures (outputs) in Chapter 4 and reports feedback on how well the process of implementing the programme worked.
 - Presents the evidence on travel behaviour outcomes in Chapter 5.
 - Discusses the outcomes related to changes in attitudes to travel and the wider community in Chapter 6.
 - Reviews the awareness of SCSP delivery in Chapter 7.
 - Discusses the potential impacts in different policy areas resulting from the changes in travel behaviour in Chapter 8.
 - Reviews the specific learning points in Chapter 9.

2.0 Summary of Initiatives and Costs

- 2.1 Table 2.1 describes the initiatives, their costs and dates of delivery. A total of £2.1 million was invested in Dundee Travel Active (DTA). £1.4 million of this came from the Scottish Government, with the remaining funding being raised by the Council with contributions from others including benefits in kind and staff time within Tactran, Sustrans, local bus companies, NHS Tayside and the University of Dundee.

Table 2.1 – Dundee Initiatives

Category	Initiatives delivered	Start and end Date	Outturn Cost
Provision			
Public transport provision	D10 - Public Transport Improvements and Incentives	April 2009 - Mar2010	Less than a day each from National Express, Stagecoach and Council staff time
Infrastructure provision	D2 - Active Travel Infrastructure Audit and Environment	Jan 2009 - April 2011	£25k plus 2 days of Council time
	D3 - Public Realm and open space enhancements	Dec 2009 – Apr 2011	£190k plus 10 days of Council time
	Cycle audit and parking improvements	Jan 2010 –Sept 2010	£17k plus 10 days of Council staff
	New path linking Riverside Drive with Seabraes and City Centre	Sept 2010 – May 2011	£70k plus 10 days Council staff
	Pedestrian crossing facilities	Jan 2010 – Sept 2010	Not known – circa £40k
Car and lift sharing	Tactran liftshare scheme	Ongoing throughout	No SCSP inputs
	Car club launched in Dundee in February 2012	February 2012 onwards	
Promotion			
Travel information	D8 - Active Travel Information (Print and web material and Anthony Active fanpage)	Nov - 2008 - Apr 2011	£15k plus 55 days Council/ Tactran time
	City centre pedestrian signage	Apr 2010 – Apr 2011	£40k plus 10 days Council time
Campaigns	D6 - Dundee Active Travel Brand and promotional activities	Aug – Sept 2012	£70k plus 50 days of Council staff time
	Lochee Road Air quality Campaign	May 2009 - Apr 2011	£55k

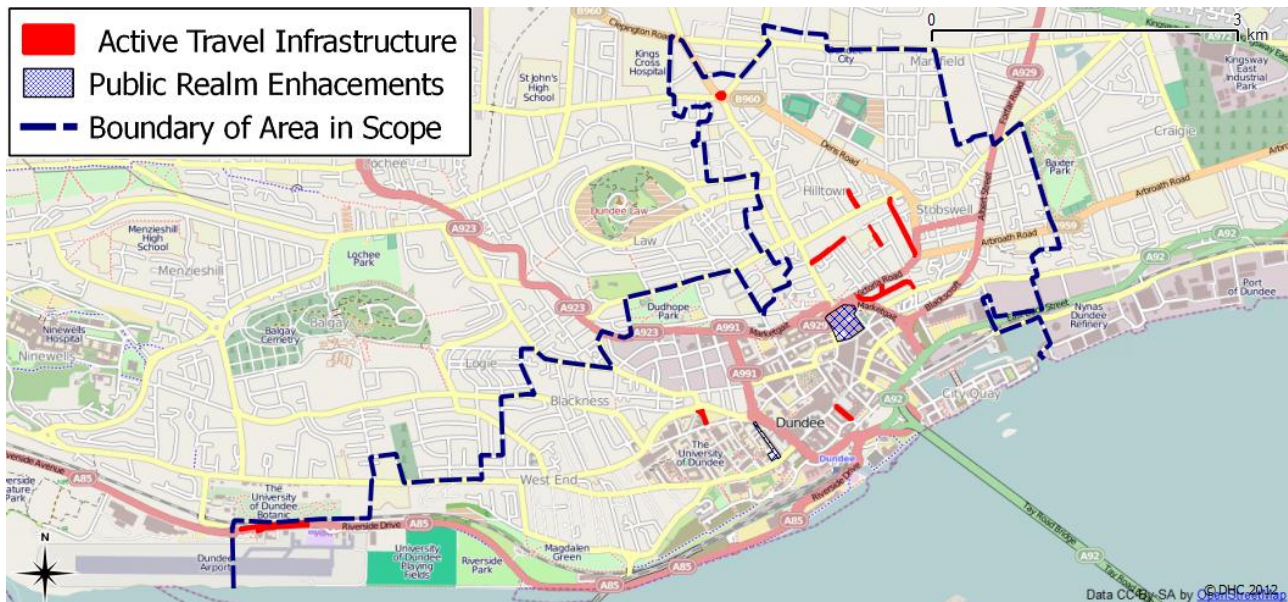
Category	Initiatives delivered	Start and end Date	Outturn Cost
Travel planning	D12 - Schools road safety and health	Apr 2010 - Dec 2010	£15K
	School workshop sessions	Oct 2009 – June 2012	£55k
Personal travel planning (PTP)	D1 - Personal Travel Planning Drop in advice centre at Wellgate Centre	Apr -2009 - Dec 2010 Aug 2009 – Dec 2011	£400k £25k
Cycle promotion	D4 - Community Bikeboost	Jun 2010 - Feb 2011 (Initial scheme)	£137k plus 22 days staff time in Council and University
General active travel promotion	D5 - Network Condition Rangers	Oct 2008 - Apr 2011	£39k plus 5 days of Council management time
	D7 – Active prescriptions and Active in Dundee for Adults with mental health problems	Sept 2010 – Dec 2010	£10k included in PTP budget
	D9 - Active Kids - Active Parents	June 2009 - Apr 2011	£110k cost of bikes and storage plus 90 days of Council time
	Health walks for local people	Jun 2010 - Jun 2012	£25k plus 5 days of Council and NHS time
Training and events	D11 – Independent Travel training	Apr 2010 – Dec 2010	£5k plus 2 days of Council time
	D13 – Adult Cycle Training	Nov 2009 - Dec 2010	£5k plus 1 day of Council time
	Promotional events	Apr 2009 – Sept 2010	£20k plus 94 days of Council/Tactran and police officer time
Management and organisation	Dundee timebank set up	Feb 2012 – Feb 2013	£10k plus funding from other partners

- 2.2 The staff costs for management and administration are largely included within each initiative and vary from relatively inexpensive support staff to senior management time. It is not possible to separate management activities for promotion, such as working with the NHS to encourage them to participate in the PTP pilot, from general management, such as to organise between transport and other agencies as part of community planning responsibilities. Therefore only the costs of the *timebank* initiative, where the transport

department was not involved in the detailed implementation, is allocated to the management and organisation category.

2.3 Figure 2.1 shows the location of the interventions.

Figure 2.1 – Dundee Initiatives



2.4 In designing the programme in Dundee it is of note that less than a quarter of the investment is in provision of infrastructure and services. This is lower than for the other SCSP pilot areas, and reflects the fact that at the start of the pilot the area had relatively good public transport, information technology systems, and other infrastructure. The SCSP infrastructure programme was designed to focus on gaps in provision including active travel infrastructure.

2.5 Key features of the approach are:

- A strong focus on active travel with “personal active advice” for 3,400 local residents (not just personal travel planning) plus engagement with many others through schools, the advice centre in the town centre and through community events.
- Workshops in schools to provide fresh impetus to the school travel programme.
- A public-facing drop in advice centre which could be combined with an office base for the DTA travel advisor team.
- Promotional events to complement the PTP implementation programme. Events were used to raise awareness of DTA, to engage individuals to influence behaviour.
- The new brand and mascot were developed to give a new identity to active travel programmes to help embed them as core programmes for transport delivery.

- DTA also allowed related programmes to be promoted more effectively such as the Council's air quality action plan to encourage more sustainable travel choices.
- Prescription of active travel through GPs was modified. GPs did not take up initial offers from the DTA team for personalised patient support so the emphasis shifted to the provision of active support packages for target groups. Part of the support offered through the PTP was a travel training programme to offer more specialised support for people with recognised health needs. The "I'm on my way" health walks scheme was also developed to ensure that balanced support packages were available. The programme also targeted people at all life stages and offered family support when this was helpful so that lifestyle barriers could be overcome together.
- In promoting cycling there were initial plans for a self-service bike rental scheme but as plans developed it was considered that better value could be obtained by supporting both cycle supply and demand sides with bike loans underpinned with marketing and training.
- Sometimes volunteers feel that their contribution is not recognised, for example if action is not taken as a result of voluntary contributions. In recognition of the potential role of volunteering for smarter choices, DTA contributed funding towards a timebanking initiative for the city which in the future would offer incentives and rewards for participation, with people able to bank the hours they had provided.
- In addition to the development of the brand and the publicity through the website DTA was networked through Facebook to help promote events.
- Active travel infrastructure improvements and public realm enhancements were merged to ensure best value procurement of packages of changes.
- At the start of the pilot the Council anticipated that promotion of public transport would take place through DTA alongside that for active travel but recognised that active travel was also often an alternative to bus travel. The bus operators in the town were engaged with DTA to ensure that there was broad support for the principles of promoting bus travel when it was most efficient. The two main bus operators in Dundee remained engaged with the process and provided some incentives for PTP participants and support for specific interventions (providing free travel for travel advisors, providing staff time and vehicles for in-class workshops with primary school pupils, provision of bus timetables etc). The role of the bus operators was therefore principally as corporate supporters of a healthy sustainable city, rather than any more focused bus travel objective or target.

3.0 Background to the Programme and Parallel Activity

Previous activity

- 3.1 The city centre has been enhanced by redevelopment over the last 20 years, and the centre now has excellent access to bus services and public transport information systems. Nevertheless, the location of, and pedestrian access to the rail station are poor. As part of the Dundee Waterfront development the rail station is scheduled to be rebuilt, making it much more accessible via sustainable modes of transport.
- 3.2 The Council has promoted sustainable travel through significant improvements in the bus network in the city through the Bringing Confidence into Public Transport and Smartbus programmes.
- 3.3 To move forward from these achievements, Dundee's City Vision highlights the necessity of creating a network of safe footpaths and cycleways as two of the measures required not only to improve access to, but encourage use of, local facilities whether for employment, shopping or leisure purposes.
- 3.4 The SCSP plans have been developed within this vision to provide better paths and to promote sustainable transport to make the most of the improvements of the last 20 years.

Parallel activity to SCSP 2009-2012

- 3.5 Improvements and other changes in Dundee have continued to change the city during the SCSP programme. These include development, administration, transport and health programmes as follows:

Development

- Commencement of works (some of which significantly affect traffic routes) on the Central Waterfront development.
- Relocation of main Council offices from Tayside House to Dundee House (in 2011) involving 848 staff. The total number of staff in Dundee House is 926.
- The opening of the new Dundee College campus at Gardyne Road in 2011 saw 3000 full-time students, 12,000 part-time students and 200 staff relocate from three former campuses at Graham Street, Melrose Terrace and Constitution Road in central Dundee.
- The NCR manufacturing site started to wind down towards closure in 2009 with the loss of about 250 jobs.
- Lochee High Street regeneration was implemented in 2010. In order to enable greater residential and commercial stability streetscape improvements have been carried out in and around the High Street area. These include improvements to the

public realm consisting of footway and carriageway improvements, street lighting, new furniture and tree planting. Other improvements include installation of security door entry systems in residential blocks and support for shop front improvements. The budget for this work is £2m.

- City Centre - Seabraes - Magdalen Green - Green Circular cycle super highway was completed in July 2011. The construction of ongoing city centre improvements between Overgate and the McManus Gallery has been complemented by the creation of a new path and permeable pedestrian and cycle route. These improvements help link the existing Dundee Green Circular Route with the city centre, Seabraes and Magdalen Green.
- Dundee Western Gateway Villages layout requires a high quality pedestrian and cycle network and associated facilities (with 40 mph speed limit rather than 60mph for cars) before a single house is built.
- The McManus Galleries reopened after substantial redevelopment in February 2010, since then the galleries have received over 434,000 visitors.

Transport

- Significant changes have occurred in parts of the National Express Dundee bus network. A major reorganisation of bus services in June 2010 led to a high number of public complaints regarding the contraction or loss of services. Further reorganisation and amendments carried out in October 2010 mitigated some of these issues but took time to be understood and accepted by the public.
- Stagecoach renewed almost all of their core commercial service buses between 2008 and 2012 leading to a more modern bus fleet.
- National Express Dundee started selling weekly tickets on bus in Autumn 2011.
- Safer Parking around Schools has been pursued as part of a programme at all primary schools in 2009/2010. There is a city focus on safer parking and pupil safety with a project board comprising representatives from the community, education services and transport. This has been strongly supported by the local paper the Evening Telegraph.

Health

- The Keep Well programme operates as an anticipatory care programme within geographic communities of greatest need. Keep Well staff work directly with the public at consultation sessions with people aged 40–64 years, referred from GP Keep Well project practices, who would benefit from additional support to help them change their lifestyles.

- In 2008, Dundee was selected as one of eight Equally Well national test sites. The overall aim of the test sites is to discover new ways of tackling the complex underlying reasons for health inequalities. Dundee's selected test site area included the DTA zone of Stobswell. However the timescale for the Equally Well test site was delayed, so the opportunity for joint working with DTA was lost.
- Healthy Weight Communities Programme (HWCP) – In 2011 following a consultation process the HWCP in Dundee developed an action plan that sets a target that by 2015 a greater percentage of Primary 1 children in Dundee will have a healthy weight.
- The Dundee Healthy Living initiative was also engaging with residents on healthy behaviour including active travel.

4.0 Outputs from SCSP Delivery

Infrastructure improvements

- 4.1 Comprehensive audits of existing infrastructure were commissioned from the organisations Living Streets and Intelligent Space. The audit reports were used to prioritise interventions and continue to be used by the Council for planning on-going maintenance and future project planning. A small programme of priority streetscape and lighting improvements was planned and delivered at selected locations in the city centre and other neighbourhoods helping to establish an investment programme in active travel infrastructure.
- 4.2 Improvements at South Tay Street and Tay Square have created a more pleasant environment for walkers and cyclists in an area that had been perceived as being unattractive.
- 4.3 Other infrastructure improvements delivered have been the Hilltown Gateway with new landscaping and benches to offer rest stops on the steep incline. Many residents of Dundee had been walking down the hill but getting buses or taxis back home so it was hoped that more active travel could be supported with these improvements.
- 4.4 Traffic calming measures combined with re-designed car parking areas, installation of euro-bin storage areas and tree planting were installed at Dundonald Street to help improve the public realm.
- 4.5 A new path and permeable pedestrian cycleway linking the Riverside Drive cycleway with Seabraes in the city centre was built in July 2011. These improvements help link the existing Dundee Green Circular Route with the city centre, Seabraes and Magdalen Green.

Inspection and maintenance of active travel infrastructure

- 4.6 There was a need identified for enhancement of the maintenance regimes for the extensive path network. A network rangers programme was established to report where improvements to or maintenance of active travel networks was supported by the rangers. 27 volunteer rangers were recruited, trained and allocated path routes. These rangers worked independently and submitted reports to Sustrans and Dundee City Council, so it is not always clear at any time how many of the volunteers are active. No information could mean either no activity or no problems.
- 4.7 After initial training, 19 full route surveys were completed resulting in tasks such as litter and graffiti removal and vegetation control. However two volunteers pulled out of the programme as a result of a perceived lack of action fixing the identified problems. Other rangers report that they think their improvements make the city a more attractive place where people can enjoy walking and cycling.

- 4.8 After the initial funded period, six rangers continued volunteering without formal support. One ranger went on to become the advocate and promoter of Bike Week initiatives at their new employer.
- 4.9 Cycle parking audits were undertaken by community representatives who had expressed a willingness to become involved during community consultation. As a result of their recommendations increased cycle parking facilities were provided in neighbourhood centres. Improvements to cycle parking facilities in Stobswell were planned with detailed input from the local people who had recommended that the facilities should be provided. Approximately 30 Sheffield stand bike racks have been installed in and around the neighbourhood centre and regular usage has been observed, although no formal count data is available.

Information provision

- 4.10 Improvements were made to city centre pedestrian signage to ensure that the city centre signage reflected current best practice in street signing. Key changes include the addition of walking times on the signs and an adaptable sign design which means it can be flexibly adapted to extend signage into new areas, particularly areas undergoing rapid change such as the Waterfront.
- 4.11 New printed guides were published with walking and cycling routes in and around the city and a wide range of other materials were prepared and printed to support PTP. These include: DTA City Cycle maps, the DTA Railway Path walking maps, the DTA Mountain Bike Trails card pack and walking route cards showing individual walking routes.
- 4.12 The University of Dundee has made a standing order for 2,000 DTA cycle maps at the commencement of each student year to allow distribution to all new students commencing studies from outwith Dundee. Further distribution of maps is via city libraries, community centres and tourist information centre. The DTA Mountain Bike Trail cards are distributed via city sports centres, bike clubs, cycle shops and the DCC Active Schools team. The PTP team distributed approximately 22,000 individual cards as part of the personalised advice.
- 4.13 The Dundee travel active.com website was set up and although full analytical statistics are not available by time period during the project, statistics were recorded during the September-October 2011 air quality campaign when there were 1,364 unique page views. Users who sign up through the site become subscribed to the Dundee City Council travel information portal ensuring that updates are provided to members on all modes of transport. However there are no records of who signed up for the wider travel portal through DTA.

Campaigning

- 4.14 A new Dundee Travel Active brand was developed to give an identity to the programme. Associated with this a mascot (Anthony Active) was created. The mascot was initially developed as a stress toy and later it was decided to turn it into a mascot and costume. The brand has been adopted for a wider range of DCC-led sustainable transport activity, including the Sept 2011 air quality improvement campaign (focussed on Lochee Rd – separate report available) and the 2012 PTP work in Broughty Ferry. The air quality campaign featured mass media (billboards, radio advertisements) alongside individualised approaches such as walk to school weeks and in-class workshops, and money saving opportunities of eco-driving or changing mode.
- 4.15 The mass media campaign for the air quality work included use of: billboards at relevant sites, a four-week campaign on Wave102 radio, events and press releases alongside paid for articles to receive local print media coverage, organisation of specific events at key locations to raise awareness and provide advice. The pictures below show events at schools and shopping centres.



- 4.16 Anthony Active registered a fan page on Facebook and nearly 100 followers were generated in 2010. The Facebook page was not continued as there was perceived to be no staff resource to maintain it. The project did not formally assess the potential uses of social media as a support to other Council services, but if as many as 100 people were following the site then this indicates that there was potential for the future.

Personal Travel Planning (PTP)

- 4.17 The PTP has engaged households at the doorstep and received some good feedback¹ of reported changes.
- 13,514 residential households were targeted during the two phases of the project, between August and October 2009 and June and October 2010. 5,913 residents were contacted through PTP (44% of targeted households).

¹ Full details are provided in the final report of the PTP - JMP 2011. Dundee Personalised Travel Planning.

- 3,436 residents (25% of the targeted households) participated in the initiative by having a semi structured conversation with the Travel Advisor on their doorstep covering the themes of active healthy low emission travel. 2,062 householders (15%) chose not to participate, while 415 (3%) could not participate due to mobility or incapacity reasons. Of those who did not wish to take part in PTP, 36% were happy with their current travel choices and 9% already travelled actively or knew their travel options. In some parts of the target area there was reluctance amongst residents to open doors, emphasising that the doorstep approach only reaches part of the community, and other engagement approaches are needed.
- Around 15,500 resources were issued to the 3,436 participants including walk packs, walking guides, cycle maps, bike shop discounts, activity diaries, bus information and other activity and resource packs.
- Across the two years, 1,645 active challenges were issued to householders. These challenges were identified through the PTP discussion as realistic steps that the residents could complete such as walking for defined trips, with completion of the challenge being marked by a reward. Just under half of all participants agreed to undertake a challenge, and 8% of people returned forms showing completion of the challenge. As an incentive for returning completed challenge forms, 105 leisure centre vouchers were issued to participants. Dundee Leisure identified that 15 of these vouchers were redeemed.
- 500 participants took part in follow-up telephone surveys and self-reported to the team the changes in their behaviour. 40% of participants reported that they had increased their level of walking following a conversation with a Travel Advisor, and of these about half indicated that one or more members of their households had also increased their level of activity. 50% of people in poor health reported exercising more compared with 41% of people in “fairly good” health and 37% in “good” health.. A wide variety of physical health and mental wellbeing benefits are reported by participants.
- 7% of participants reported an increase in their level of cycling activity, with those in poor health just as likely as those in good health to increase their cycling activity.
- No overall change in bus use was reported, as 6% were found to decrease their bus usage while a separate 6% increased their use.
- 7% of participants reported that they had reduced their car use following the PTP initiatives.
- The programme had initially envisaged widespread engagement with businesses but this was not achieved. City centre retailers were difficult to engage with limited local accountability, but nine employers were engaged by making contact through

the Tactran travel plan co-ordinator and the Healthy Working Lives co-ordinator. As a result, information and presentations were provided to: Realtime Worlds, BT/Manpower, JobCentre Plus, DEAP, Grey Lodge Community Centre, Dundee City Council, Axis Shield, Care Commission, Scottish Enterprise.

- 4.18 The follow-up survey carried out 4-6 months after the initial phase of the PTP initiative with 500 households found that 76% of respondents who had reported an increase in walking due to the initiative had maintained this level of activity. Those increasing their activity also found there to be health benefits in doing so, 68% of those increasing their activity feeling better as a result. Physical and mental benefits have been reported by respondents.
- 4.19 Case study descriptions were obtained from 15 respondents for use in the local media and other publicity to explain the programme. These show that the benefits of more active travel are that people feel fitter, less isolated, more independent, and happier so construe the benefits in terms of the ways they have changed their lifestyles, rather than the cost of travel or the fact that active travel can be slower. Quotes from participants to illustrate the benefits include:
- Physical health and mental wellbeing benefits - "I'm not so breathless, am smoking less and colleagues notice more colour in my face", "I have noticed the difference and walking has made me happier", "Walking seems to help my knee problem", "My asthma seems to be clearer and I've lost weight".
 - Social and community benefits - "I am speaking to more people and don't feel so isolated. I have noticed a lot more people out for walks", "I see more people walking past my window and out and about, and I think that's due to Dundee Travel Active", "Not everybody is going to jump into every initiative, but seeing your neighbours taking up activities helps!"
 - Personal interest - "I didn't realise Dundee has so many nice walks", "The health walks show you just what you are achieving by telling you the distance you have walked".
- 4.20 Although the majority of the PTP initiative has been delivered to residential households in the target area, PTP has also targeted schools, universities, employers, community groups, visitors to the city and those with recognised health needs:
- Primary school - 17 primary school classes have had intensive sessions with Travel Advisors (around 460 pupils) and 12 full-school assemblies (around 2,400 pupils) have had presentations on active travel. After 6-12 months the team revisited schools where sessions had previously been held to undertake surveys of outcomes from the sessions. 98 pupils from five schools took part in the surveys. 81% were

able to recall what they had learned from the workshops and 88% of pupils reported that the workshops had affected their approach to physical activity.

- Secondary school - Three secondary schools had sessions during 2010 and the Travel Advisor team also attended transition events for students moving between primary and secondary between 8 and 18 June 2010. 35 personal journey plans were produced using Traveline Scotland's batch journey planner for public transport journeys and Dundee Travel Info planner for walking journeys and approximately 130 pupils were engaged in other ways through the initiatives. Take up from secondary schools was therefore mixed.
- University - The initiatives also targeted students of the University of Dundee and the University of Abertay through a series of one-off and ongoing approaches. 297 students took part through the various events by providing contact details to join Dundee Travel Active. It is estimated that well over 1,000 students had a conversation with a Travel Advisor and received printed resources at the student events. Of the 297 students recorded, 277 were issued with an active challenge and 33 challenge forms (12%) were returned.
- Businesses - The project engaged with nine companies in the target area, primarily through presentations at staff training sessions or by hosting a stall in canteens or other communal areas in the workplace. Around 500 people participated in conversations during these sessions and of these, 162 employees signed up to undertake a challenge. 45 challenge forms were returned suggesting that less than a third actually completed the challenge.
- Community groups – The project made contact with 39 community groups and centres, and 250 community group members were contacted through these initiatives. Activities such as walks, sports quizzes and cycle training were carried out with a number of the groups, establishing good relationships with a number of them. The Travel Advisors team attended many events in the local community including fairs, festivals, sporting events and family fun days recording 347 individuals signing up to take part in an active challenge. Of these, 70 challenge forms were returned, giving a 20% return rate.
- Visitors - City centre visitors were targeted by the project to promote active travel not just in Dundee but in their home towns and cities as well.
- NHS - The project attempted to create links with existing health promotion activities in Dundee by liaising with NHS Tayside, Dundee CHP and local GPs. Travel Advisors were located next to the health check team to enable nurses to recommend individuals to them who need information regarding their health. The Travel Advisors found that the same individuals would return each week, and that the

health checks often had very low attendance so this did not prove to be a successful way to engage people in PTP activity.

- Some work was also undertaken by the PTP team to support people with recognised health needs, assisting at gym-based health improvement programmes.

- 4.21 It had been the intention of the project to engage with job seekers to promote active travel to new workplaces through PTP, and provide incentives such as free bus tickets. It was intended that this would be done in partnership with Job Centre Plus, however, during early discussions, Job Centre Plus suggested that it would be too complex for them to change their processes for helping job seekers with travel, which involved reimbursing travel expenses for interviews, including providing bus tickets and six-months road tax.
- 4.22 Overall, over 400 people have completed personal challenges with increased walking being the most widespread impact. A third of people completing challenges were recruited on the doorstep, with the majority of the remaining recruits being through schools, businesses and community groups.

Working with Schools

- 4.23 88 in-class workshop sessions and all-school assemblies were held with primary school pupils. 2,150 pupils were estimated to have participated in workshops. Some focused on travel to school journeys and reported an 11 percentage point increase in active modes, in schools where travel by car was already relatively low. The schools workshops have also been used to support air quality outcomes as part of DCC's AQAP. Stagecoach and Michelin supported the schools interventions with staff time, provision of buses for use at events and relevant promotional materials.
- 4.24 A DTA-branded 'Don't Park Here' campaign was led by the DTA team with support from Tayside Police and DCC's parking enforcement team. The DTA travel advisors led a competition amongst primary school children to design banners and flyers encouraging parents/carers to make more sensible options than parking close to school gates. They then visited all schools on two or three afternoons to provide a visible presence and to engage with individual parents/carers about unsafe habits and alternative options.
- 4.25 The advisors reported a very positive response to their appearance at some schools, particularly by those parents and carers who travelled to the schools on foot. Some of these people suggested parents and carers should be recruited onto the project in support of the advisors, many made it clear that thoughtless parking and vehicle speed near schools was a serious issue that should be dealt with. In most cases when advisors spoke to drivers regarding parking issues, those drivers who were parked carelessly moved their vehicle elsewhere. Ongoing promotion and information initiatives are taking place at schools. Local police attend some schools in 'school run' hours to deter adults from parking in restricted areas.

Drop in Centre

- 4.26 A drop-in advice centre was created in a shop unit in the Wellgate shopping centre. This provided a physical location where people could go to find out more about the DTA programme. The shop was provided without charge to DTA by the Wellgate Centre management recognising the joint benefits of helping to increase footfall in the shopping centre and the benefits for a shopping centre to support social responsibility aims.
- 4.27 This drop in advice centre is evidence that success breeds success. The shopping centre would not have wanted to support something that damaged its image so it was only after DTA became established that the opportunity arose to bring in new partners in this way.

Community and student BikeBoost schemes

- 4.28 A public bike scheme was proposed in 2008 but as part of the detailed project planning in 2009 an alternative approach was identified to make cycles more readily available. The rationale for the chosen approach was:
- The funds available, £560k, could be amended slightly but not substantially increased without affecting the delivery of other projects. A minimum-cost public bike scheme would not have enabled sufficient bikes to be made available for short-term hire at publicly accessible locations. Investment in a quality solution is essential.
 - Based on the information provided by suppliers estimates were made as shown in Table 4.1. This shows typical costs per bike and the potential total costs for a 100 – 200 bike scheme. The 3-year total cost indicates the potential total if the first three years of revenue were to be incorporated within the initial contract.

Table 4.1 – Cost Estimates for Bike Rental Schemes

	Capital costs	Revenue costs (p.a.)	3-year total cost
Likely upper limit for highest quality scheme	£3,000 (£300-600k)	£1,500 (£150-300k)	£7,500 (£750-1,500k)
Central estimate of medium-cost/quality scheme	£1,000 (£100-200k)	£750 (£75-150k)	£3,250 (£325-650k)

- Bike hire was an important component of the programme but lower cost hire options were investigated. It was considered that a better value option for bike supply was medium-term free rental of cycles to residents of the study area, in order for them to try cycling. The approach could potentially be more viable in the longer term by enabling subsidised bike purchase for those that are cycling frequently, and/or free or subsidised bike hire to university students. The Get Cycling's Bike Boost scheme was therefore selected to deliver this lower cost approach.

- 4.29 The Bikeboost scheme was delivered through two phases: the community BikeBoost and the student BikeBoost phases. It was intended to loan around 100 bikes to each group of users and to see 75 or more of these users from each group using the bike regularly for commuting to work, university or college and for other local journeys. Initial “challenge” periods were set for each group, with a 6 month period for the community group and a 3 month period for the students. After this period, if usage met activity criteria agreed with the user (e.g. cycling at least weekly) the users were allowed to keep their bike but this assumed that they would maintain these levels of cycling regularly in the future
- 4.30 Under the community scheme, 156 people registered an interest in loaning one of the bikes. Get Cycling chose 98 of these people to take part in the scheme to ensure a representation of ages, genders, occupations and areas of residence in the sample. The community cycle scheme’s recorded:
- 84 (86%) participants cycle at least once a week.
 - 93% cycle once a month or more often.
 - 8,252 miles were logged online in the initial 6 months of the project.
 - Participants cycle an average of 19 miles per week.
 - 92 of 98 successfully completed the challenges and were allowed to retain their bike. After 6 months, 5 bikes were returned due to low usage, whilst one bike was found abandoned and damaged, though this bike was salvaged.
- 4.31 The characteristics of the 98 participants were:
- Participants applying had stated their most frequent mode was determined as follows: 38% of participants primarily used the car, with 33% travelling mainly on foot, 26% going by bus and 3% using other modes of transport.
 - Around 53% of participants were male, despite 60% of applicants to the scheme being men indicating that female applicants had a better chance of getting a bike when they applied. 44% of participants were under the age of 30. 24% were aged 31-40, 22% were aged 41-50, 7% were aged 51-60, with the remaining 1% being over the age of 60.
 - 43% of participants were resident in the West End, with 20% in both Hilltown and Stobswell and 17% in the city centre.
 - The occupations of those participating in the scheme varied, with 39% in skilled work, 39% on a low income or in unskilled work, 13% being unemployed, 4% in training, 2% retired and 2% not specifying their current employment.
- 4.32 When asked what journeys they used their bike for, the most common responses from the 50% providing this information were work (21%), shopping (18%), health (17%), leisure
-

- (15%) and appointments (10%). Other journeys included the school run, volunteering, support groups, job interviews, caring for relatives and active prescriptions.
- 4.33 When asked what the best things about cycling were, the four most common responses were fitness/health (46%), freedom (23%), saves money (8%) and convenience (8%). The worst things were the weather (43%), traffic (20%) and hills (11%).
- 4.34 All of the 92 participants that kept their bikes will continue to cycle at least once a month. The reported weekly mileage from the each user varied between 4 and 80 miles, giving an average weekly distance of 19 miles per user. This equates to over 1,700 extra cycling miles in Dundee per week of which 700 of these miles would previously have been made by car.
- 4.35 Under the student scheme 97 bikes were distributed with:
- 84% of participants cycling once a week or more during the challenge period.
 - 15% cycling once a month during the challenge period.
 - 4,086 miles logged online in the first 3 months.
 - The average weekly mileage of the users was 13 miles.
 - 88 users completed their challenges and kept the bike to continue regular cycling.
- 4.36 60% of the participants studied at the University of Dundee, with 38% from the University of Abertay and 2% from Dundee College. The very proactive promotion of the scheme in the University of Dundee led to the majority of applicants being from this university. 35% of participants were confident cyclists before the beginning of the scheme but as they did not have access to a bike for use in Dundee they were eligible for the scheme. The remaining 65% cycled for leisure, were occasional cyclists or were not used to cycling. Participants' main mode of transport prior to getting the bikes was 46% travelling on foot, 18% by car, 25% by bus, 6% by other modes of public transport and 5% cycling.
- 4.37 During the initial challenge period, the weekly average mileage of all the participants was 13 miles, with the 60% who returned detailed evaluations at the end of the challenge period recording 4,770 miles in one month. The 60% giving detailed evaluations were asked what the best things about cycling were. Their responses were: fitness/health (32%), speed (25%), freedom and leisure (13%), money (11%), fresh air (8%) and fun (6%).
- 4.38 Looking at both the community and student schemes together the bikes completed an average of 19 miles per person per week for the community group, and an average weekly mileage of 13 miles per person for the student group. A total of 164 people committed to continue to cycle at least once a week following their participation in the programme.
-

Active Kids Active Parents

- 4.39 The Active Kids Active Parents initiatives were used to embed the Travel Active programme within schools and community groups. The scheme purchased cycle equipment including: 120 bikes, safety wear such as helmets, two 12' bike trailers and garage doors to accommodate them, 3 bike carriers for cars, baby seats, tag-ons and other accessories.
- 4.40 These initiative supported community engagement programmes comprising:
- Cycle proficiency training - The training team use the fleet of bikes purchased through the scheme. Over 800 primary school pupils have taken part in the cycling proficiency weeks. Cycling road shows have also been arranged for all of the pupils of six primary schools in the target area.
 - Events - 10 come and try sessions and several family fun days at Camperdown Park and Baxter Park. Access to bikes for activity days and adventure trails for over 20 schools in the city.
 - Adult cycle training – 17 adults have received training including community groups in St Mary's and the training of a Muslim women's group by female trainers.
 - Cycle promotion - Access to bikes for Dundee City Council for various projects such as a charity cycle trail run and the stationing of 6 bikes at the Dundee Skatepark. Use of bikes for outdoor adventure trails for pupils of St John's High School. Residential cycling camps for pupils and parents are also planned in 2011 at Belmont Camp.

Timebank

- 4.41 A community timebanking initiative was set up. Under the scheme, for every hour a person 'spent' they received an hour in return. This scheme encouraged people to share through 'co-production' of action to support the local community by exchanging and sharing personal skills.
- 4.42 Two community events were organised, resulting in a community litter pick and creation of a mosaic artwork. 19 individual members joined and seven organisational members also supported the scheme. Further work is needed to develop this further and test its impacts and this is being taken forward by the NHS as part of their community development policies.
- 4.43 The importance of the timebanking to the DTA programme is that it demonstrates how bringing partners together helps to prompt other things to happen. The timebanking initiative depended on the leadership. The partnership working between the Council and NHS helped to secure this leadership.

Training

4.44 The following summarises the relevant training activities:

- A travel training scheme was established, which provides supported learning for independent travel for people with recognised health needs.
- A train the trainer course was provided to 10 DCC/Dundee College staff.
- Cycle training for adults that wish to learn to ride or to do so confidently. 17 adults were provided with one-to-one training. Some others tried out bikes or received advice at events.
- The Active in Dundee project offers cycle try-out sessions for adults with mental health problems. 22 people have taken part in the programme since April 2011. Classes operate twice weekly.

Health walks

4.45 The walking for health scheme came from an identified need for short health walks for people within Dundee and was co-funded by Paths for All. The key aims and objectives of the project were to increase the levels of exercise in older adults. The scheme was an expansion of the range and availability of led health walks for local people, with a temporary full-time health walks co-ordinator post created to support the expansion.

4.46 The project operated by developing self-supporting walking groups and through the training of volunteer walk leaders who could sustain the walks at the end of the funded period.

4.47 Seven ongoing separate walk groups were established delivering 243 walks to 1104 people. Eight walkers were trained as walk leaders and more groups are waiting for training to get started.

4.48 Participant surveys revealed that all participants liked the routes, the company, the discussion and the relaxed atmosphere. The main benefits were seen to be meeting people, feeling more energetic, enjoying the scenery, and helping people to feel better about themselves.

Management and culture change

4.49 Dundee City Council used the opportunity provided by the Smarter Choices Smarter Places to establish the Dundee Travel Active programme as a mainstream programme within the activities of the Council more generally. This has covered not just the principle of an active travel programme, but the practice of joint working with the NHS and other partners. The joint working culture led to many new initiatives including the new active travel scheme in Broughty Ferry that has built on the Dundee scheme.

- 4.50 The cross-cutting nature of the programme has led to much improved understanding of, and working relationships between, the Council and its partners, especially within the health sector. The programme brought investment to sustainable travel from a variety of partners, notably from Tactran and the bus companies. However, it also delivered substantial improvements in communications between Council departments, especially between transport and education, leisure and communities.
- 4.51 The process has also reinforced community and regeneration investment in the facilities that people want and need, and where they want them. Transportation infrastructure can be functional but adopting a broader approach brought additional environmental uplift, such as the solar lighting studs used for dark pathways and attractive signage for wayfinding. The learning points from the SCSP initiatives transfer across the Council's services helping to improve the effectiveness of spending programmes more generally.
- 4.52 Dundee Travel Active also helped to make the principle of influencing travel choices of individuals an accepted part of strategies and plans. For example, in January 2012, the Council supported the allocation of funding to a local social enterprise to establish a behavioural change centre of excellence. The Council's School Parking and Pupil Safety Working Group, insisted that changing behaviour of drivers choosing to park near primary schools be part of initiatives to improve safety.
- 4.53 Dundee Travel Active was used to raise the priority in the Council of the city's Air Quality Action Plan. Elected members found the programme sufficiently focused that they could get behind and support it without experiencing the traditional concerns about ineffective marketing activities. The work on DTA gave the transportation team in the Council the confidence to pursue behavioural measures more generally, with a new role of Sustainable Transport Officer being created.
- 4.54 Other evidence of DTA changing culture of community delivery is evidenced by:
- The schools working group - DTA implementation aided the set up and working of this group, and their work is DTA branded.
 - Smarter choices interventions to influence travel behaviour remain embedded in Council policy, notably the adopted Air Quality Action Plan.
 - A Travel Plan/Low Emission Strategy officer post was added to the revised Council's sustainable transport team.
 - Dundee Solar Cities (a Carbon Challenge funded programme) adapted the behavioural change techniques being used by DTA for their work to reduce domestic energy consumption. The skills developed by advisors were directly utilised as Solar Cities employed some of them for their work. This demonstrated the cross sectoral benefits and increases in community capacity to deliver change that DTA has provided.

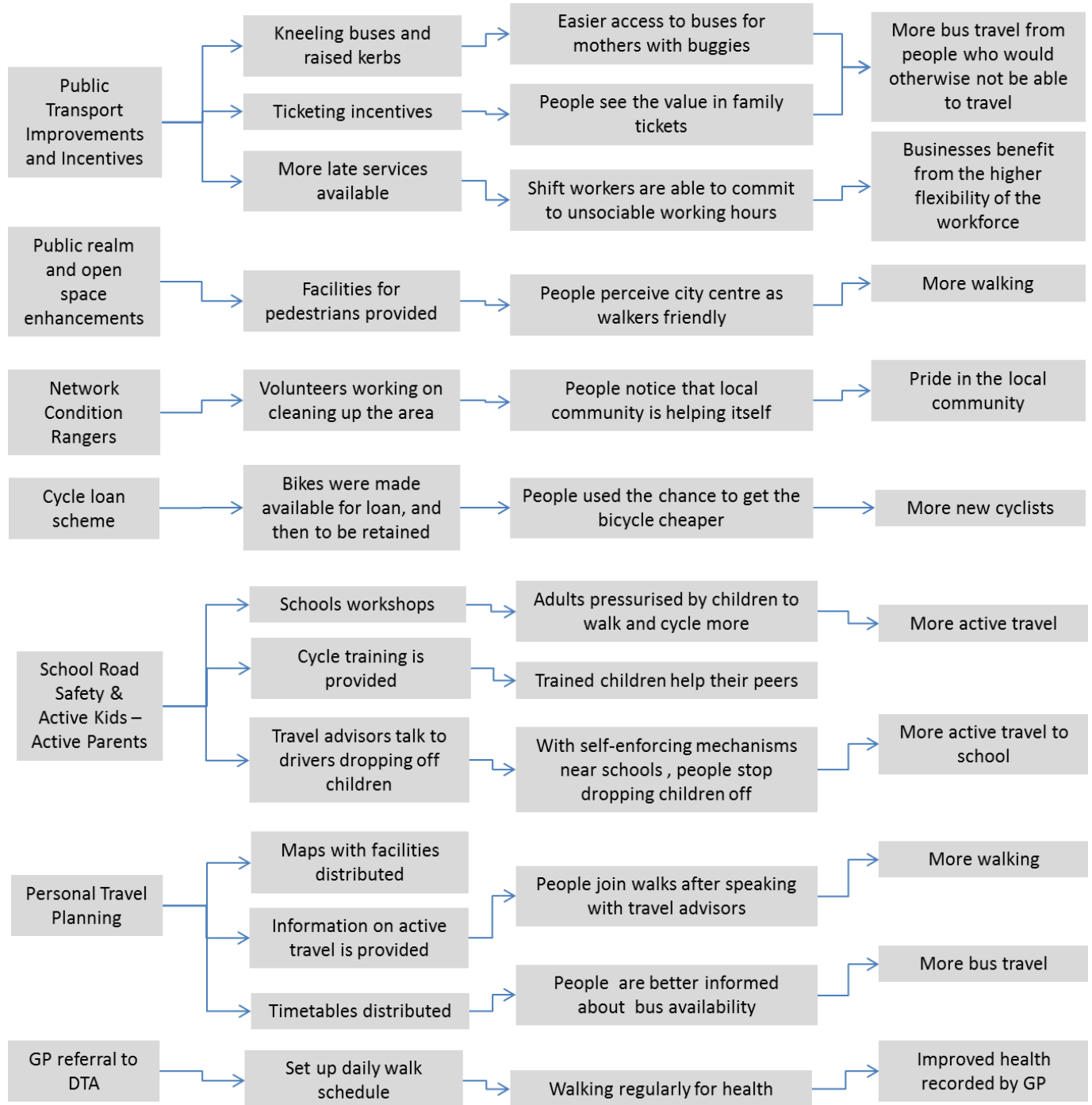
- Dundee City Council has provided cross-party political support for the programme, organising a Civic Reception for those involved in its delivery in March 2011 to celebrate its achievements. At that, Cllr Will Dawson (Convenor of City Development) stated his perception that “thousands of people have changed their travel behaviour [as a result of DTA], many of whom now report health improvements”. Cllr Dawson also outlined the multi-agency delivery process “with staff from the Council, the NHS, Tactran, the Dundee Healthy Living Initiative and JMP all playing an important role” and that “the partnership...has been extremely refreshing and I believe is a blueprint for how the Council should be working with its partners”.

Processes of Change from Focus Group Evidence

- 4.55 Two focus groups were undertaken in the town to explore how local people perceived the recent changes. The focus groups include research to obtain unprompted feedback on the changes and also prompted responses on how people had reacted to each element of the recent investment.
- 4.56 Public transport enhancements were the dominant improvements identified by the focus groups since Dundee has delivered substantial improvements in recent years. SCSP sought to build on the earlier investment through the marketing activities and the focus group participants suggested the mechanisms by which behaviour change was taking place.
- 4.57 The focus group findings are reported in detail separately but Figure 4.1 summarises the main mechanisms identified by participants where the SCSP investment was perceived to impact on the area.
- 4.58 People had noticed the increased level of community activity:
There was vandalism and all that... now it's much better.....There seems to be more of them [community wardens] about...
- 4.59 The role of schools and community groups attracted detailed discussions about what factors would persuade people who were determined to drive their children to school to change in order to reflect the wishes of the majority.
- 4.60 Some people said that they had used the materials provided through the PTP.
It helped my daughter.....The timetable made it much easier for her.
Yes. We also got the information pack about what to do for cycling, walking... It's really helpful.
- 4.61 Few people were aware of the DTA brand, although most said that probably seen it somewhere but were not sure what it was about.
It's just at the primary schools.
-

4.62 The main outcomes and impacts that people thought would be delivered by the SCSP initiatives related to increases in active travel, particularly the health programmes including health walks.

Figure 4.1 - Mechanisms for Change identified in Focus Groups



5.0 Travel Behaviour Outcomes

Household travel survey

- 5.1 One of the main sources of evidence on changes in travel behaviour across the local target area was the “before and after” household travel survey. Household surveys were undertaken in 2009, before the start of the SCSP interventions, and in 2012 after completion of the programme. These included a detailed travel diary and questions about travel attitudes and behaviour.
- 5.2 The changes observed in the target area were compared with the changes recorded in equivalent sized settlements in the Scottish Household Survey between 2008 and 2011. This helped place the results in context and gave an indication of how they compared with “background trends”.
- 5.3 The main results from analysis of the travel diaries and the remainder of the household survey are set out below. In reading these, it is worth noting the following:
- The household survey was undertaken using random sampling across the pilot area. Changes observed are therefore area-wide and may not pick up more localised responses to specific small-scale interventions, which may be apparent from other local data collection sources.
 - Prior to analysis it was necessary to weight the sample data to achieve samples which were broadly representative of the population in the town. All figures quoted are based on weighted data analysis, with weightings by age and gender calculated according to 2010 mid-term Census estimates for age and gender for the target area.
 - Statistical significance tests were conducted on the main results cited, and statistically significant changes at the 95% confidence level are highlighted below. However, it should be recognised that lack of statistical significance does not necessarily mean that there is no change within the population of interest, merely that we cannot say with 95% confidence that there has been a change within the population given the size of observed change in the sample and the sample size.

Household survey sample characteristics

- 5.4 The survey was completed by 1,355 Dundee respondents in 2009 and 1,056 in 2012, in accordance with sample sizes agreed with the Scottish Government. However, not all respondents provided valid answers to every question so the numbers of valid responses vary according to the aspect being analysed. The “n” figures reported under the graphs in the following sections are the weighted sample sizes, either in terms of numbers of respondents or numbers of reported trips.

5.5 Table 5.1 shows the key characteristics of the achieved weighted Dundee sample in 2009 and in 2012. As age and gender were used to weight the sample, these characteristics are identical in the pre- and post-intervention surveys.

Table 5.1 - Weighted sample characteristics (% of total) Dundee in 2009 and 2012

	2009 sample (%)	2012 sample (%)	Population (where available, see note) (%)
Gender			
Male	48.5	<i>No change (due to weighting)</i>	48.7
Female	51.5		51.3
Age			
16-24 years	24.1	<i>No change (due to weighting)</i>	24.2
25-34 years	21.1		21.2
35-44 years	11.6		11.6
45-54 years	12.6		12.6
55-64 years	14.5		14.3
65-74 years	7.7		7.6
75+	8.3		8.3
Economic Status			
Employed Full Time + Self-employed	29.0	28.9	32.0
Employed Part Time	10.9	8.5	
Not employed	59.2	62.4	
Household composition*			
Adults living as a couple/ married	45.6	39.3	
House-share	7.4	17.1	
Single Adult household	45.7	43.6	
Other	1.3	0	
Presence of Children*			
With children	20.2	15.3	
Without children	79.8	84.7	
Illness and Disability			
With	19.5	18.0	
Without	80.5	82.0	
Household income (annual, gross)*			
Less than £14,999	58.7	66.9	
£15k - £19,999	13.2	12.5	
£19k - £29,999	16.8	11.3	
£30k - £39,999	7.1	4.8	
£40k – 59,999	3.4	3.3	
£60k or more	0.7	1.1	
[Refused/ missing]	[32%]	[68%]	
Education*			
No Qualifications	33.0	28.8	28.0
School leaving certificate	8.0	9.4	
O Grade, Standard Grade GNVQ equivalent	22.7	20.5	
Higher, A Level or equivalent	16.4	19.2	
Degree/Professional	19.9	22.1	

Ethnicity	White	92.7	93.5	
	Asian	5.3	5.0	
	Black	1.4	1.2	
	Mixed	0.1	0.2	
	Other	0.5	0.0	
Household car ownership*	None	55.0	66.0	52.0
	1	37.3	28.3	
	2	7.1	5.3	
	3 or more	0.6	0.3	
Driving licence*	Yes	41.6	38.9	
	No	58.4	61.1	
Adult bicycle ownership*²	None	83.6	91.5	
	One	10.7	5.2	
	Two	4.7	2.6	
	Three or more	1.0	0.8	
Children bicycle ownership	None	n/a	90.1	
	One	n/a	5.7	
	Two		3.8	
	Three or more		0.4	
Concessionary travel passholder	Yes	24.6	24.3	
	No	75.4	75.7	

*Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for those characteristics marked with *. Differences in bicycle ownership figures should be viewed with caution due to the inclusion of an additional question on child bike ownership in the 2012 survey. For population data, for age and gender, mid-year population forecasts for 2010 are shown, as provided to the research team by the GRO. For other demographics, 2001 Census figures are shown (where available) as the most recent data available at the pilot area level. These should be treated as illustrative only, and are not directly comparable with the sample data because of their age.*

- 5.6 There were some differences between the 2009 and 2012 survey samples. One possible explanation for this is that the non-response biases using the modified 2012 survey methodology were different to those in the 2009 survey. In particular, there was a higher proportion of respondents from households without a car in the 2012 survey sample than in the corresponding 2009 survey sample. The research team was mindful of this in the analysis, and where possible undertook separate behavioural change analyses for people from car-owning and non-car-owning households. However, this potential source of bias should be borne in mind when reviewing the analyses on the overall aggregated samples.

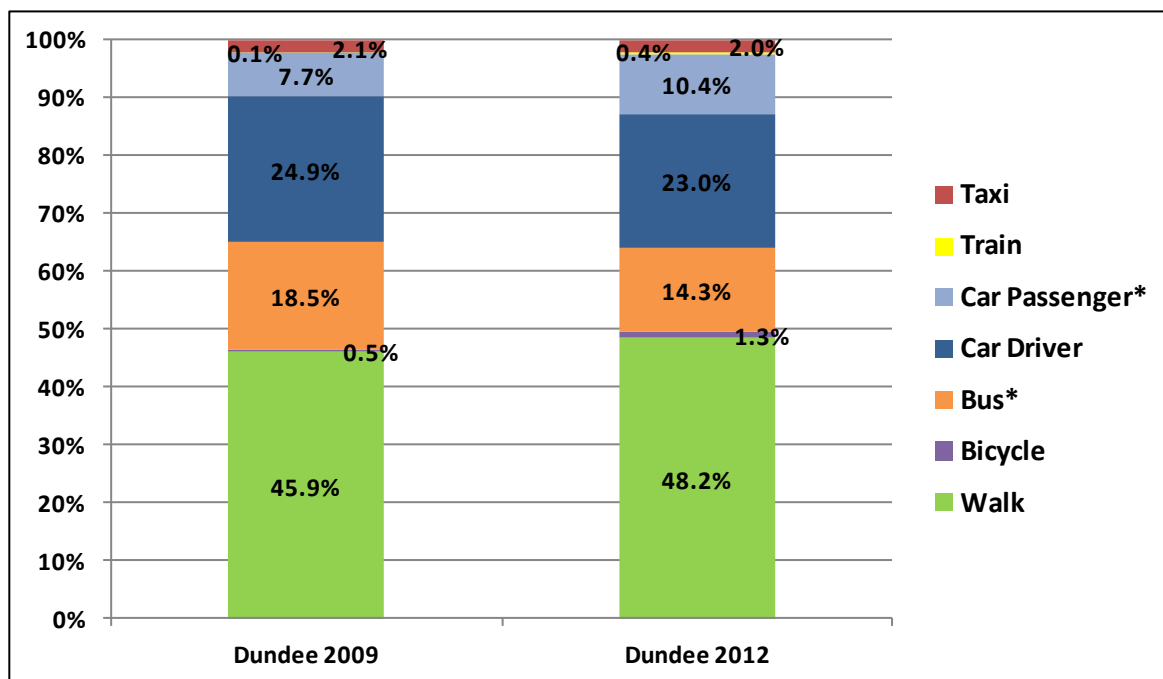
² Note that in 2009, only adult bike ownership was asked in the survey. This means that the bicycle ownership figures are not directly comparable between the two years. It is possible, for instance, that some people would have included bike ownership with their adult bike total in 2009 and this could be one reason for the apparent decline in adult bike ownership in 2012.

Modal split of Journeys from the Travel Diaries

Observed changes

- 5.7 The travel diary element of the household survey recorded trip-making behaviour on a specific day³. Figure 5.1 shows the changes in mode choice by Dundee residents between 2009 and 2012 based on the share of all journeys made by main mode. The main mode of travel is defined as the mode used to travel the furthest distance in cases where a journey was conducted over more than one stage⁴.
- 5.8 A small increase was observed in the modal share for walking journeys made by respondents in 2012 compared to 2009. Conversely a small decrease occurred in the proportion of car driver journeys. Neither change was found to be significant at the 95% confidence level.
- 5.9 Significant differences were found between the proportion of respondents travelling by bus and those travelling by car as a passenger.

Figure 5.1 - Comparison of mode choice by % of journeys made (main mode only)



³ Note that the analysis of the travel diary data concentrates on mode share relating to the proportion of all trips by main mode. Average number of trips and trip distances are not reported for two reasons (i) there was a change in the overall number of trips reported in 2009 and 2012 likely to be due to better prompting of respondents to list each trip and trip stage so this means that the reported distances are misleading (ii) there are very few statistically significant changes in average distance between 2009 and 2012 when the sample is divided into sub-samples such as journey purpose, age categories etc.

⁴ From this point on 'journey' refers to the mode used for the longest (distance) stage of a journey so that comparisons can be made between attributes of travel and travel choices.

*Travel Diary samples of N = 1,776 trips, weighted for 2009 and N = 2,013 trips for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all modes marked with **

Comparison with Scottish Household Survey Data

- 5.10 A comparison between the modal choices of respondents from Dundee between 2009 and 2012 and the percentage point change in share of journeys by each mode from the equivalent sized settlement in the Scottish Household Survey is shown in Table 5.2⁵.
- 5.11 The changes in the mode share for walking and car use are quite different from the “background trends” as represented by the SHS data. The proportion of walking, cycling and train trips increased more than the background levels from the SHS data. Walking rates declined substantially in the SHS data, compared to a net increase of 2.3 percentage points in the Dundee SCSP survey. At the same time, car driving trips declined by almost 2 percentage points in Dundee compared to an increase of almost 3 points in the SHS data. These suggest that travel behaviour changes consistent with SCSP aims have taken place but the changes were not found to be statistically significant.
- 5.12 Bus use declined much more in Dundee compared to the SHS trend. The major re-organisation of the bus network by National Express Dundee is likely to have been a factor in this.
- 5.13 The significant increase in travel as a passenger in a car is also of note. The rapid growth in membership of company lift sharing schemes to include more than 4% of the local population may be a factor affecting this change.

Table 5.2 - Comparison of mode share by % of journeys made (main mode only) between Dundee and SHS data between 2008/2009 and 2011/2012

Mode	% -point Change in Mode Share of Journeys	
	Dundee 2009 - 2012	SHS 2008 - 2011
<i>Walk</i>	+2.3	-2.8
<i>Bicycle</i>	+0.8	-0.4
<i>Bus</i>	-4.3*	-0.4
<i>Car Driver</i>	-1.9	+2.7
<i>Car Passenger</i>	+2.7*	+1.2
<i>Train</i>	+0.3	-0.1
<i>Motorbike</i>	+0.1	included in ‘other’
<i>Taxi</i>	-0.1	-0.5
<i>Other mode</i>	+2.3	-2.8

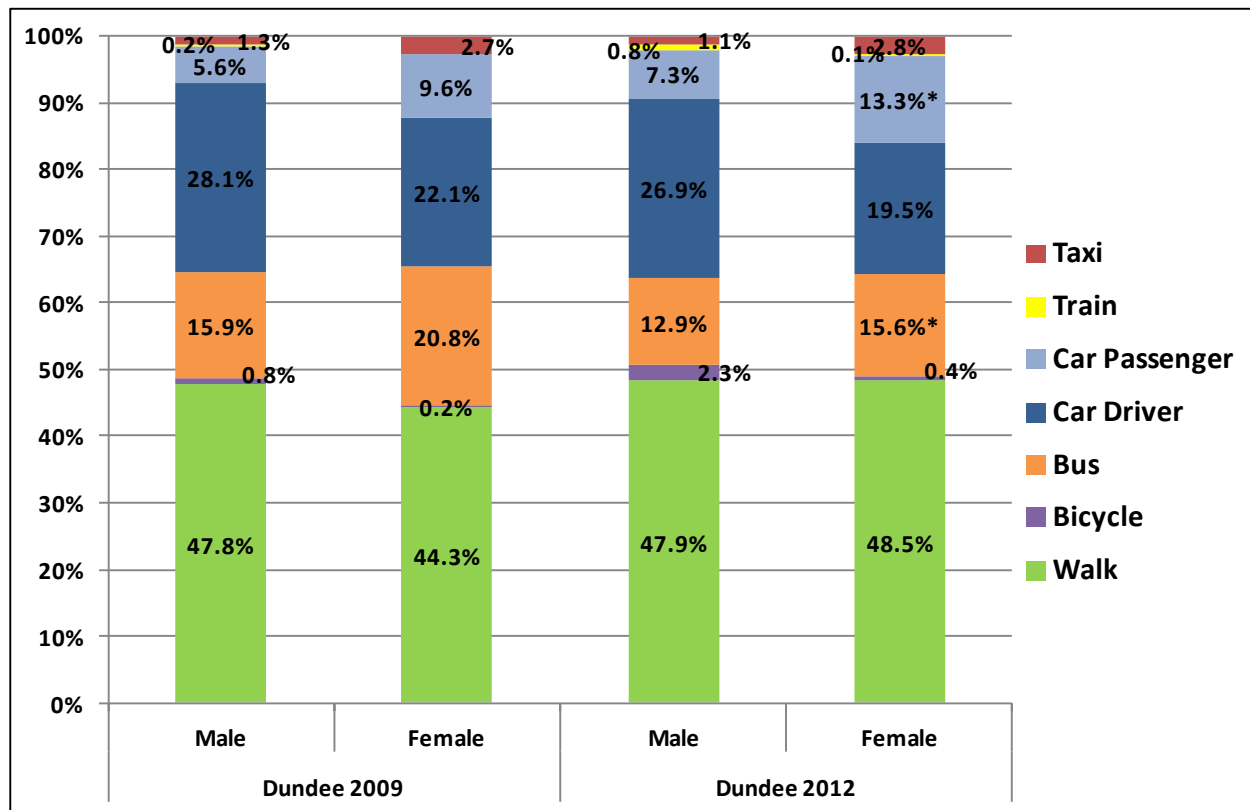
*Differences between 2009 and 2012 in SCSP data are significant at $p < 0.05$ for all modes marked with **

⁵ Both sets of figures are based on the mode used for the longest (in distance) stage of a journey. However, it should be noted that the SHS data applies to the years 2008 – 2011, whereas the SCSP data covers 2009 – 2012.

Modal split of journeys by gender

- 5.14 Figure 5.2 details the changes in mode choice by Dundee residents between 2009 and 2012 based on the share of all journeys made by main mode disaggregated by gender.
- 5.15 The proportion of female respondents travelling by bus decreased significantly and the number of female respondents travelling by car as a passenger increased significantly.

Figure 5.2 - Comparison of mode choice (by % of journeys made) by gender



Travel Diary samples are 843 trips (male) and 925 (female) for 2009 and between 964 (male) and 1,048 (female) for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all marked with *.

Modal split of journeys by age

- 5.16 Table 5.3 compares the mode choice of Dundee residents in 2009 and 2012 based on the share of all journeys made by main mode and disaggregated by age. The proportions of respondents making bus journeys changed significantly in all age groups except those aged 65 to 74 years. There were also significant differences between the modal splits of three of the seven age groups for walking, car driver and car passenger journeys.
- 5.17 The only age groups to increase their car driving were in the youngest two age categories, although this increase was not statistically significant. Bus travel and car passenger use also significantly reduced for these two age groups.

Table 5.3 - Change in mode share 2009-2012 (by % of journeys made) by age

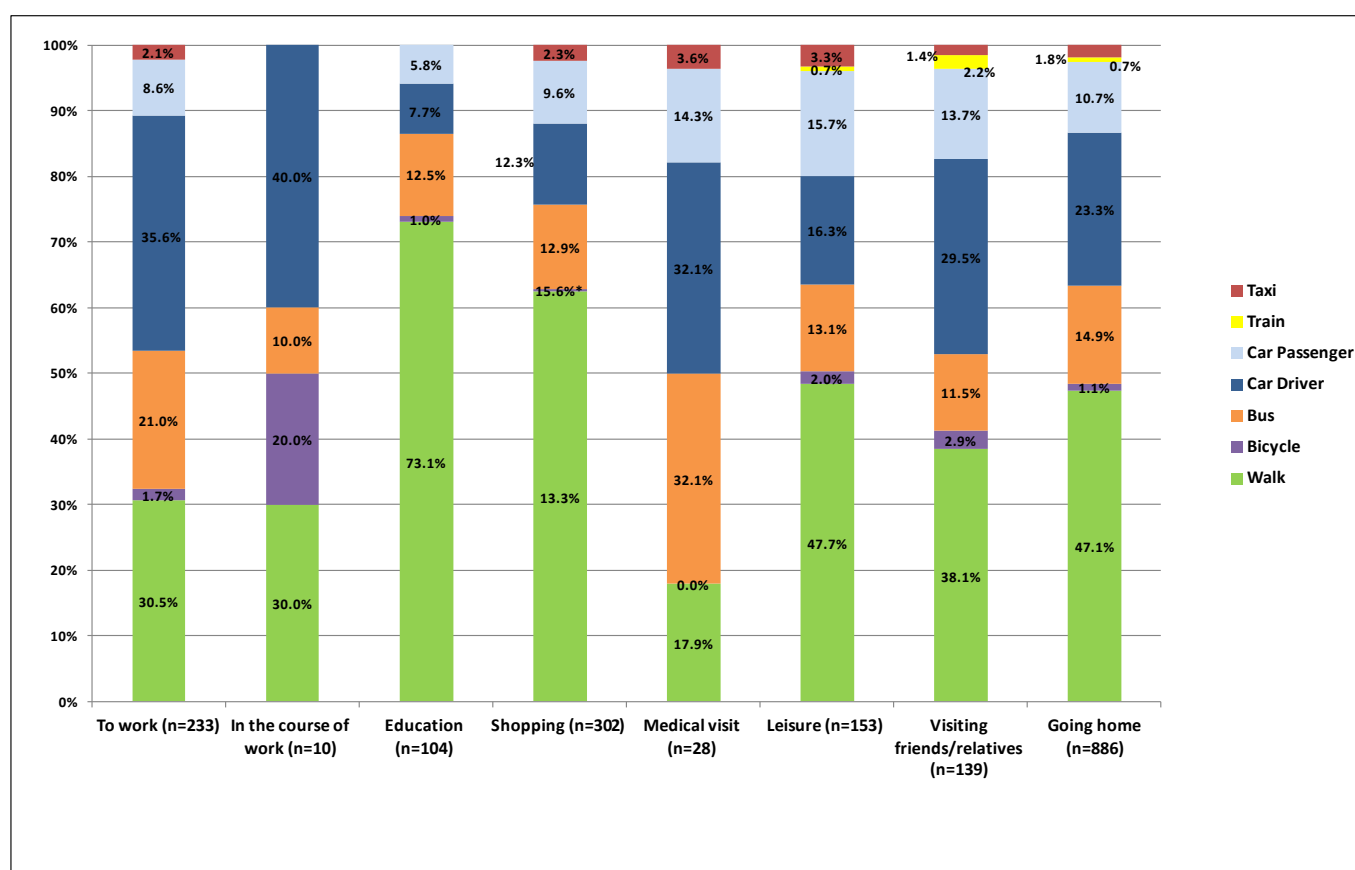
	2009 – 2012 % Point Change						
	18 - 24 years	25 - 34 years	35 - 44 years	45 - 54 years	55 - 64 years	65 - 74 years	75 or over
Walk	+7.6*	-3.0	-7.2	+1.3	+9.1*	0.0	+17.6*
Bicycle	+0.3	+2.4	+0.3	+0.8	0.0	0.0	+0.9
Bus	-5.1*	-9.5*	+7.4*	+6.5*	-7.5*	-9.3	-17.5*
Car Driver	+1.8	+3.7	-3.3	-10.0*	-8.8*	-2.5	-11.3*
Car Passenger	-5.3*	+5.2*	+2.3	+2.1	+8.0*	+11.6	+10.5
Train	+0.8	+0.6	-1.0	0.0	+0.6	0.0	0.0
Taxi	+0.1	+0.1	+1.7	-1.5	-1.5	+1.0	+0.2

*Travel Diary samples range between 93 trips (75 years and over) and 472 (18-24 years) for 2009 and between 112 (75 years and over) and 513 (18-24 years) for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all marked with *.*

Modal split of journeys by journey purpose

- 5.18 Figure 5.3 compares the mode choice by Dundee residents between 2009 and 2012 based on the share of all journeys made by main mode disaggregated by journey purpose and Table 5.4 shows the change in mode choice for these groups.
- 5.19 The proportion of walking journeys increased across all journey purposes with the exception of those made to work, in the course of work and visiting friends/relatives. A decrease in the modal share of car driver journeys was observed in all journey purposes with the exception of journeys made to and in the course of work.
- 5.20 Significant differences were found in the modal split of bus journeys made for educational purposes and there was a large rise in the proportion of walking trips made for educational purposes. There was also a significant fall in the proportion of respondents making car driver journeys for shopping and leisure purposes.

Figure 5.3 - Mode share in 2012 (by % of journeys made) by purpose



Travel Diary samples range between 10 trips (in the course of work) and 886 (going home) for 2012.

Table 5.4 - Change in mode share 2009-2012 (by % of journeys made) by journey purpose

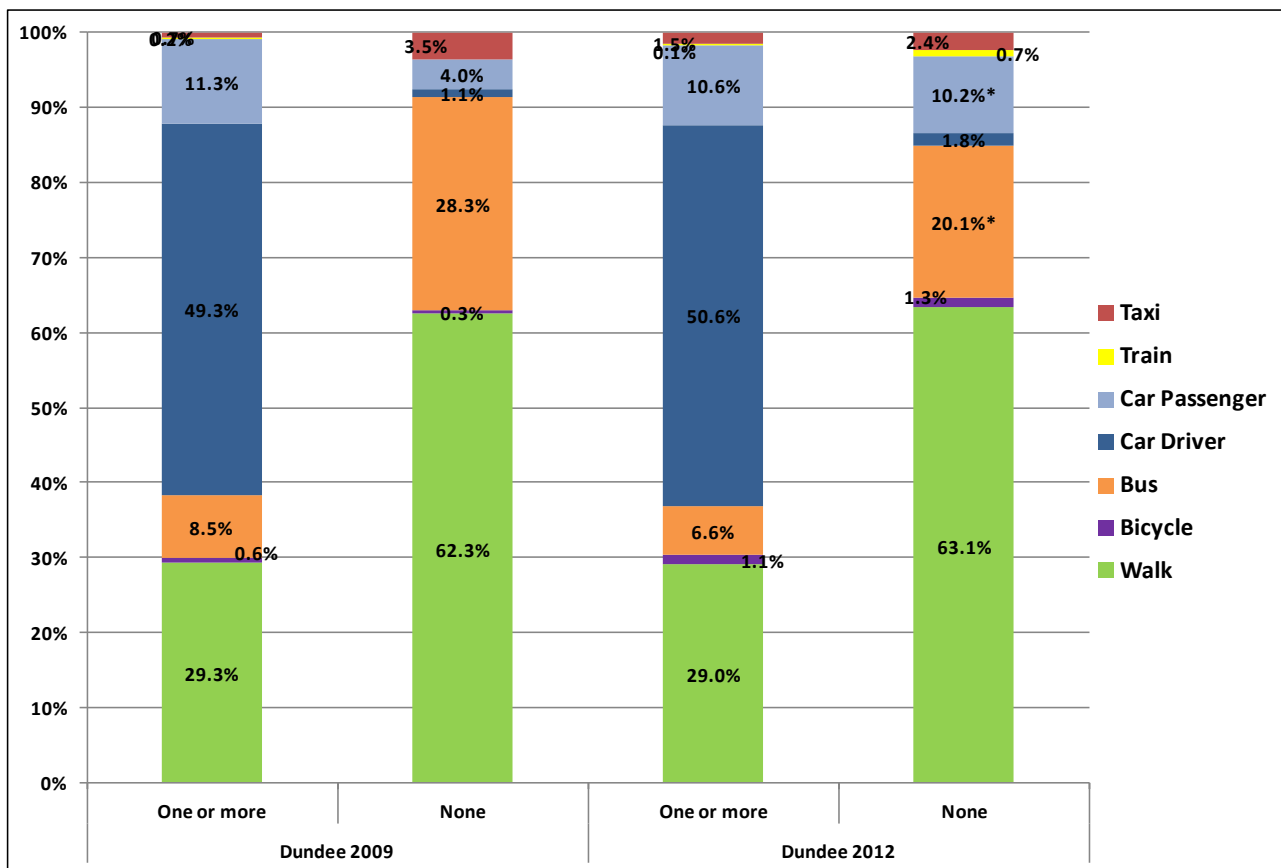
2009 – 2012 percentage-point change								
	To work	In the course of work	Education	Shopping	Medical visit	Leisure	Visiting friends/relatives	Going home
Walk	-7.6	-12.1	+15.9*	+4.0	+3.6	+5.1	-2.5	+3.7
Bicycle	+1.2	+20.0	+1.0	-0.2	0.0	0.0	+2.9	+1.0
Bus	-1.3	-5.8	-14.9*	-3.5	+17.9	+0.6	-1.7	-6.3*
Car Driver	+5.2	+3.2	-6.6	-8.5*	-3.6	-9.4*	-5.7	-0.1
Car Passenger	+0.5	-5.3	+4.6	+6.1*	0.0	+2.4	+3.8	+2.9
Train	0.0	0.0	0.0	0.0	0.0	+0.3	+2.2	+0.5
Taxi	+1.6	0.0	0.0	+1.8	-17.9	+0.5	+0.3	-1.6*

Travel Diary samples range between 14 trips (medical visit) and 650 (going home) for 2009 and between 10 (in the course of work) and 886 (going home) for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all marked with *

Modal split of journeys by household car ownership

5.21 Figure 5.4 illustrates the modal choice according to whether or not the respondent lives in a household with a car. The proportion of bus journeys made by respondents in both car and non-car owning households declined between 2009 and 2012 but was greatest amongst people in non-car households. The modal split of cycling in 2009 was slightly greater amongst respondents in both groups in 2012 compared to 2009. A significant difference was found between the proportions of respondents in non-car owning households travelling by bus and as a car passenger.

Figure 5.4 - Comparison of mode choice (by % of journeys made) by household car ownership



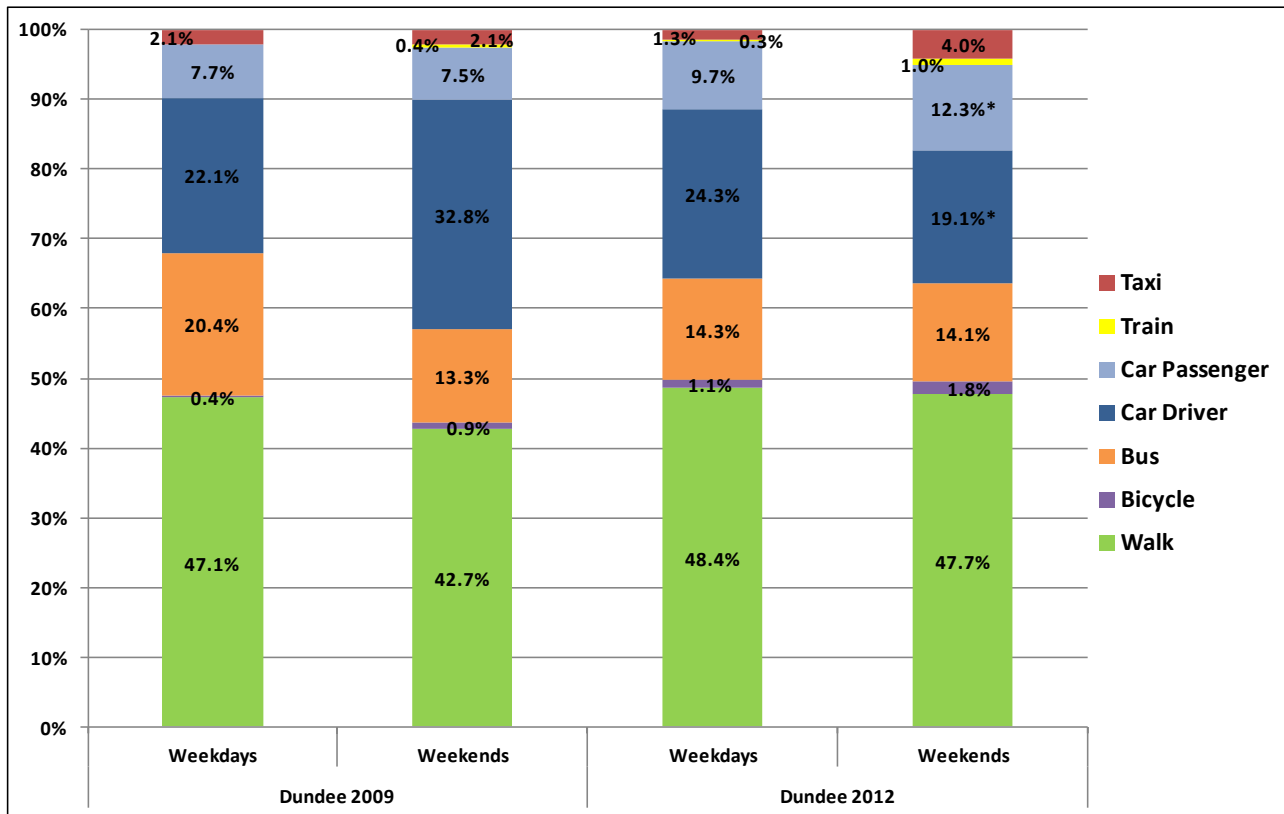
Travel Diary samples are 878 trips (one or more cars) and 896 (no car) for 2009 and 875 (one or more cars) and 1,137 (no car) for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all modes marked with *

Modal split of journeys by weekday/weekend

5.22 Figure 5.5 compares the modal choice of Dundee residents in 2009 and 2012 based on the share of all journeys made by main mode for weekdays and weekends. In 2009 the proportion of car as driver journeys was 10.7 percentage points higher at weekends than during the week. In 2012 the proportion of weekend journeys made by car drivers had fallen to 19.1% whilst the proportion for weekday journeys had increased to 24.3%.

- 5.23 Statistically significant differences were found between the decrease in the proportion of car driver journeys and the decrease in the proportion of journeys made by bus at the weekends.

Figure 5.5 - Comparison of mode choice (by number of journeys made) by weekday/weekend

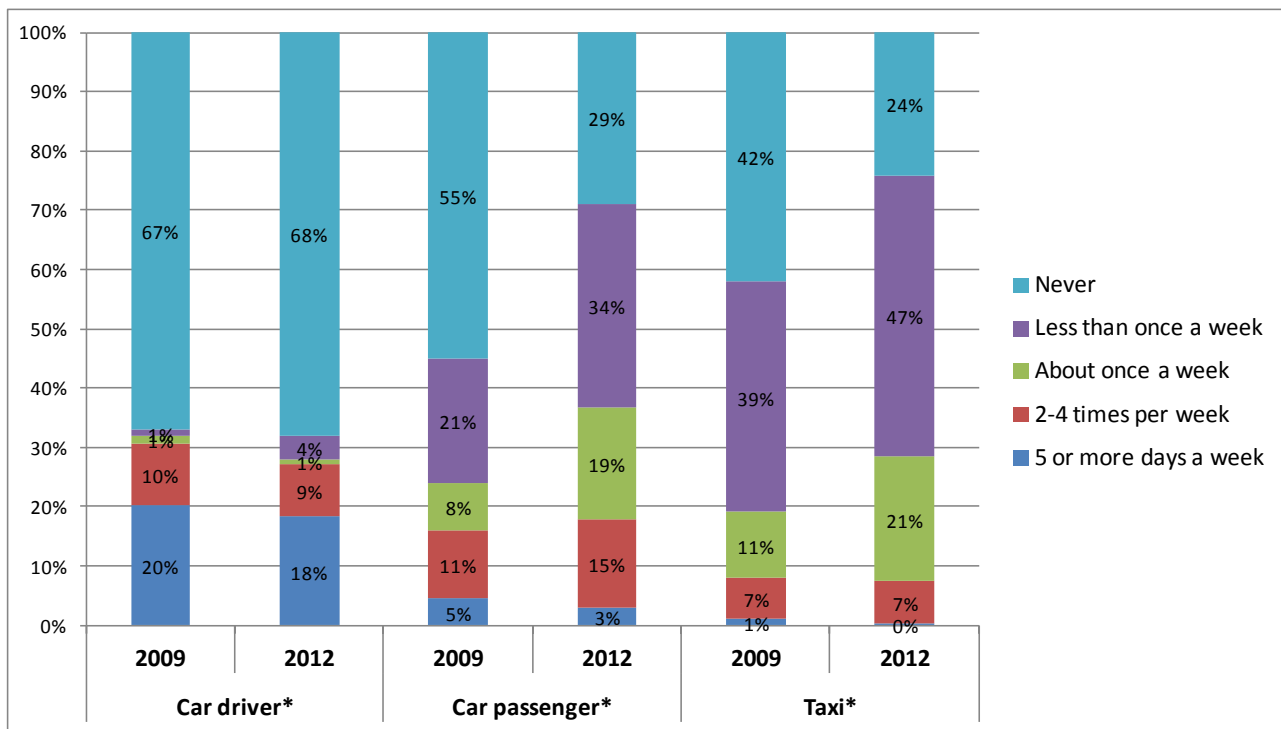


Travel Diary samples are 1,311 trips (Weekday) and 466 (Weekend) for 2009 and 1,515 (Weekday) and 497 (Weekend) for 2012.

Self-reported frequency of use of each mode

- 5.24 In this section we provide data from the section of the household survey which asked people to indicate the frequency with which they used each mode. The data in 2009 and 2012 for car use (as a driver, as a passenger and use of taxis) is shown in Figure 5.6, and for other modes (bus, train, walking and cycling) in Figure 5.7.
- 5.25 Figure 5.6 shows that frequency of use of the car appears to have dropped slightly. The number of people who say they drive on five or more days per week has fallen from 20% to 18% (2 percentage points or a 10% drop). The proportion of people who say they never drive has increased from 67% to 68%. In contrast, the number of people who say they never use the car as a passenger has fallen by almost a half from 55% to 29% (47% or a 26 percentage point drop) with much more frequent occasional use as a passenger than in the baseline. Occasional taxi usage (about once a week + less than once a week) has increased by 18 percentage points.

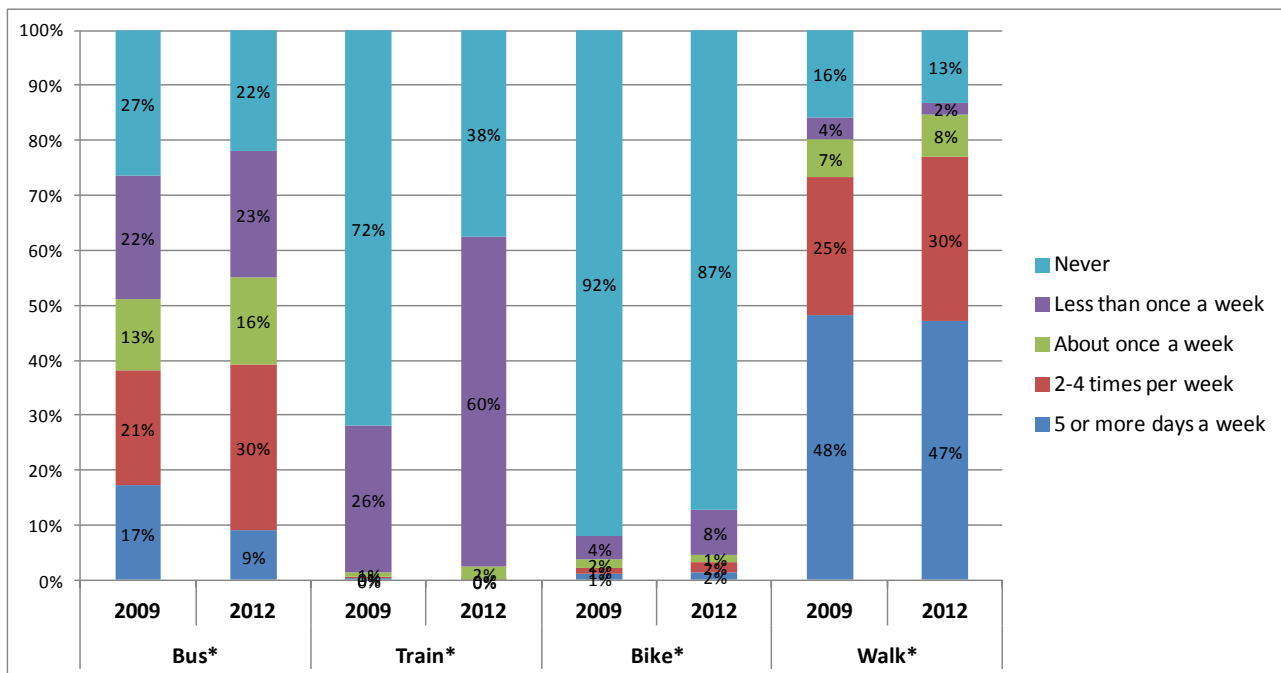
Figure 5.6 - Self reported use of car in 2009 and 2012



Household survey samples of $N = 1355$ respondents, weighted for 2009 and $N = 1044$ for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all modes marked with *.

- 5.26 Figure 5.7 shows that there has been some shift in the pattern of bus use, but that overall slightly more people are using the bus some of the time. The number of people using the bus most days has fallen from 17% to 9% (47% or 8 percentage point drop), but those who say they use it 2-4 times a week has increased from 21% to 30% (43% or 9 percentage point increase). Slightly fewer people than in the baseline say they never use the bus (27% versus 22%). Occasional use of the train has increased dramatically from 72% saying they never use it, to only 38% saying this in the post implementation survey.
- 5.27 The 2012 survey also asked people to register their frequency of use of dial-a-ride services. In Dundee, 98.7% said they never used this service.
- 5.28 There has also been an increase in occasional cycling. In the post-intervention sample, there has been a 5 percentage point reduction in the number of people who say they never cycle. Increases were reported in the 'less than once a week category', but not in the more regular patterns of cycling and still only 1.5% of people say they cycle 5 days a week or more in 2012. Walking also shows a slight increase with a reduction in those who say they never walk from 16% to 13% but a 1 percentage point reduction in those say they walk 5 or more days a week.

Figure 5.7 - Self reported use of non-car travel modes in 2009 and 2012

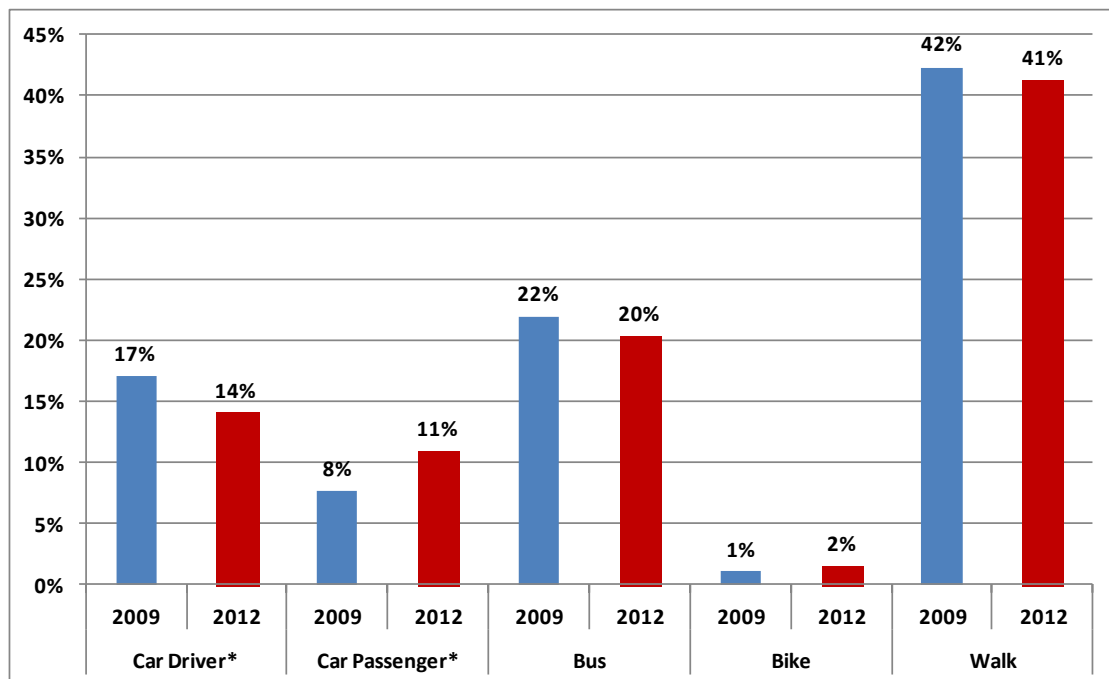


Household survey samples of $N = 1355$ respondents, weighted for 2009 and $N = 1044$ for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all modes marked with *.

Multi-modal travel behaviour

- 5.29 From the data collected on the frequency of use of each mode, composite indices of travel behaviour were calculated in order to understand the degree to which respondents in each location seem to be more or less dependent on certain modes or, instead, tend to use a mixture of travel options⁶.
- 5.30 Figure 5.8 illustrates the degree to which each mode is relied upon in 2009 and 2012. The figures depict the average proportion of trips undertaken by each mode as a fraction of total trips. This is a crude measure, but it has been measured and calculated the same in each survey. The analysis suggests that car driving has reduced as a proportion of total trips, and car passenger use has increased. However, there have been no statistically significant changes in the proportion of trips undertaken by other modes. This analysis shows the relative importance of walking and bus travel to respondents in Dundee.

⁶ They were derived by recoding the original travel frequency categories (as outlined above) to reflect the average number of days per year on which a mode was used. This allowed a crude 'total travel frequency score' to be calculated and, from this, the proportional role of each mode in the overall travel portfolio of the respondents. Any mode as a proportion of total travel could range from 0%-100% and could then be classified in to different percentage bands. Note that this relates to frequency of trips and not distance travelled.

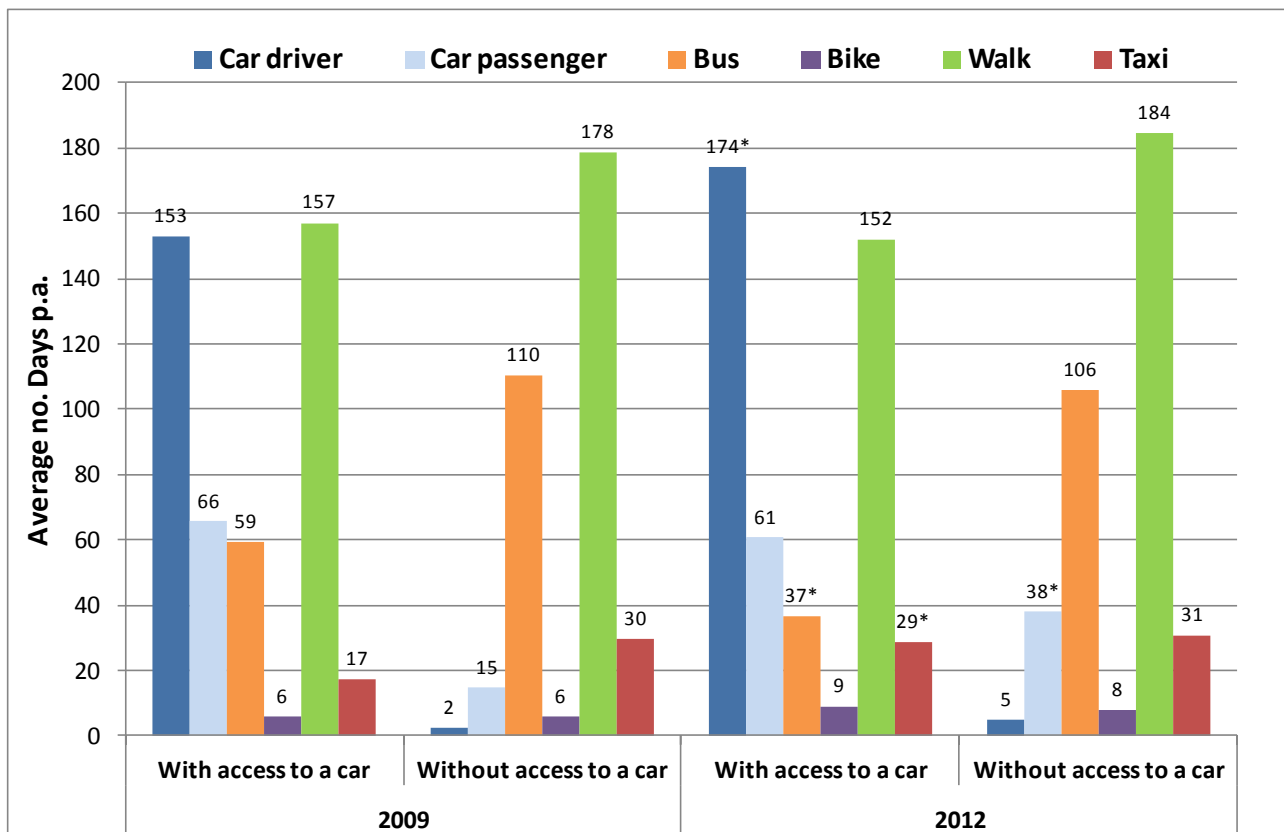
Figure 5.8 - Average proportion of trips undertaken by each mode in 2009 and 2012

Household survey samples of $N = 1355$, weighted for 2009 and $N = 1044$ for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all modes marked with *.

Demographic differences in behaviour

- 5.31 Figure 5.9 contrasts the average number of days travelled by each mode in households with or without cars. It shows the contrast in the use of bus travel and walking between car and non-car owning households and the equal amount of bicycle use between them. When comparing across years, it is evident that it is *non-car* households that have increased their use of cars as a passenger. Non-car households have increased their walking and cycle trips slightly as well. Car owning households, on the other hand, have increased their driving but seem to be walking and using the bus less. Car owning households have also increased their use of the bike, but in all cases cycling is undertaken on relatively few days of the year on average.

Figure 5.9 - Frequency of use of each mode in households with or without a car in 2009 and 2012 (average no. days. per annum)



Household survey samples of $N = 1355$ respondents, weighted for 2009 and $N = 1044$ for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all modes marked with *.

- 5.32 There are many other relationships between demographic characteristics and travel patterns that could potentially be examined. Table 5.5 gives a sense of the magnitude and direction of the differences between various sub-groups and examines changes in their travel behaviour in the two survey periods. It uses the 'average number of days per annum' indicator as a way of capturing self-reported frequency of use of each mode.

Table 5.5 - Average no. of days per annum indicator for key socio-demographic groups in 2009 and 2012

	2009 Average no. days p.a.					2012 Average no. days p.a.					Percentage Difference between 2009 & 2012				
	Car driver	Bus	Cycle	Walk	Taxi	Car driver	Bus	Cycle	Walk	Taxi	Car driver	Bus	Cycle	Walk	Taxi
Male	74	74	9	167	28	62	77	13	165	26	-16%	5%	46%	-2%	-8%
Female	63	102	2	165	20	58	91	2	167	34	-7%	-10%	10%	1%	70%
With children	98	80	8	180	26	86	88	7	182	32	-12%	10%	-8%	1%	24%
Without	62	90	5	163	23	56	84	8	163	29	-9%	-7%	61%	0%	26%
In work	113	86	8	185	24	117	75	8	162	35	4%	-13%	-5%	-13%	49%
Not working	44	89	4	155	24	30	89	7	168	27	-31%	0%	94%	9%	13%
With disability	35	74	1	126	32	35	77	2	123	32	-1%	4%	65%	-2%	0%
Without	78	93	6	177	21	67	86	9	177	29	-13%	-7%	39%	0%	36%
16-34 years	56	86	10	202	27	54	71	13	207	32	-3%	-17%	31%	3%	17%
35-64 years	93	82	4	160	22	86	86	6	156	28	-8%	5%	57%	-2%	24%
65+ years	49	100	0	125	21	32	99	1	122	30	-35%	-1%		-3%	43%

Differences between demographic characteristics are significant at $p < 0.05$ for all modes unless the box is shaded dark grey.

- 5.33 Men report higher cycle use, and women higher bus use in both survey years. Walking rates are the same. Over the study period, men increased their cycling much more than women. The large increase in taxi use in Dundee appears to have come only from women who, at the same time, reduced their bus use.
- 5.34 Those with children drive more than those without but they also walk more. In the post intervention survey, those with children increased their level of bus use more than those without and reduced their use of the car a little more. Those without children were the only ones to increase their cycle rates.
- 5.35 Those in employment are much more likely to use the car and they demonstrated a slight increase in car use over the period in contrast to those out of work who have increased their walking activity much more (96% increase). Employed people are also more likely to have increased their use of taxis.
- 5.36 Those with a long standing illness or disability (21% in 2009, 31% in 2012) are much less reliant on the car in both periods but reduced their car use less. They also increased their

use of the bus and cycling more than those without a disability. Those without a disability were the ones to increase their use of taxis.

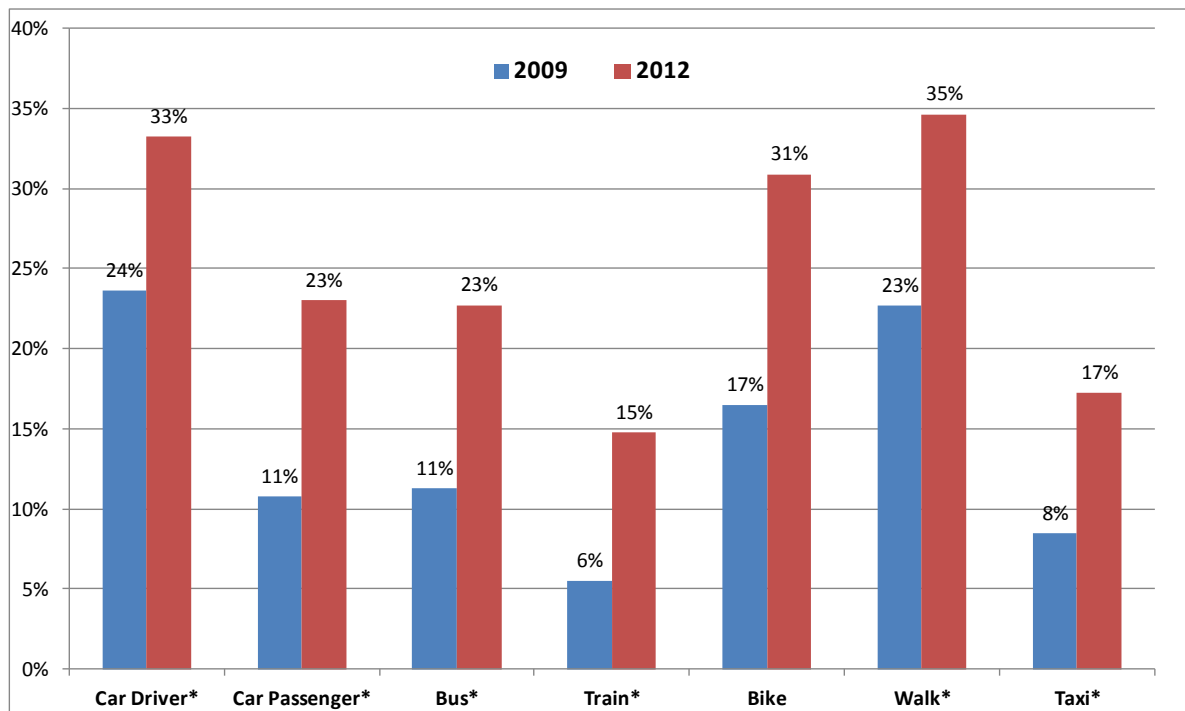
- 5.37 Younger age groups are more likely to walk and cycle in both years and were the most likely to have increased these activities over the period whilst at the same time reducing bus use. The oldest age group has seen the greatest reduction in car driver trips and the largest increase in taxi use. Cycling increased the most in the middle aged group.

Self-reported change in mode use over the past 12 months

- 5.38 The household survey asked respondents to indicate whether their use of each mode had increased, reduced or stayed the same in the past 12 months. In 2012 (the after survey), it also asked respondents to indicate whether they had experienced one or more 'life events' such as changing job, moving home, having a child etc. By looking at these indicators, it is possible to get a sense of change in travel behaviour, the extent to which they may be related to other changes in peoples' lives and the degree to which different modes are subject to the greatest amount of change.
- 5.39 Figure 5.10 shows the degree to which respondents reported that they had changed each mode of transport in the past 12 months⁷. The chart shows the proportion of respondents who reported that their use of each mode had changed in either 2009 or 2012.
- 5.40 Overall there was more change in the use of each mode in the twelve months prior to 2012 than in 2009. The most change was reported in walking, car use and cycling. When looked at in conjunction with Figure 5.11, we can see that this change was made up predominantly of people reporting that they had increased their use of these active modes but reducing their car driving. With respect to walking, over three times more people said they had increased walking than said they had reduced it.
- 5.41 In Dundee, other modes with notable changes in the degree of change included train and bus use. Many more people changed their use of these modes in the 12 months prior to 2012 than in 2009. In the case of train, this was comprised of more people saying they had reduced train travel than had increased it. In the case of bus travel a roughly equal proportion said they either increased or reduced the frequency with which they had taken this mode.

⁷ Only those who had reported that they had used each mode at least once in the last 12 months.

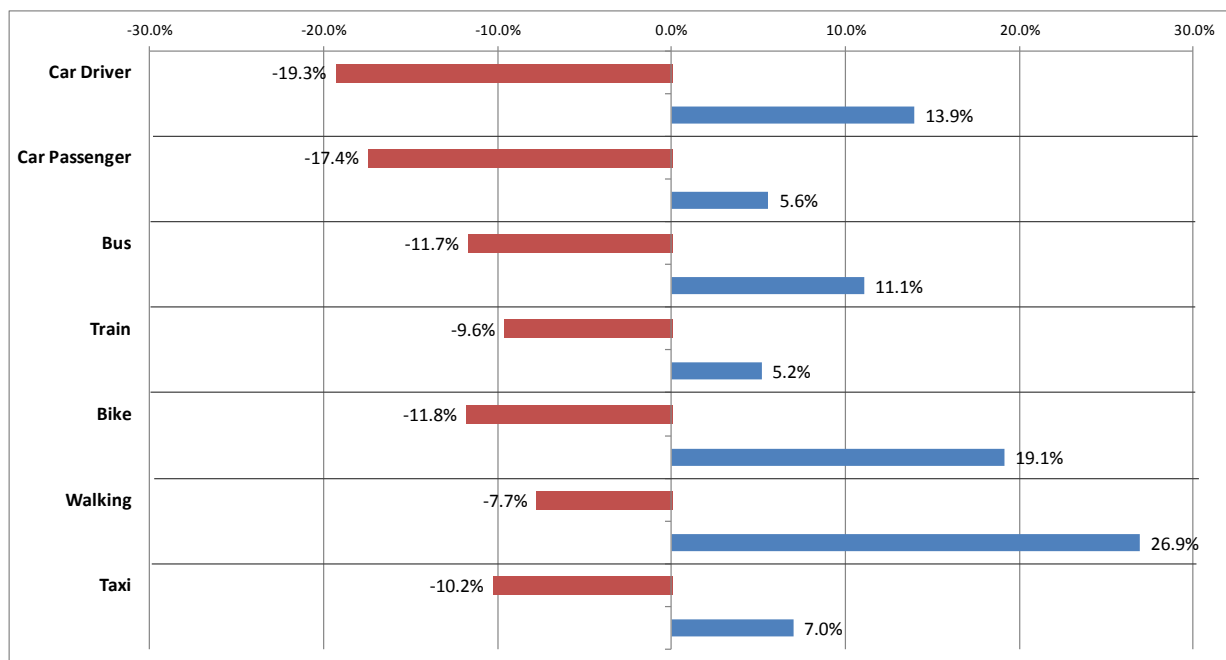
Figure 5.10 – Percentage of respondents who reported some change (up or down) in their use of each mode in the previous 12 months



Household survey samples of N = between 109 & 1117 respondents for 2009 and 65 & 878 for 2012.

Differences between 2009 and 2012 are significant at $p < 0.05$ for all modes marked with *.

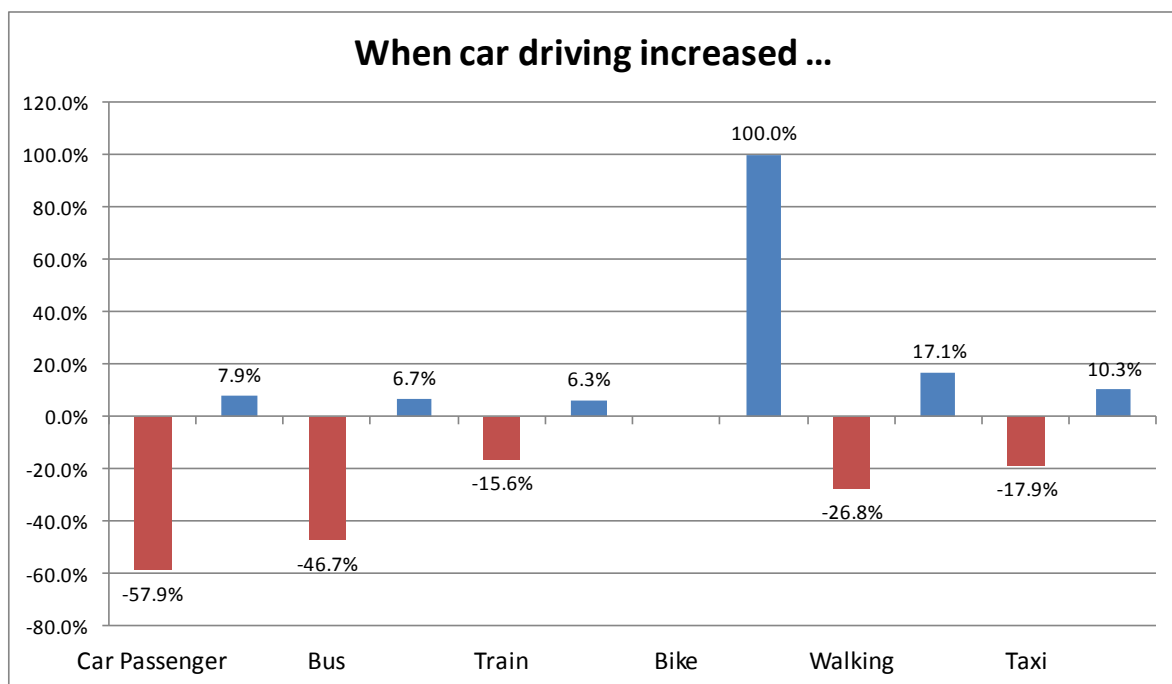
Figure 5.11 – Self-reported reduction or increase in each mode in the 12 months prior to 2012



Household survey samples of N = between 65 & 878 respondents (2012).

5.42 The survey allows us to examine the relationship between the different changes in behaviour that individuals undertake. In this case we wanted to understand whether a self-reported increase or decrease in car use tends to correspond with changes in other mode use⁸. Figures 5.12 and 5.13 show that when car driving is reported to increase (13.9% of respondents), people tend to report a corresponding reduction in almost all other modes, particularly car passenger and bus use. The exception is cycling, where 100% of those who said they increased driving also said they increased their cycling. Cycling also was said to increase alongside walking and bus travel when car driving reduced.

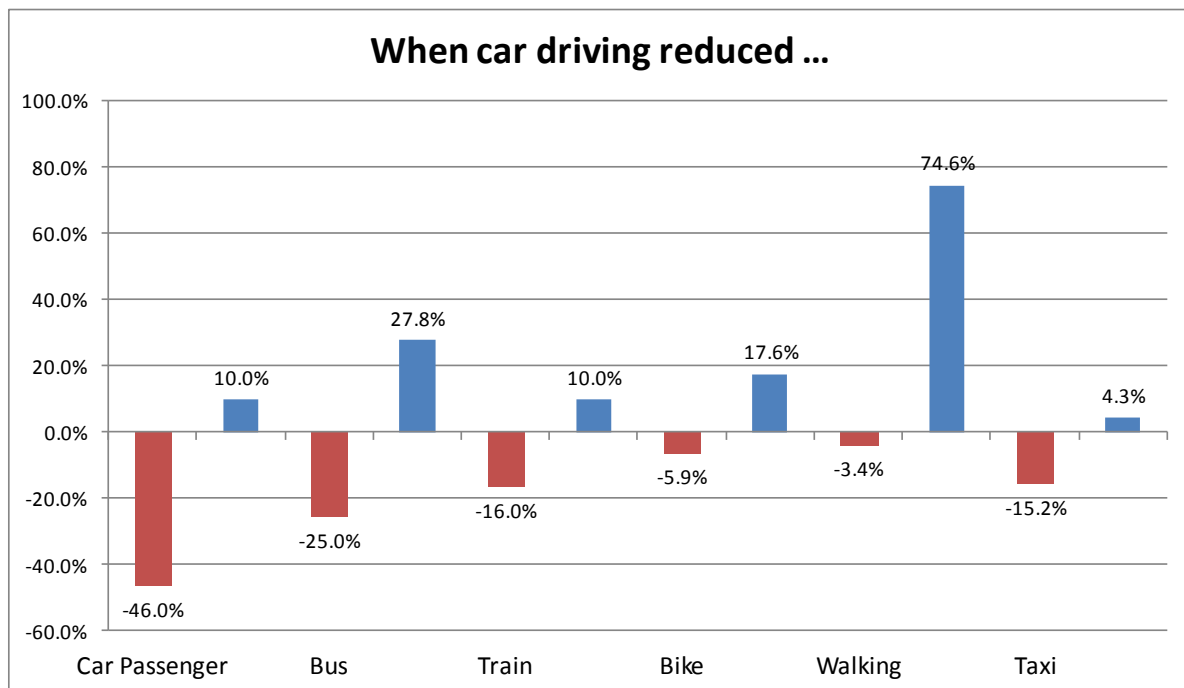
Figure 5.12 – Self-reported changes in other modes when car driving increased



Household survey samples of N = between 65 & 878 respondents (2012).

⁸ Bearing in mind It is not possible from this repeated cross-section survey approach to determine whether these changes are direct trip substitutions, only average behaviour across individuals in the sample.

Figure 5.13 – Self-reported changes in other modes when car driving reduced



Household survey samples of N = between 65 & 878 respondents (2012).

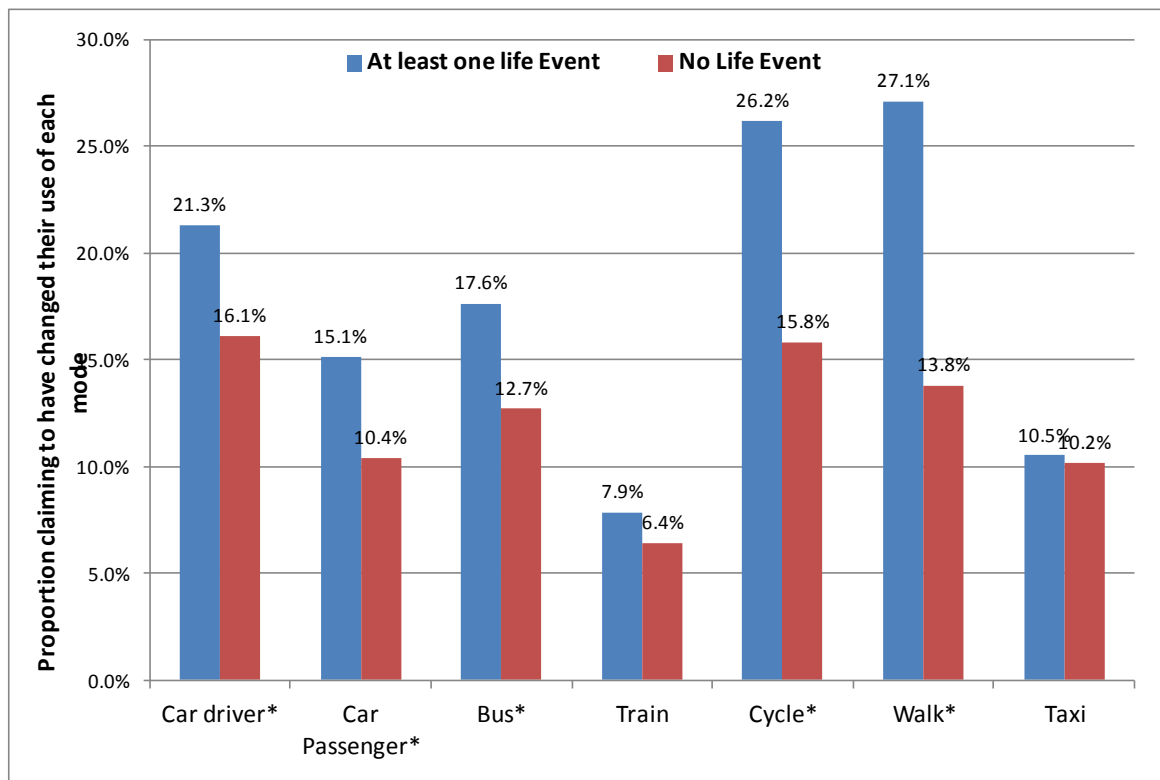
Self-reported change in mode use related to 'life events'

- 5.43 Change in travel behaviour may occur when people undergo an event in their life such as changing job or moving house⁹. Experience in the previous 12 months of these life events, or 'moments of change' were recorded in 2012 (though not in 2009). Figure 5.14 shows that life events lead to greater change in all modes except for train and taxi use. In particular, it seems that cycling and walking are affected by such moments of change¹⁰.

⁹ These included: stating work/ changing place of employment; stopped working/ retired; started/ finished college or university; moved house; birth/ adoption of a child; child started school; child left home/ gone to college or university; bought a car; got rid of a car; obtained a driving licence; new health problem.

¹⁰ These data do not include people who 'never' used a mode in the past 12 months. But as this should only pick up those people who stopped using the mode before the past year (otherwise they would have had at least some use of it in the past 12 months), this means that the life events in the past year could not have been the cause of never using the mode.

Figure 5.14 – The proportion of people claiming to change use of each mode according to the experience of life events in the previous 12 months (2012)

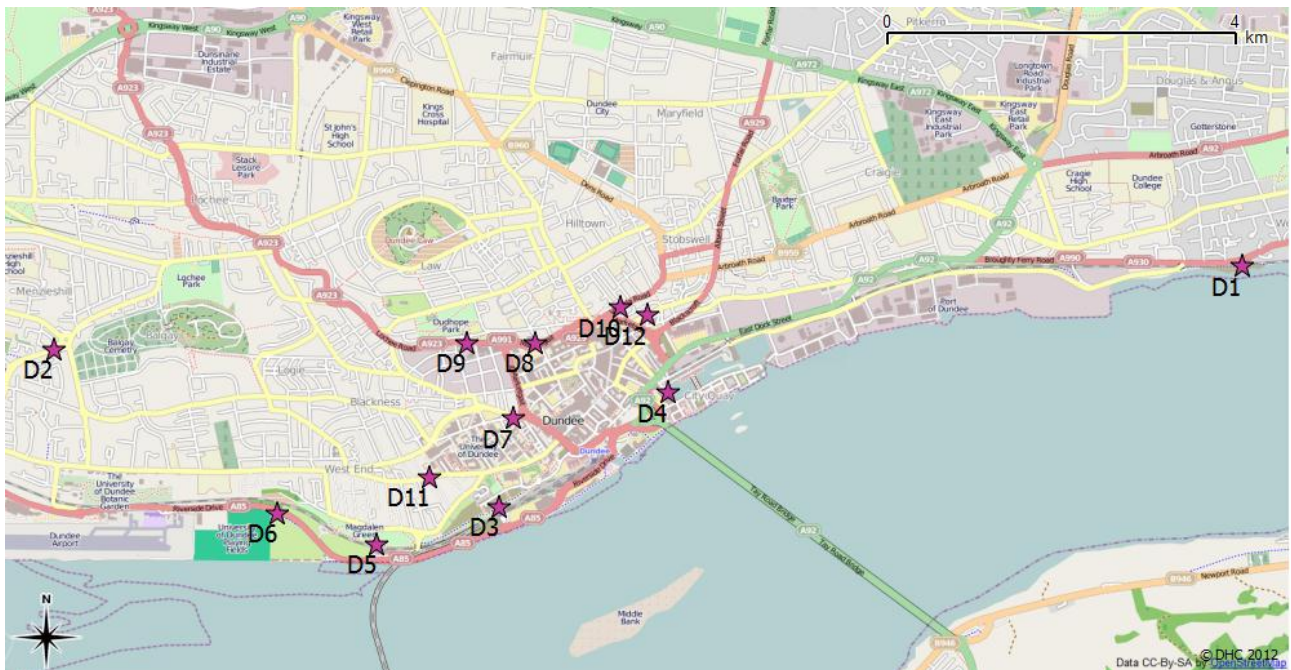


*Household survey samples of N = between 65 & 878 respondents-(for 2012). Differences between life event/ no life event significant at $p < 0.05$ for all modes marked with *.*

Pedestrian and Cycle Count Data

- 5.44 There is no longitudinal data available for pedestrian monitoring but in 2012 walking counts were undertaken at 13 locations across the area. Some of the paths had less than 100 pedestrians per day but in much of the city centre pedestrian numbers were high. For example in Murraygate more than 20,000 people were counted on a weekday. Relatively high volumes of pedestrians were also observed on Nethergate and the junction of Victoria Road and Hilltown (8,446 and 6,302 respectively). Repeating these counts in future years will allow an assessment of changes in pedestrian activity to be assessed.
- 5.45 Automatic cycle counts were taken during June 2009 and June 2010 and February 2011. The locations of these counters are shown in Figure 5.15.

Figure 5.15 – Dundee Cycle Count Locations



5.46 Table 5.6 summarises the data obtained from these counts. In reporting these counts the Council note that there have been problems calibrating the counters. For example on Perth Road near the university the counters recorded over 300 cyclists daily in 2009 (counter D11) before the SCSP programme started, but none of the counters have recorded daily flows as high as this at any location in recent years. The Perth Road counter itself shows less than 30 cycles per day in 2012. Compared with the 20,000 pedestrians being recorded on some city centre footpaths, the cycle numbers counted are surprisingly low. The count data therefore is treated with caution since the Council have reported problems and the numbers seem surprisingly low.

Table 5.6 – Cycle Count Data

		Jun-09		Jun-10		Feb-11		May-12	
		5-Day Av	7-Day Av	5-Day Av	7-Day Av	5-Day Av	7-Day Av	5-Day Av	7-Day Av
D1	Stannergate – (Lower Brought y Ferry Road)	127	117	111	105	131	123	126	121
D2	Ninewells Avenue Cycleway (Greenway)	16	12	-	-	29	16	-	-
D3	Greenmarket Cycleway	28	29	23	22	17	16	17	17
D5	Magdalene Green Cycleway	3	4	4	5	4	4	5	6
D6	Riverside Drive Green Circular NCN 77	97	96	85	78	79	76	-	-
D7	West Port	38	31	42	34	54	42	-	-
D8	Constitution Rd Underpass Footway	28	26	26	23	23	21	19	18

- 5.47 Classified traffic counts also include cycle data and these counts should be much more reliable. However there is no large change in demand evident.

Figure 5.16 - Daily number of cyclists for counts in 2009/10 and 2012



Road traffic

- 5.48 The Council monitors progress towards road traffic reduction targets with traffic counts across the City. Table 5.7 shows that road traffic levels have been falling in recent years. In 2010 the traffic levels were back to 1998 levels and 2% above the base monitoring years in 1996.

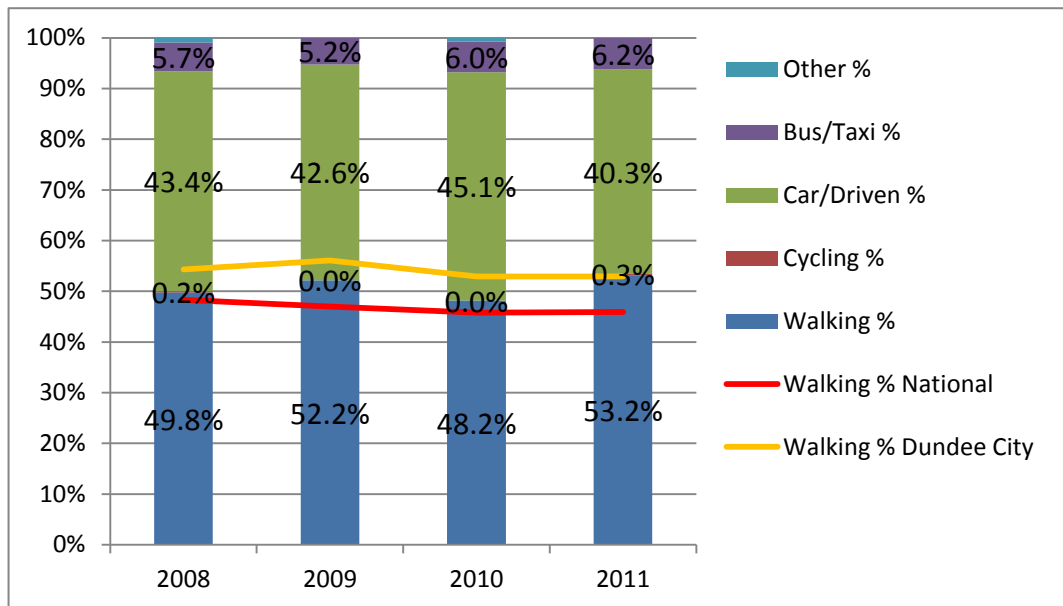
Table 5.7 – Road Traffic Monitoring Results

	1996 baseline	2007	2008	2009	2010
Dundee RTRA Counts	100	108.7	106.0	104.3	102.1
AM Peak	100	104.9	101.3	98	97.3
PM Peak	100	107.9	106.4	104.3	103.4
Scotland	100	118.2	117.7	117.1	n/a

Travel to school

- 5.49 Figure 5.18 summarises the annual hands up survey in schools, which show that there has been a small increase in walking reported and a small fall in car travel to school.

Figure 5.18 – Travel to School from Hands Up Survey



Summary of data on travel patterns

- 5.50 The evidence about travel behaviour outcomes comes from a number of sources and is summarised in Table 5.8. The table compares the changes in mode share from the travel diary with the equivalent figures from the SHS survey and also offers corroborating evidence from the remainder of the household survey and other local data sources. Where figures shown are percentage point changes this means, for example, that a change from 21.5% of trips being made on foot to 36.3% is a 14.8 percentage point change.
- 5.51 The main conclusions and observations on travel behaviour that can be drawn are:
- Whilst many of the changes in use of travel modes in Dundee between 2009 and 2012 have been relatively small (and often not statistically significant), they have often been in the opposite direction or more pronounced than the 'background trends' as represented by data from equivalent sized locations in the SHS data.
 - The travel diary data showed an increase in car use as a passenger and this was greater than in comparable locations in Scotland.
 - Car use as a driver fell slightly (although not statistically significant) against a slight increase in the SHS data. Road traffic monitoring also suggests a reduction in car use.

- Bus use, on the other hand, showed a greater reduction against the background trend, although the self-reported frequency data does not suggest this.
- Whilst not statistically significant, walking trips were shown to increase in the travel diary compared to a slight reduction in the SHS.
- Cycle trips were also shown to increase in the travel diary, although cycle count data would also suggest a fall across count locations.

Table 5.8 – Summary of evidence on overall travel behaviour change

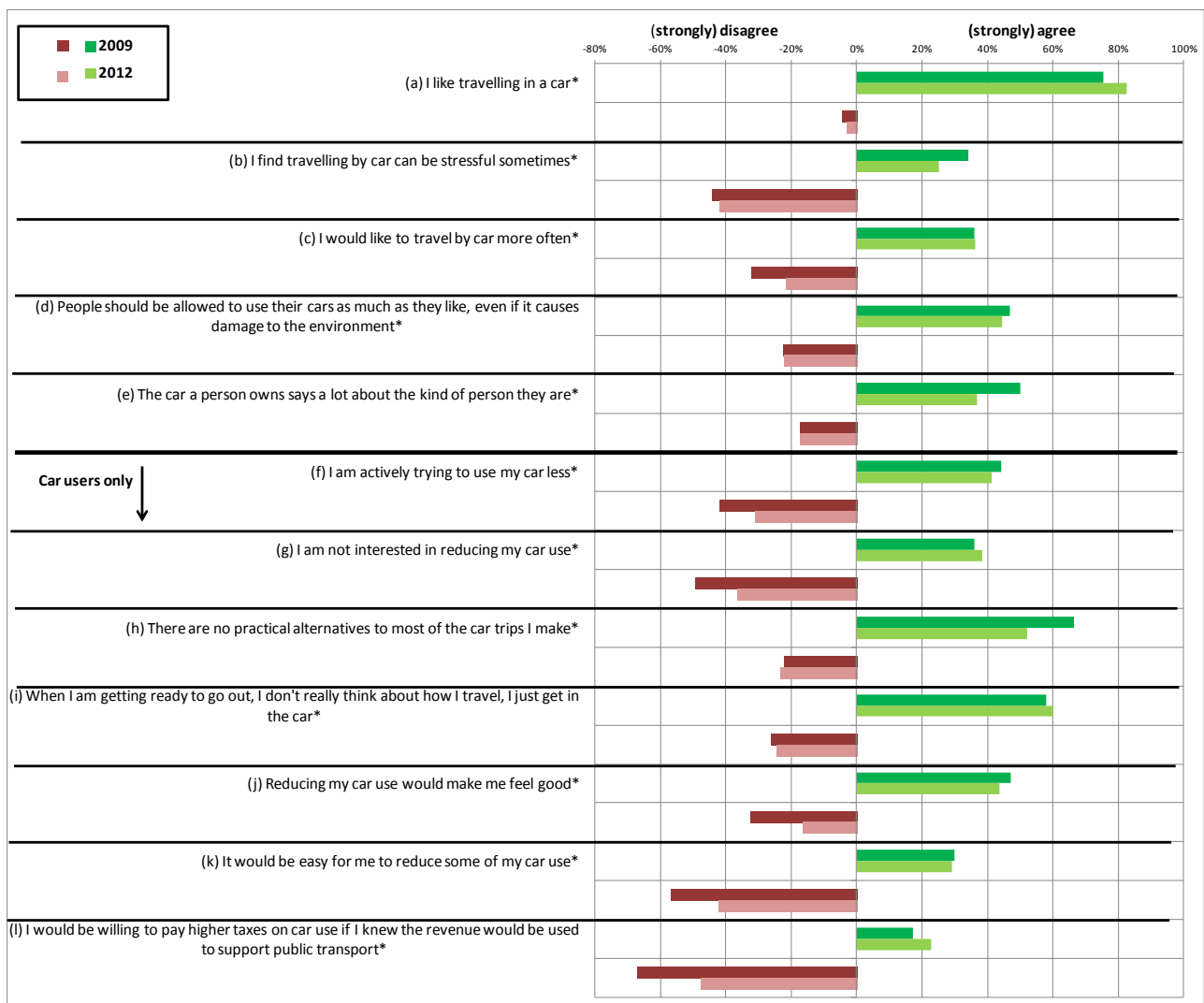
	Change in trip mode share (main mode) across SCSP target areas			Change in trip mode share in comparable areas	Corroborative support for change		
	From SCSP evaluation travel diaries 2009 - 2012			From analysis of national SHS data 2008-11	Self-reported frequency from household survey (use > 2 days a week)	Count data	Local user surveys
	2009	2012	%-point change	%-point change	%-point change		
Walking	45.9%	48.2%	+2.3	-2.8	+5.1	N/A	N/A
Cycling	0.5%	1.3%	+0.8	-0.4	+1.1	An average fall of 9% across count locations	N/A
Bus	18.5%	14.3%	-4.3	-0.4	+1.1	N/A	N/A
Car as driver	24.9%	23.0%	-1.9	+2.7	-3.5	Road traffic monitoring shows 4% fall	N/A
Car as passenger	7.7%	10.4%	+2.7	+1.2	+1.9	N/A	N/A
Train	0.1%	0.4%	+0.3	-0.1	-0.4	N/A	N/A
Motorbike	0.0%	0.1%	+0.1	-0.4	-0.5	N/A	N/A
Taxi	2.1%	2.0%	-0.1	-0.5	-0.4	N/A	N/A
Notes	<p>Blue shading shows observed change is statistically significant at $p < 0.05$</p> <p>n/a means data not available or not collected</p>						

6.0 Attitudinal Outcomes

Attitudes to the car

- 6.1 Figure 6.1 shows the changes between 2009 and 2012 for all the attitudinal measures related to the car. All changes are statistically significant but the overall pattern is one of relatively stable attitudes (although it should be noted that Figure 6.1 disguises some shifts between strongly (dis)agree & (dis)agree). Note that questions a – e were asked of the whole sample but questions f – l were asked of car users only.
- 6.2 The results suggest that car travel in 2012 is regarded as slightly *less* stressful than in 2009 (b). Overall, there are still more people saying they would like to increase their car travel than reduce it and the greater disagreement to this statement indicates there may be even more desire to use cars in 2012. Given that there has been a reduction in car driver mode share in Dundee over the period, it is possible that, for some people, this reduction in car use is not regarded as a positive thing. It appears from these results that concern about the environmental impacts of car use in 2012 has at least stabilised (d) in Dundee and car users also say they are slightly more willing to pay higher taxes on car use if they knew the revenue would be used to support public transport (l).
- 6.3 For car users, there is a slightly greater tendency for people to agree (or not disagree) that they are interested in reducing their car use and are actively trying to use their car less (f & g). This suggests that people may feel that they could reduce their car use more than they have already. There is also a statistically significant reduction in the proportion of car users believing there are no practical alternatives to most of the car trips they make.

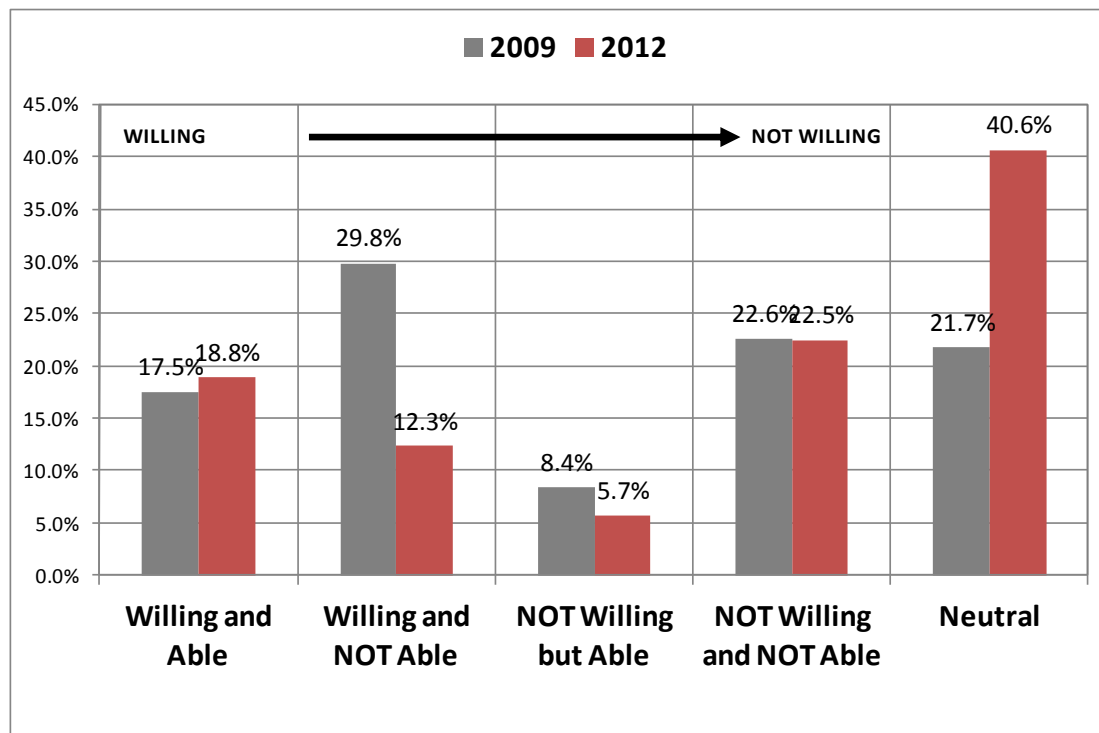
Figure 6.1 - Attitudes to car use in 2009 and 2012



Household survey samples of $N = 1355$, weighted for 2009 and $N = 1056$ for 2012. Samples for individual questions vary. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all questions marked with *.

6.4 Using scores on '(g) I am not interested in reducing my car use' and '(k) it would be easy to reduce some of my car use', the sample can be segmented into four groups depending on their combination of scores on these two items. Figure 6.2 compares the sample proportions which fell into these four groups in 2009 and 2012. The change in the proportion of respondents in each segment was statistically significant between the two years and shows a small increase in the 'able and willing' segment and a reduction in the 'willing and not able'. This concurs with the above analysis which suggests there may still be a latent willingness or desire to reduce car use in Dundee.

Figure 6.2 – Segmentation of attitudes to car use reduction

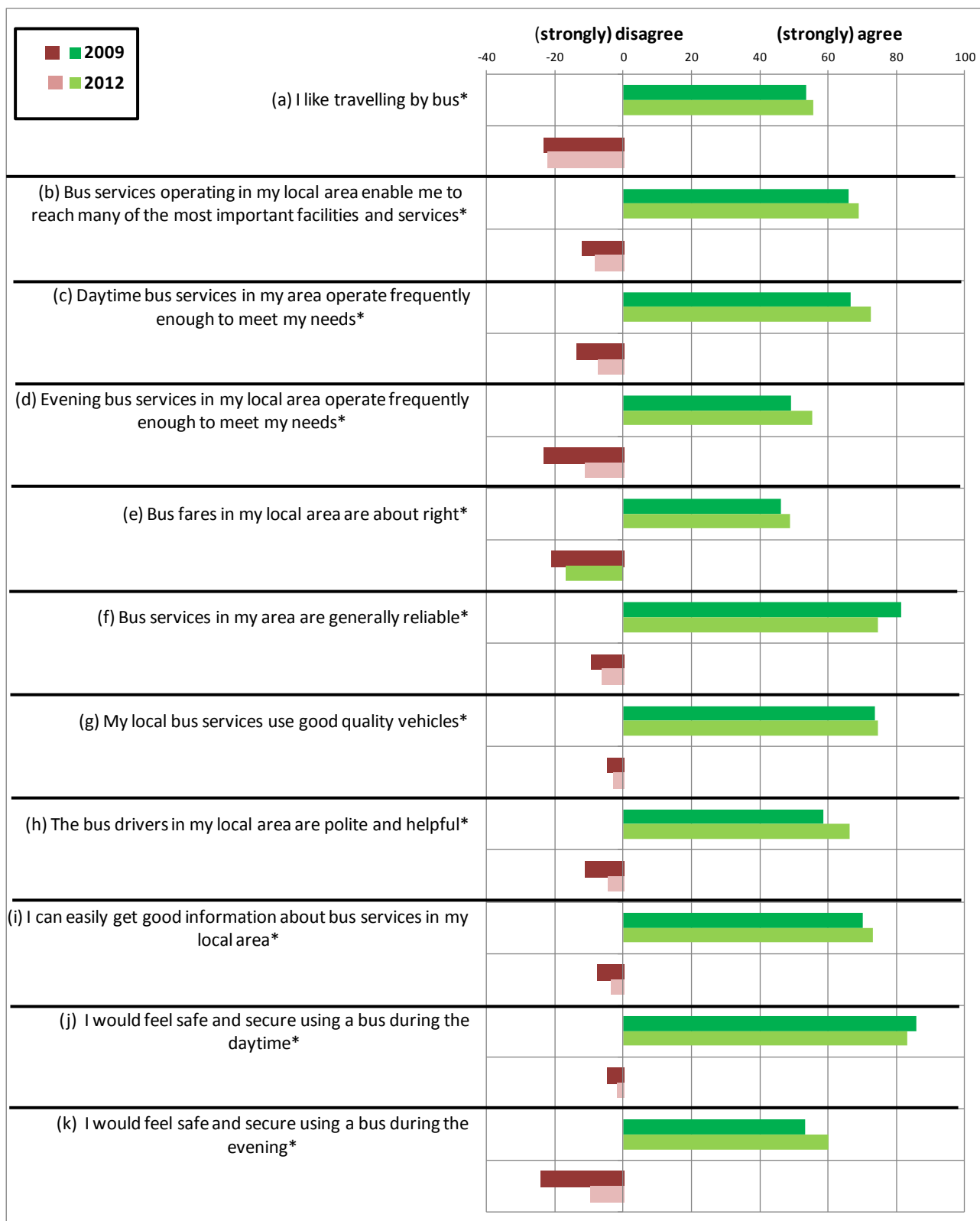


Household survey samples of $N = 1355$, weighted for 2009 and $N = 1056$ for 2012. Samples for individual questions vary. Differences between 2009 and 2012 are statistically significant at $p < 0.05$.

Attitudes to the bus

- 6.5 Figure 6.3 displays the agree/disagree scores for all the attitude questions related to the bus in 2009 and 2012. Attitudes towards many aspects of bus travel appeared to have improved slightly since 2009. The biggest improvements seem to be in relation to daytime and evening frequency. The proportion of people agreeing that they can 'easily get good information about bus services' has also increased slightly, but opinions about reliability have deteriorated.

Figure 6.3 - Attitudes to bus travel in 2009 and 2012

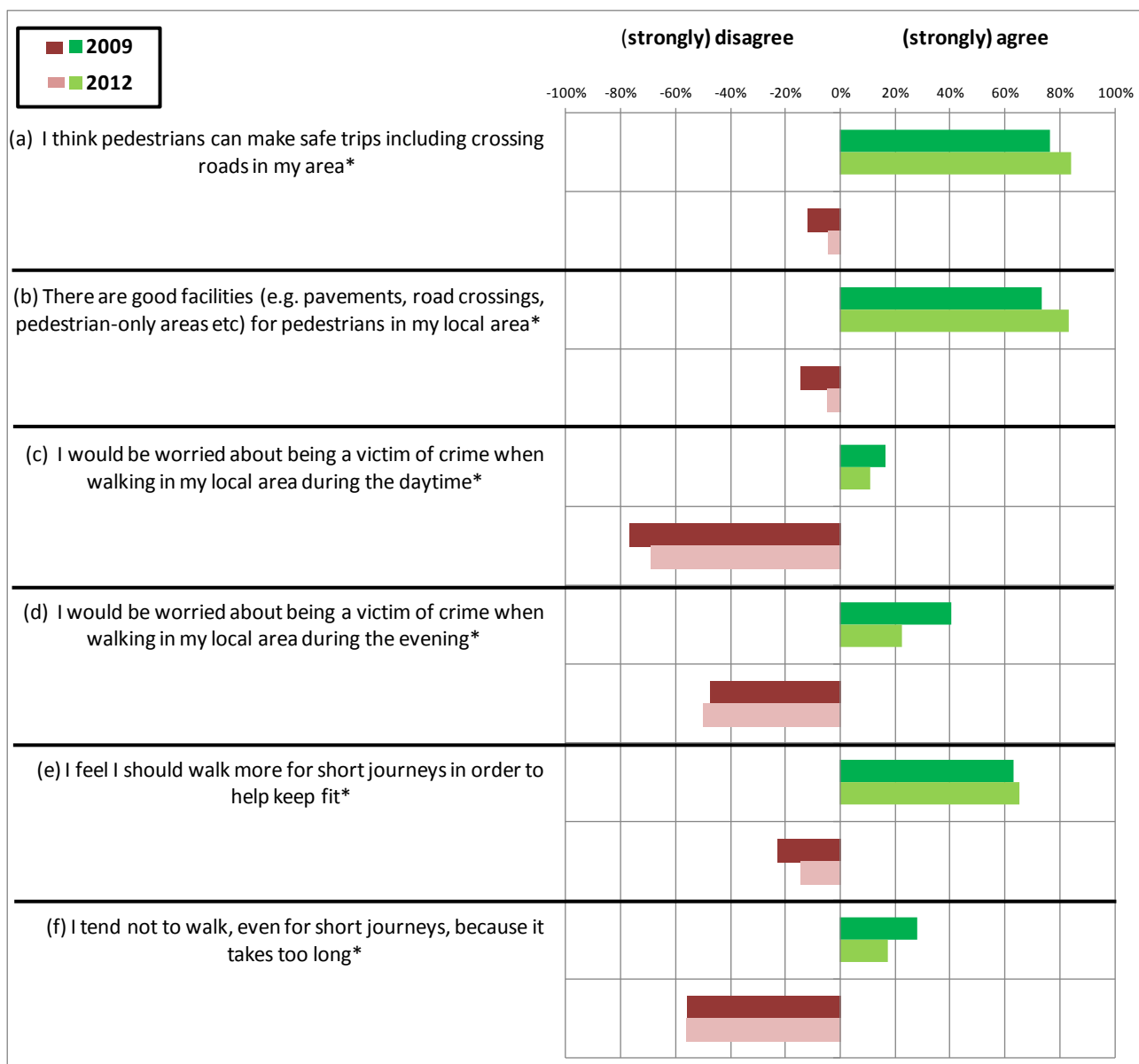


Household survey samples of $N = 1355$, weighted for 2009 and $N = 1056$ for 2012. Samples for individual questions vary. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all questions marked with *.

Attitudes to walking

- 6.6 As shown in Figure 6.4, attitudes to some aspects of walking have improved, but others have deteriorated. Dundee residents have improved their perceptions of the walking environment and believe there are safer crossings and pedestrian facilities. Changes in the perceptions of personal security are mixed. A few more people in 2012 agree (and less disagree) with the statement that they should walk more to keep fit and slightly less people say they do not walk because it takes too long.

Figure 6.4 - Attitudes to walking in 2009 and 2012

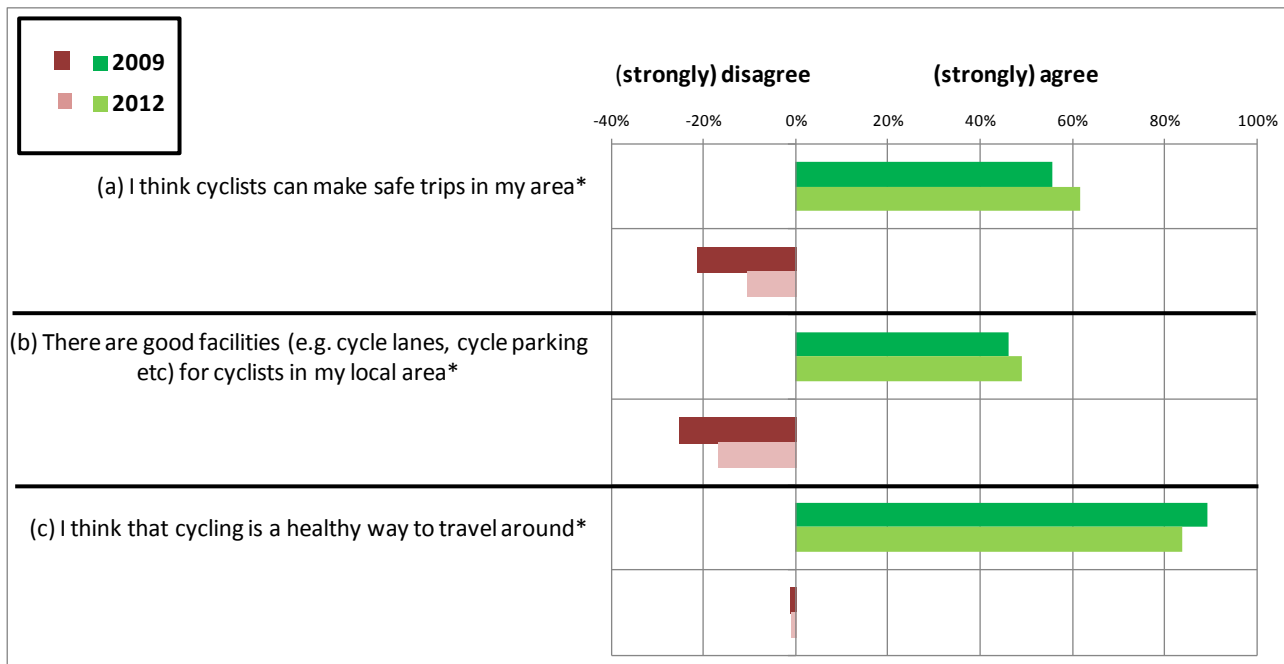


Household survey samples of $N = 1355$, weighted for 2009 and $N = 1056$ for 2012. Samples for individual questions vary. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all questions marked with *.

Attitudes to cycling

- 6.7 Some attitudes to cycling have improved. More people agree (and less disagree) that cyclists can make safer trips and the same is true for perceptions about facilities for cycling such as cycle lanes and cycle parking. There has been a slight (and statistically significant) decrease in the number of people agreeing that cycling is a healthy way to travel.

Figure 6.5 - Attitudes to cycling in 2009 and 2012

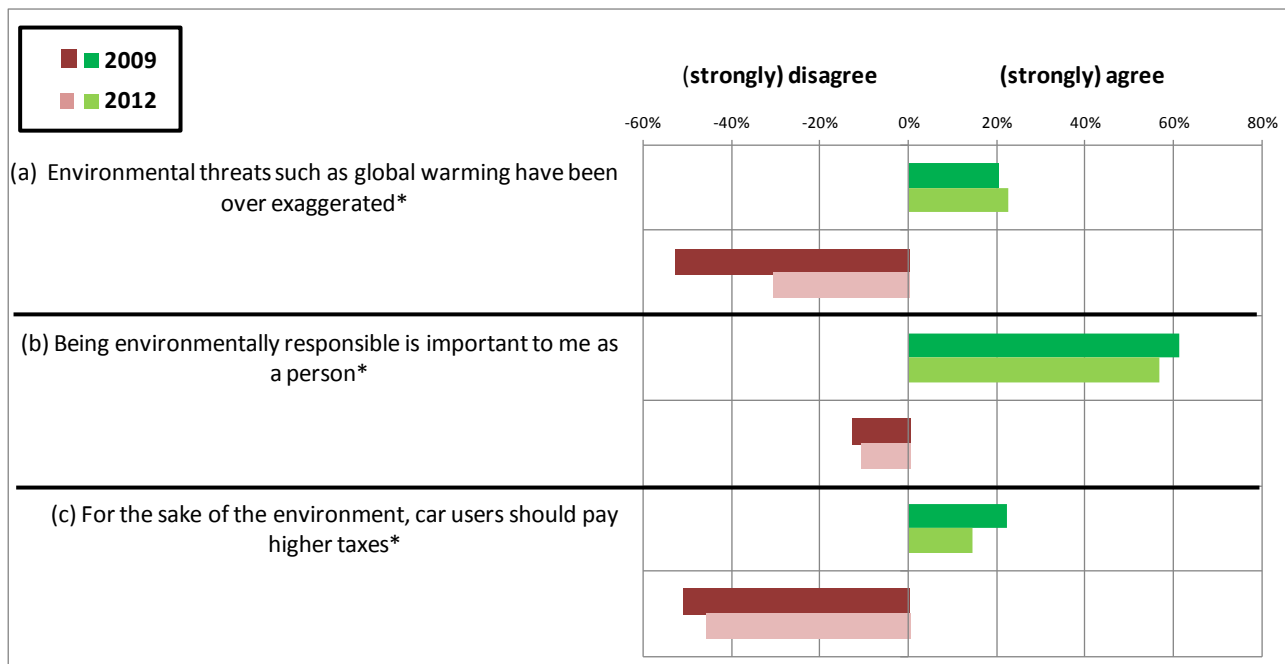


Household survey samples of $N = 1355$, weighted for 2009 and $N = 1056$ for 2012. Samples for individual questions vary. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all questions marked with *.

Attitudes to the environment

- 6.8 Since 2009, fewer people agree (and more disagree) that environmental problems have been exaggerated. However, like the question asked only to car drivers above, there is more sympathy to the idea that car drivers should pay higher taxes and slightly more people agree that being environmentally responsible is important to them.

Figure 6.6 - Attitudes to the environment in 2009 and 2012



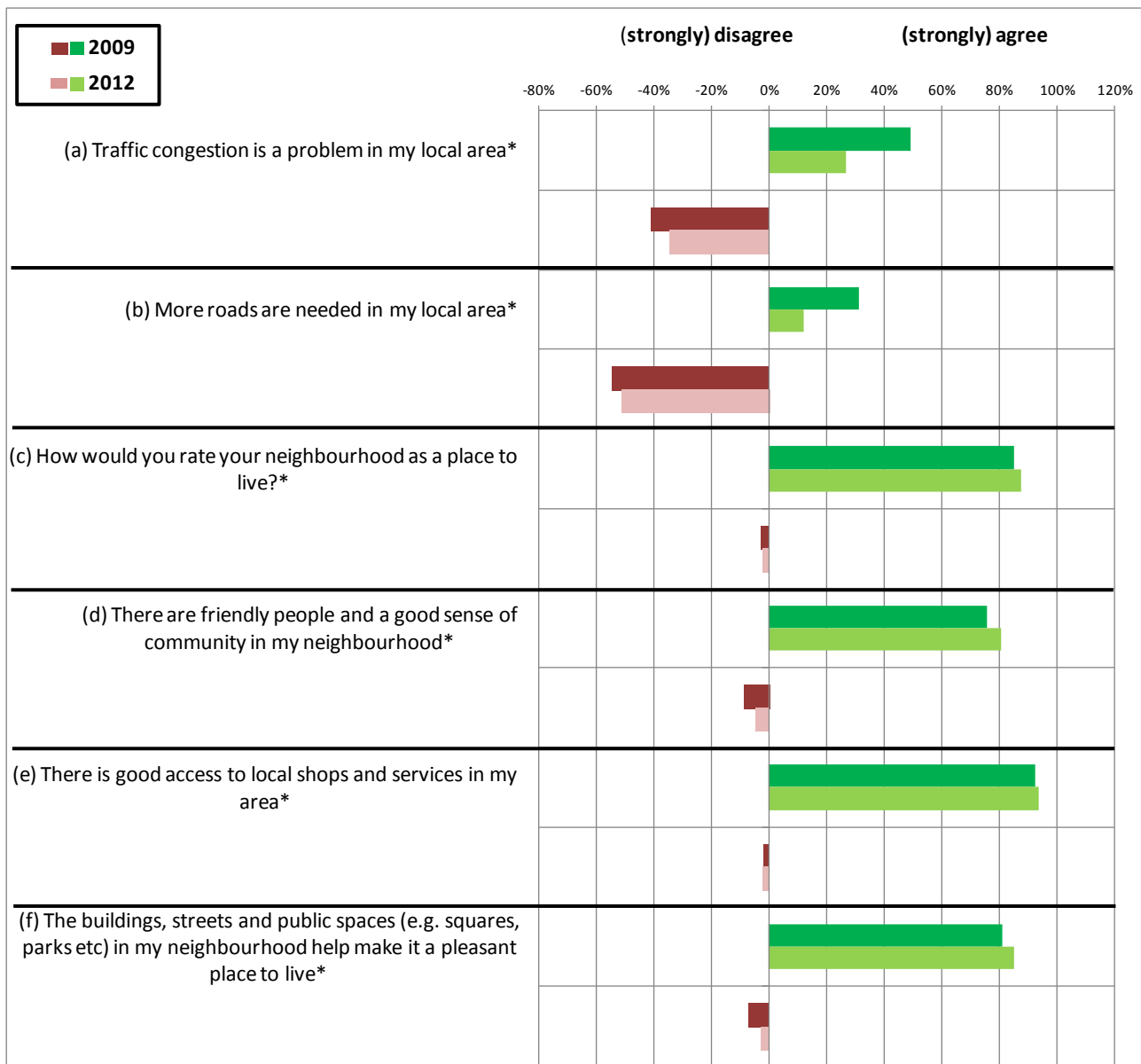
Household survey samples of $N = 1355$, weighted for 2009 and $N = 1056$ for 2012. Samples for individual questions vary. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all questions marked with *.

Attitudes to the local neighbourhood

Observed changes

- 6.9 Figure 6.7 shows a reduction in the degree to which congestion is seen as a problem in Dundee and fewer people believe that more roads are required. On other neighbourhood indicators, there has been less of a change, but in each case there has been some improvement in perceptions. Overall rating of the neighbourhood has only improved very slightly. There is slightly higher agreement (but almost counterbalanced by less disagreement) that the built environment makes for a pleasant place to live and there are friendly people and a good sense of community.

Figure 6.7 - Attitudes to the local neighbourhood in 2009 and 2012

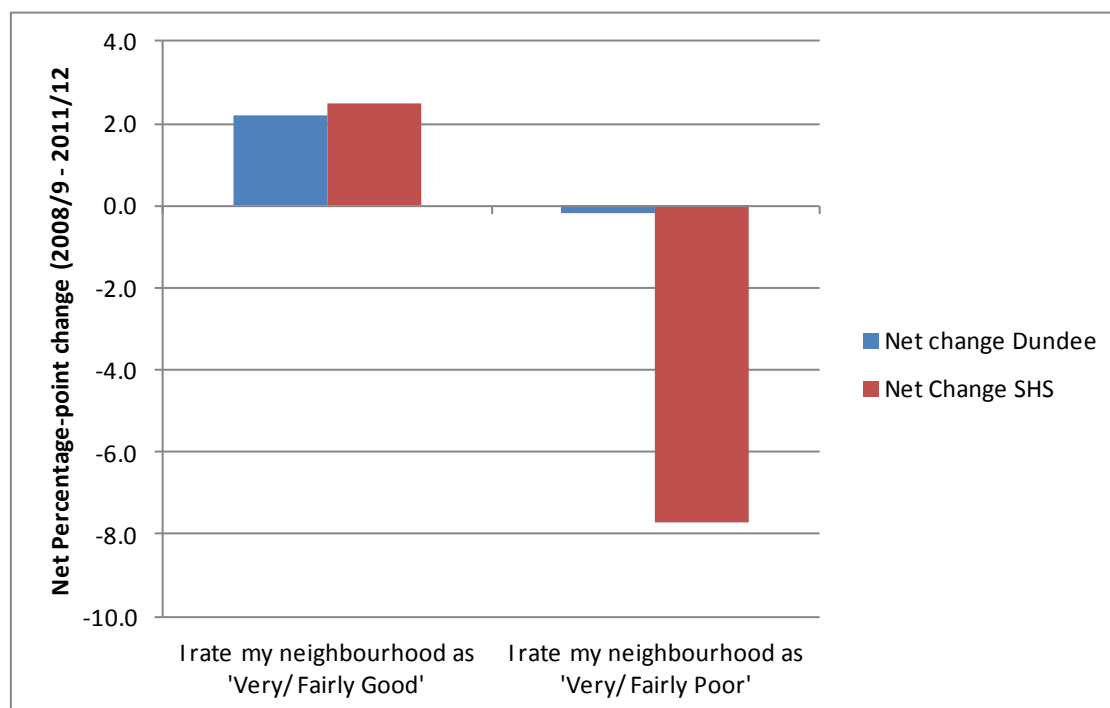


Household survey samples of $N = 1355$, weighted for 2009 and $N = 1056$ for 2012. Samples for individual questions vary. Differences between 2009 and 2012 proportions are significant at $p < 0.05$ for all questions marked with *.

Comparison with SHS statistics

- 6.10 The SCSP survey asked an identical question to the SHS survey 'How would you rate your neighbourhood as a place to live'. In Figure 6.8 we see that the increase in the number of people rating their neighbourhood as 'very' or 'fairly' good has increased only very slightly more than the SHS data for equivalent sized downs. Also, the reduction in the number of people rating it as poor is much greater.

Figure 6.8 - Comparison of SCSP and SHS trends in neighbourhood rating (net percentage-point changes 2008/9 – 2011/12)

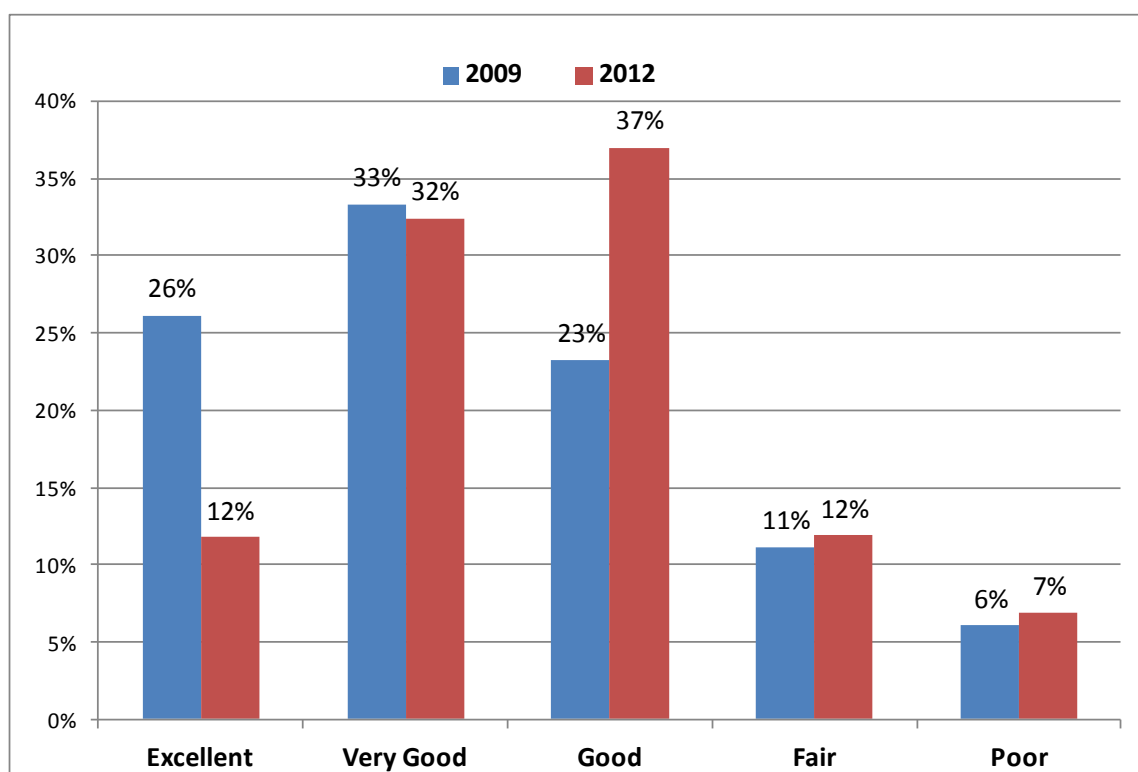


Household survey samples of $N = 1355$, weighted for 2009 and $N = 1056$ for 2012. Samples for individual questions vary. Differences between 2009 and 2012 proportions in SCSP sample on the neighbourhood rating question are significant at $p < 0.05^*$.

Self-reported health and physical activity

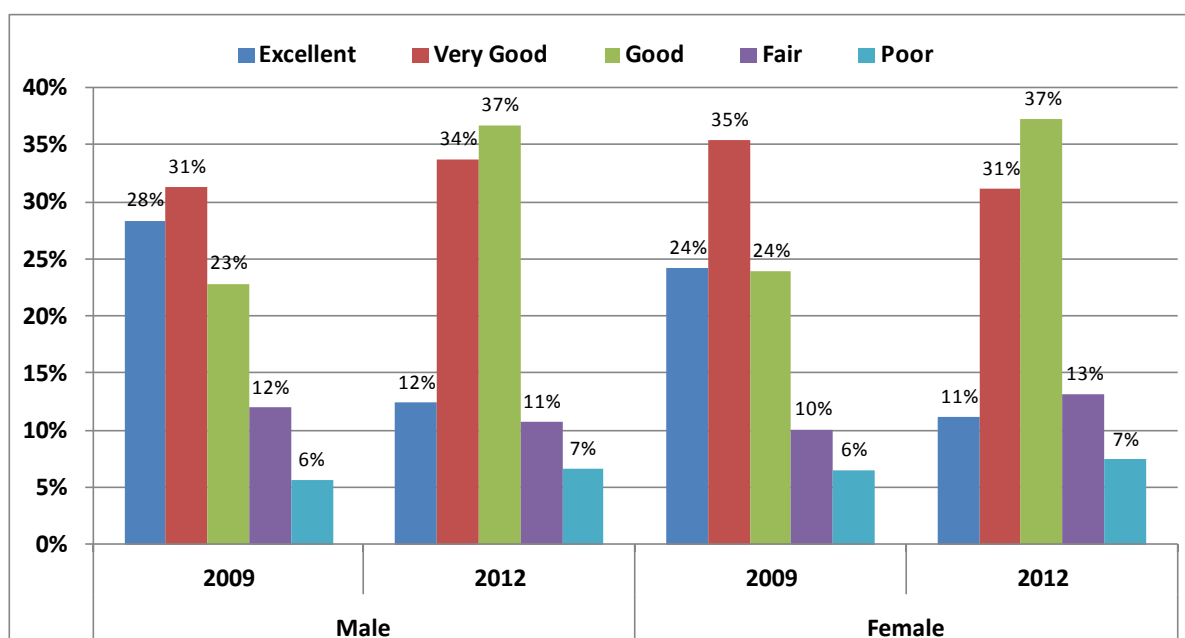
- 6.11 Both self-reported levels of physical activity and self-reported health were surveyed to establish the degree to which active travel may be contributing to physical activity levels and to monitor any changes over the intervention period.
- 6.12 Figure 6.9 summarises the responses to self-rating of general health in 2009 and 2012. This shows that there has been a drop in the proportion of people who say their health is excellent or very good (from 59% to 44% combined) and an increase in those who claim their health is only poor or fair (from 17% to 19% combined). When broken down by gender (Figure 6.10), these changes are very similar for both genders.

Figure 6.9 - Ratings of general health in 2009 and 2012



Household survey samples of $N = 1355$, weighted for 2009 and $N = 1056$ for 2012. Differences between 2009 and 2012 proportions are significant at $p < 0.05$.

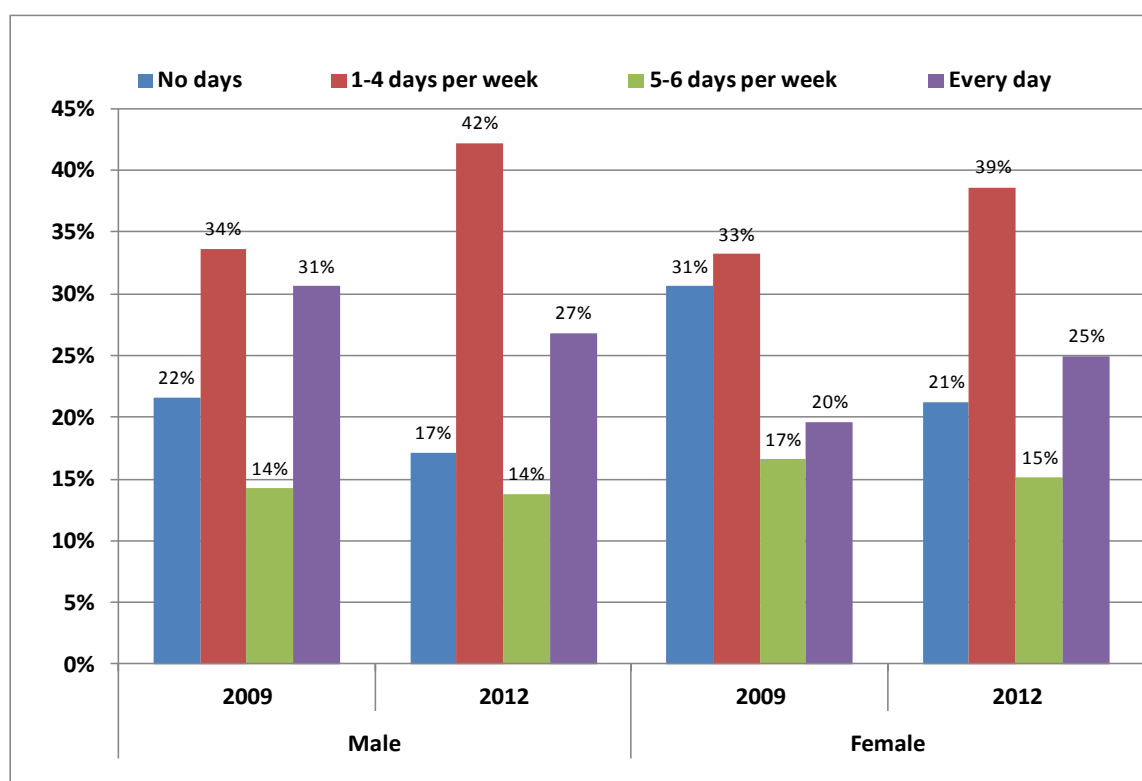
Figure 6.10 - Ratings of general health by gender in 2009 and 2012



Household survey samples of $N = 1355$ (Male $N=653$, Female = 694), weighted for 2009 and $N = 1056$ for 2012 (Male $N=515$, Female = 541). Differences between 2009 and 2012 proportions are significant at $p < 0.05$.

- 6.13 Respondents were asked to record how many days per week (outside of work) they typically undertake at least 30 minutes of moderate exercise. The wording from the Scottish Household Survey was used to explain that this activity did not need to be undertaken all in one go, but could be across more than one session in a day.
- 6.14 The Scottish Physical Activity Strategy recommends that adults should be accumulating 30 minutes or more of moderate activity on most days of the week¹¹. There is a long term target in Scotland for 50% of all adults over 16 to meet this level by 2022. Overall, in 2009 40.2% undertook this level of exercise and this had not changed in 2012 (40.5%). Consistent with the aims of DTA to ensure that the SCSP programme targeted the most needy, is the reduction in the number of people who say they exercise on 'no days' which fell from 26.2% to 19.2%.
- 6.15 Figure 6.11 looks at physical activity levels by gender. Here we see fewer men are reaching the target (down from 45% to 41%), but slightly more women are (up from 36% to 40%). Men exhibit a greater increase in the number of people exercising 1-4 days per week. Around a fifth of both sexes in Dundee still undertake no physical exercise at all.

Figure 6.11 - Frequency of at least 30 minutes per day of moderate exercise per week

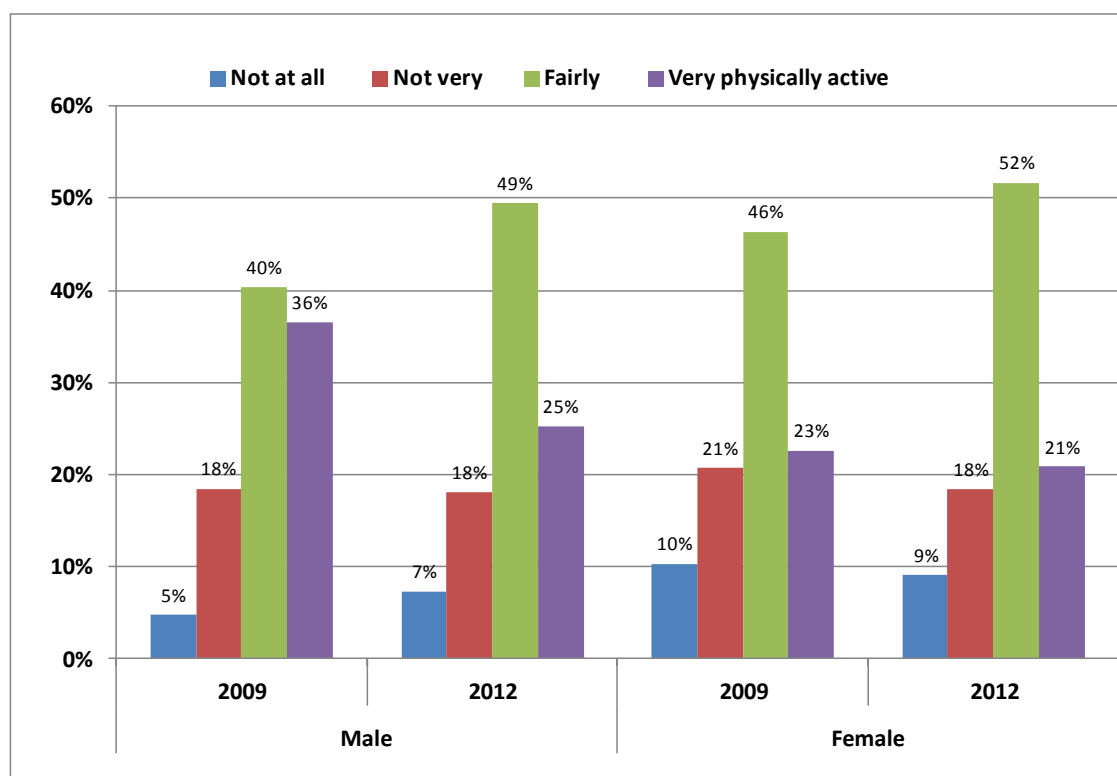


Household survey samples of $N = 1355$ (Male $N=653$, Female = 694), weighted for 2009 and $N = 1056$ for 2012 (Male $N=515$, Female = 541). Differences between 2009 and 2012 proportions are significant at $p < 0.05$.

¹¹ <http://www.scotland.gov.uk/Topics/Health/health/Introduction>

- 6.16 Respondents were also asked to record how physically active they are at work or college. Figure 6.12 breaks this down by gender and shows once again that both males and females have reduced the highest level of activity and that once again it is disproportionately more men than women who have reduced their activity. Those who say they are fairly or very active at work have increased for both sexes, however.

Figure 6.12 - Physical activity carried out at work by gender in 2009 and 2012



Household survey samples of $N = 1353$ (Male $N=635$, Female = 713), weighted for 2009 and $N = 1040$ for 2012 (Male $N=490$, Female = 550). Differences between 2009 and 2012 proportions are significant at $p < 0.05$.

Comparison with the Scottish Health Survey

- 6.17 The SCSP asked identical or similar questions on health and physical activity to the Scottish Health Survey (SHeS). When comparing the change in these indicators between 2009 and 2012 to the changes reported in this comparison data (Table 6.1) (although note the period covered in the SHeS is only 2008 – 2010), it suggests that the SCSP sample residents of Dundee have shown an improvement in self-reported general health compared to the wider region covered by the Health Board for the area.
- 6.18 With respect to the physical activity target, however, Dundee seems to have performed worse with a smaller increase in the number of people reaching the target in the SCSP sample compared to an increase in the Health Board area.

**Table 6.1 - Difference in self-reported health indicators in Dundee and Scottish Health Survey
between 2009-12 or 2008-10**

	%point Change	
	Dundee SCSP (2009 – 2012)	Scottish Health Survey^ (2008 – 2010)
How is your health in general?		
<i>Excellent~/ Good/ Very</i>	-1.6	-4%
<i>Fair</i>	+ 0.7	0%
<i>Poor</i>	+0.9	+ 2%
Physical Activity Target		
<i>% reaching the target</i>	+0.2	+4%

^ Tayside Health Board. ~Note that the category 'excellent' is additional in the SCSP data.

7.0 Awareness Outcomes

- 7.1 The 2012 post-intervention survey asked a variety of questions about people's awareness of changes to various transport infrastructures and services in their town. It also attempted to gauge recognition and interpretation of the various SCSP campaigns and brands in each of the towns. As these questions were not asked in 2009, we cannot compare the answers over time to see how things have changed. As a result, we present here for comparison the data from the comparator areas¹². This allows us to see whether, even in those towns without an SCSP programme, people still perceive improvements to have taken place and recognise a local campaign. This also helps us to control for survey bias in these types of questions¹³.

Perceptions of improvements to transport infrastructure and services

- 7.2 Figure 7.1 compares scores for Dundee and comparator areas on various questions about infrastructure and service improvements. It can be seen that, compared to the comparator sample, Dundee residents are more convinced that their town has witnessed improvements to some transport related services. Most notable is the much greater acknowledgement that public transport, walking and cycling information has improved. The walking environment and opportunities for lift sharing have also improved in comparison to the comparator areas. There is very little difference in opinions on cycling routes. There is also general agreement that parking management has improved and much less disagreement with this than in the comparator sample.

Awareness and understanding of the SCSP programme

- 7.3 In order to gauge recognition of the branding that had been used during the SCSP programme, respondents were asked if they had heard of the Dundee Travel Active (or an equivalent campaign in the comparator areas)¹⁴. Figure 7.2 shows around a fifth of the sample said they had heard of the campaign but 68% said they hadn't heard of it, compared to only 10% or 84% in the comparator areas. Just over a third (34%) recognised the logo for these campaigns, compared to 21% in the comparator areas.
- 7.4 Respondents were also asked what they thought the campaign was about and were given a number of options or an 'other' option. Figure 7.3 shows that the campaign in Dundee was primarily thought to be about encouraging people to be more active, with fewer people believing that it was about getting people to use cars less. In the comparator areas,

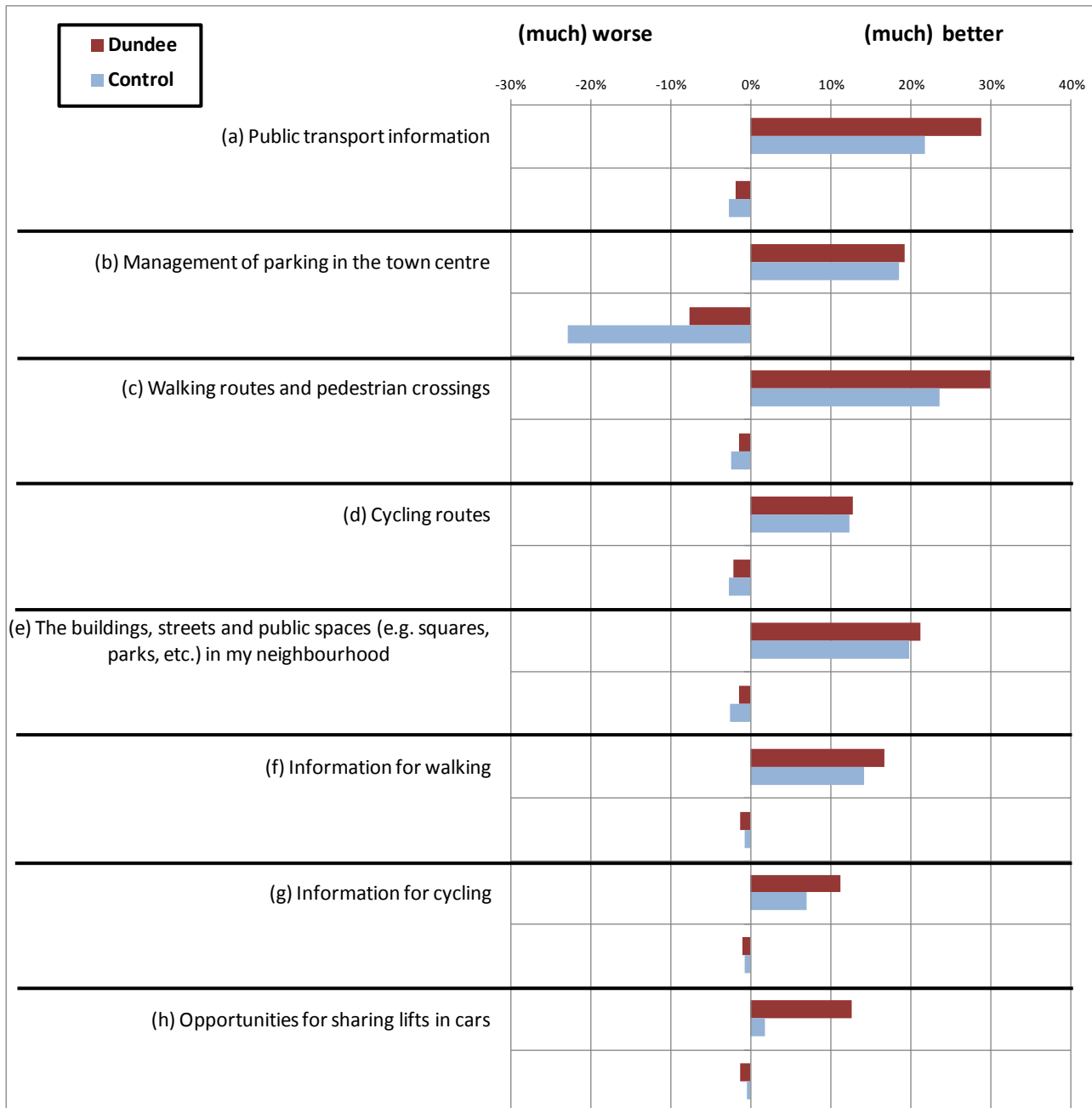
¹² With weightings applied so as to ensure the same demographic matching from the comparator samples. See the main report for an explanation.

¹³ i.e. the idea that a proportion of people are likely to say they recognise something even when they don't and we assume this tendency is the same in both the SCSP area and the comparator towns.

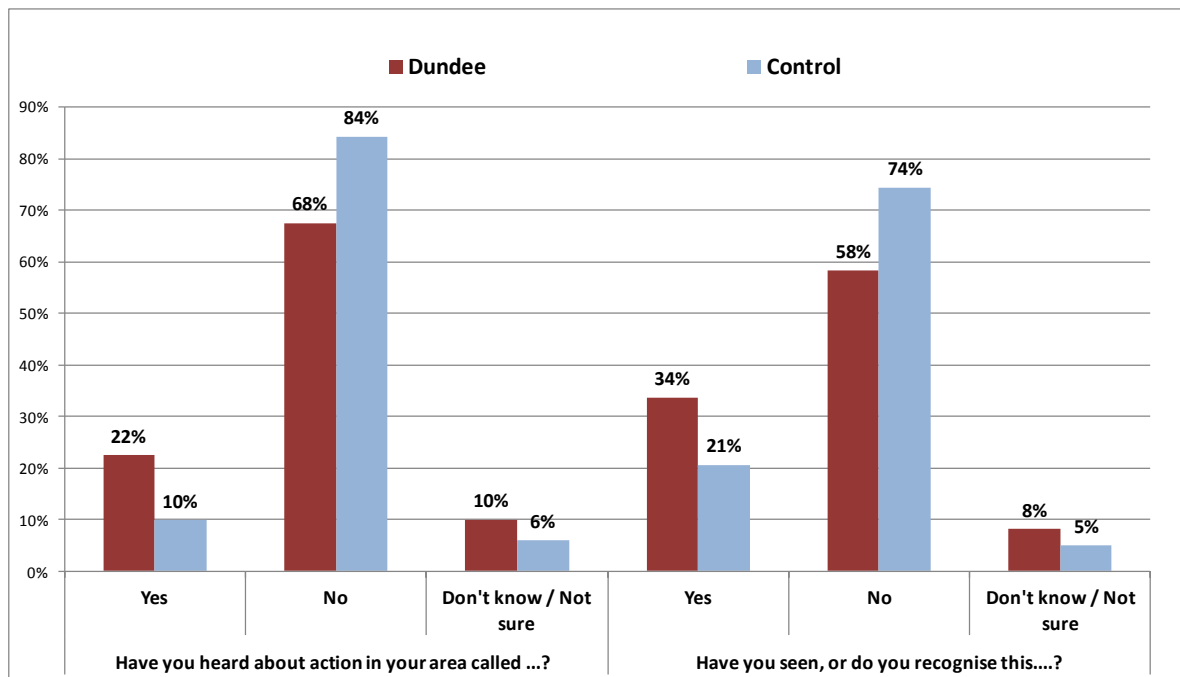
¹⁴ Arbroath: Travelwise Angus; Bearsden: Stepchange; Dalkeith: Travel wise.

people were much less inclined to think the campaign was to do with encouraging physical activity.

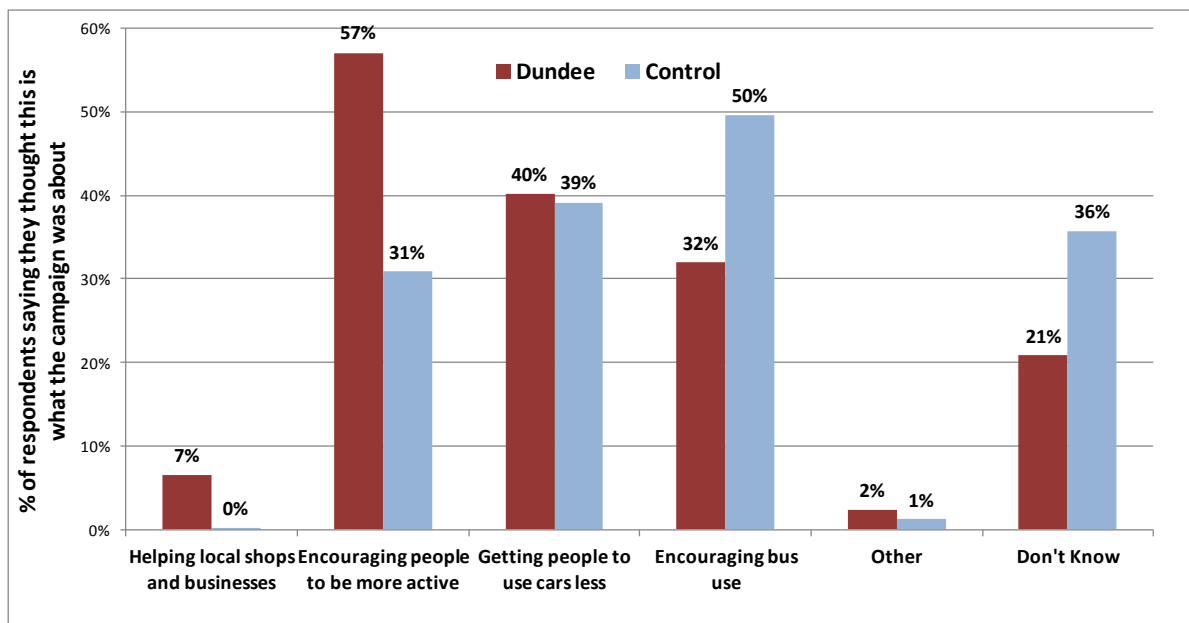
Figure 7.1 - Comparison of perceived changes to infrastructure and services in Dundee and comparator area



Household survey samples of N = 1056 (for Dundee weighted in 2012) and N= 772 (for comparator area weighted in 2012) Samples for individual questions vary. The above graph misses out the 'neutral' and 'don't know' scores.

Figure 7.2 - Recognition of the SCSP brand in Dundee and in the comparator area

Household survey samples of N = 1040 (for Dundee weighted in 2012) and N= 2316 (for comparator area weighted in 2012) Samples for individual questions vary.

Figure 7.3 – Perceptions of the aims of the SCSP brand in Dundee and in the comparator area

Household survey samples of N = 1040 (for Dundee weighted in 2012) and N= 2316 (for comparator area weighted in 2012) Samples for individual questions vary.

8.0 Impacts of the Dundee SCSP programme

- 8.1 The SCSP programme implemented in Dundee sought to change travel attitudes and behaviour to support a number of policy objectives. The monitoring and evaluation activities were unable to measure impacts directly, as changes in the local economy and society are affected by many factors. The assessment of impacts is therefore derived from the travel attitude and behaviour surveys and associated data collection activities.
- 8.2 The impact summary table in Table 8.1 gives an indication of where the potential impacts are likely to lie, with qualitative commentary based on the evidence collected in the monitoring and evaluation exercise. This is divided into five key areas:
- Economy
 - Accessibility
 - Environment
 - Health and integration with other social issues
 - Safety

Table 8.1 – Potential impacts of Dundee SCSP Programme

Policy aim	Direction of impact relative to policy aims	Commentary
Economy		
Reducing the cost of travel	Positive	<ul style="list-style-type: none"> • Small savings have been made due to reduced use of cars and the increased proportion of walking trips.
Travel time savings	Neutral	<ul style="list-style-type: none"> • The small reductions in car trips will be reducing delays to all road based travel modes. • The increased proportion of trips made on foot may have a small dis-benefit as people as people spend longer travelling more slowly.
Net benefits to transport operators	Neutral	<ul style="list-style-type: none"> • Changes in passenger numbers not known but operators have been able to promote their services through the PTP.
Wider economic benefits and location impacts	Positive	<ul style="list-style-type: none"> • After two years of DTA delivery, the Wellgate shopping centre has provided a rent free unit for DTA to help drive footfall and demonstrating integration of the initiative into the retail economy.
Accessibility		
Access to opportunities	Positive	<ul style="list-style-type: none"> • Older, disabled people and people with health problems have particularly benefitted from assistance with access to the countryside through health walks.

Policy aim	Direction of impact relative to policy aims	Commentary
Social inclusion and community development	Positive	<ul style="list-style-type: none"> The volunteer rangers, volunteer schools advisors and volunteer health walk leaders are examples of the increased community capacity.
Environment		
Emissions	Positive	<ul style="list-style-type: none"> Reductions in car trips have led to small reductions in greenhouse gas emissions.
Air quality impacts	Positive	<ul style="list-style-type: none"> DTA air quality campaign has used travel advisors and contact database.
Cultural heritage and townscape	Positive	<ul style="list-style-type: none"> People rate the improvements in the town as slightly positive.
Integration with Health, Regeneration and other Policies		
General health	Neutral	<ul style="list-style-type: none"> Little impact on health identified overall but positive impacts have been reported by individuals.
Physical activity levels	Neutral	<ul style="list-style-type: none"> People are slightly more active with increased walking playing an increasing role but the increase in physical activity is less than the equivalent national SHS change.
Regeneration and land use planning	Positive	<ul style="list-style-type: none"> SCSP programme has been well integrated with the wider City Council plans for development in Dundee.
Political value of changes	Positive	<ul style="list-style-type: none"> There has been strong political support for DTA offering many opportunities to show that Dundee is undertaking innovative approaches.
Safety		
Personal security	Neutral	<ul style="list-style-type: none"> Not identified.
Road safety	Neutral	<ul style="list-style-type: none"> Not identified.

9.0 Learning Points

- 9.1 The overarching lesson from the pilot has been that by working jointly with partners in a complex administrative environment new opportunities have emerged. SCSP has been a ground-breaking project and the culture of innovation and partnership that has developed in the Council will almost certainly lead to further future benefits.
- 9.2 The pilot has focused on active travel and the feedback through day to day contacts on programme delivery has been very positive. It has been harder to identify these benefits from data on active travel for the town but Dundee has seen a small growth in the proportion of walking and cycling trips.
- 9.3 Key learning points have been that:
- The active travel promotion has sought to target those who might benefit most. Investing more time and money in vulnerable groups costs more than simply targeting people most likely to change behaviour, but is important for an inclusive approach to behaviour change. The reduction in the numbers of people taking no exercise is positive but Dundee continues to have a high proportion of people who fall below national targets for active living.
 - The programme learned that a diversity of approaches is needed to be able to target different groups of people with different needs. To make a diverse programme understandable, it needs a strong brand. The Travel Active brand emphasised the health focus of the programme, but local people found this confusing for some objectives of the programme.
 - The project delivery has been fairly dynamic, responding to problems as it proceeded, but it has not been able to follow up successes as effectively as it might due to limited by data on emerging impacts.
 - Cycle promotion initiatives recognised the relatively low baseline levels of cycling at the start of the project and shows that change takes time. There are now more positive attitudes to cycling which offers a platform for future initiatives.
 - A longer programme would be needed to develop the various initiatives that have been started to reap the full benefits. The project has invested in the organisational structures that will help future cross sector projects. The forward funding commitments already made look set to sustain these benefits into the future.