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## WHAT SHOPPERS WANT – DESIGN FOR ECONOMIC VITALITY

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## ABSTRACT

Retailers often object to road space reallocation projects as they often believe such schemes will negatively impact on their businesses, primarily as a result of loss of parking. The reason parking is considered vital is that local business owners often overestimate the importance of car based business and underestimate the value of cyclists and pedestrians.

International studies have shown that cycling and walking are important to the local economy and car access is not the primary concern of shoppers. However, only local evidence on the economic and social benefits of providing for pedestrians, cyclists and public transport will convince retailers of the benefits.

A New Zealand based research study collected data from shopping centres located on arterial roads and in central cities to identify how retail trips are currently made, to understand the economic impact of different transport users and what factors are important in choosing to shop in local areas for both shoppers and retailers.

The data collected from the nine shopping centres across New Zealand shows that sustainable transport users account for 40% of the total spend in shopping centres but only accounted for 37% of all shoppers. The study identified that retailers generally overestimate the importance of on-street parking outside shops. Shoppers value high quality pedestrian and urban design features in shopping centres, over parking and are willing to walk from other locally available parking.

## INTRODUCTION

Globally, there has been a dramatic increase in vehicle traffic on road networks. The approach to transport and planning policy to address this increase in several countries, including New Zealand, has often been that of a “predict and provide” or “laissez-faire” approach. This has resulted in the design of an environment that favours the motor vehicle, providing the most efficient trip from A to B as possible. However, the experience of many countries is that building more road capacity encourages more traffic and does not solve traffic problems long term (Duranton et al, 2009). There are well known negative effects that are a result of the “predict and provide approach”, including increasing air pollution and noise and in many cases a reduction in the quality of the transport system provided for walking, cycling and public transport, as more of the available road space is given to the motor-car.

In terms of shopping centres, especially on arterial roads, this has often resulted in less space being allocated to sustainable transport modes, including pedestrians, cyclists and public transport users. Even where the space available has not been reduced, the increasing volumes of traffic, and in many cases increases in speed (when more lanes are provided), has made the environment less attractive to pedestrians, both in terms of spending time in an area and being able to cross the road.

To address this issue, many continental European countries have adopted transport and urban design policies that can provide a good transport network for all modes of transport. The intention is to encourage more walking, cycling and public transport journeys, which in turn will help to address the impact of congestion in urban centres and improve accessibility to local facilities, including local shopping centres. Taking a lead from Europe, the transport and urban design policies in Australasia, the United States and United Kingdom (Department for Transport, 2007) have been changing from a “predict and provide” to a “demand management” approach. The new policies are focused on making better use of existing infrastructure for all transport modes and in developing more vibrant and safe places/spaces along transport corridors, that more people want to visit.

## BACKGROUND LITERATURE

The New Zealand Urban Design Protocol was published by Ministry for Environment in 2005. It calls for a significant step up in the quality of urban design in New Zealand and a change in the way we think about our towns and cities and identifies seven essential design qualities. Although this is not a transport policy document, the guiding principles mirror the key aims of creating an accessible and permeable transport network. The principle of collaboration about communicating and sharing knowledge across sectors is vital.

The New Zealand Ministry for the Environment commissioned research by McIndoe et al (2005) to establish if there is a persuasive case for the economic, environmental and social benefits of urban design. The research was effectively a literature review of relevant papers to identify where benefits have been assessed in overseas research. Although this was qualitative research, the evidence available suggests that high quality urban design will contribute to economic success over time.

The research highlighted that one of the key problems of creating areas with high quality urban design is the need for developers to minimise the cost of new developments and their limited appreciation of the wider benefits of good quality urban design. Often, the benefits of good urban design are not realised in the short term and therefore do not immediately benefit the developer. This can create a situation where “the market will provide poorer urban design than is socially optimal” (McIndoe et al, 2005). Therefore the introduction of policies to ensure that quality urban design is considered in new developments is vital.

Research conducted by CUBE (2007) on the value of urban design in 10 London high streets found that better urban design results in higher market prices, increased residential property

values and increased rental values. It also found that pedestrians using streets with a lower standard of urban design were willing to pay for better streets.

What is road space reallocation? “Road Space Reallocation involves shifting more road space to specific transportation activities and managing roadways to encourage more efficient and equitable transportation” (Victoria Transport Policy Institute, 2008). Primarily this involves reallocating more space to pedestrians, bicycles and buses, away for the private motor vehicle. Often this also involves improvements in urban design. This approach is particularly important in local shopping centres, many of which are located on arterial or busy inner city roads. This change can be delivered in several ways. There are various programs that have been employed in New Zealand and internationally to allocate road space more equitably; including the development of living streets, complete streets, shared space, road diets and traffic calming schemes. Upgrades on arterial routes often involve footpath widening, improved pedestrian crossings, better urban design and cycle and bus lanes, normally at the expense of traffic lanes or parking.

Shop owners and occupiers have a strong interest in changes that local government make to transport infrastructure and urban design in the vicinity of their shops, and are often the more active participants in consultation around such changes. Such changes can have an impact on their businesses, both positive and negative. This paper presents the outcomes of New Zealand research that considers the importance of sustainable transport modes in terms of shopping centre incomes. The research outcomes provide support to strategies and infrastructure improvements, such as reallocation of road space, that lead to an increase in the number of sustainable transport customers in such centres.

## UNDERSTANDING SHOPPERS’ TRAVEL CHOICES

European studies have shown that shop owners don’t always understand their customers’ travel choices and often under-estimate the proportion of sustainable transport users that visit their shops and in the impact these users have on the income of their businesses. A study conducted in Graz in 1991 (reported by Sustrans, 2006) evaluated the reality of how shoppers travelled in Graz, compared to the perception of how business owners thought people travelled. The results showed that business owners underestimated how many customers walked, cycled and used public transport. Figure 1 shows the results of the Graz Survey.

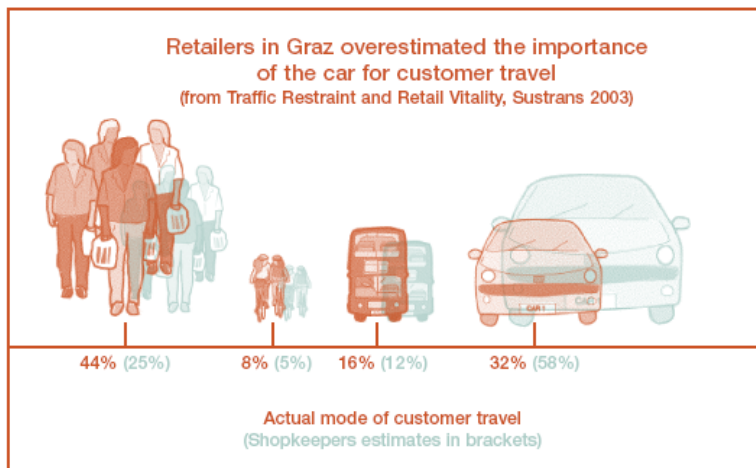


Figure 1 - Shopper Travel Surveys in - Graz, Austria (Source: Sustrans, 2006)

This study was replicated in a local shopping centre along an arterial road in Bristol, UK (Sustrans, 2006). The study involved interviewing 126 retailers and 840 customers. The results again show that business owners overestimate the impact of car travel. The results are shown in Figure 2.

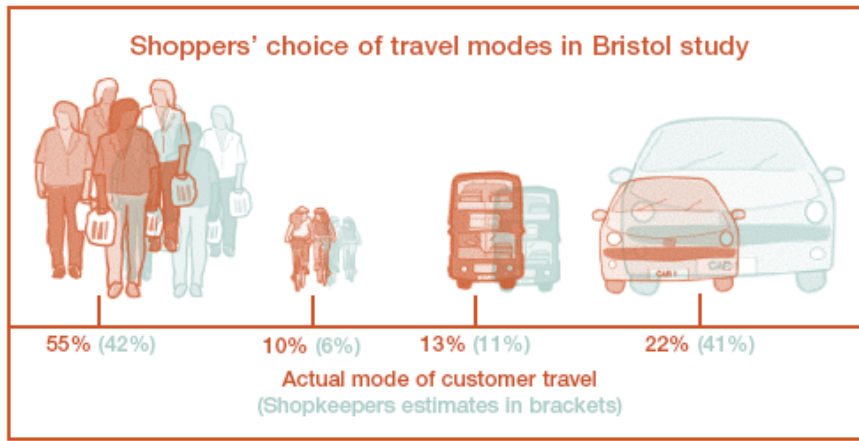


Figure 2 - Shopper Travel Surveys – Bristol, UK (Source: Sustrans, 2006)

Another key result of the Bristol survey was that 86% of shoppers lived within two miles, compared to the perceived estimate of local trade from retailers of only 12%. The results of the shopper and retailer surveys also showed retailers overestimate the requirement of on and off street parking for shoppers using the area and also overestimate the impact of passing trade.

The Edinburgh City Council (Scotland) commissioned a research programme to understand shoppers' behaviour and travel habits in nine shopping centres across the city (Edinburgh City Council, 2000). The shopper surveys were undertaken at nine locations across Edinburgh, as shown in Figure 3. The sites included both central city and suburban shopping centres and a variety of different transport infrastructure.



Figure 3 - Edinburgh & Lothian Shopping Survey Study Locations

A total of 4,578 on-site interviews were completed, complemented by a random sample survey of 12,500 households throughout the Edinburgh and Lothian Region. This sample size makes it

one of the largest surveys of its type in the literature review. The surveys were supplemented by pedestrian surveys at each of the locations.

The results of the 2000 survey were compared to a 1996 shopping survey and this revealed a drop in the proportion of shoppers travelling by bus (from 45% to 39%), although this is partly offset by an increase in rail travel (from 8% to 11%). Car travel had reduced, from 31% to 22%, while the proportion walking has increased from 16% to 25%. The research study concluded that the reallocation of road space to pedestrians and an increase in the residential density in the surrounding inner suburbs has contributed to this shift. Perceived difficulties over parking availability, distribution and charges, combined with the availability of parking at edge-of-town centres, are also likely to have deterred car-borne shopping.

The study identified that the main concern for shoppers was to ensure that there was a good range of shops in an attractive, comfortable environment. Parking was not identified as important. The key issue raised by retailers was that 51% wanted more parking.

The few studies on this topic internationally show that many shop owners don't understand the transport preferences of many of their customers and therefore under-estimate the importance of sustainable road users. This may be one of the key reasons why many shop owners have a strong preference for kerbside parking over the use of such space for sustainable road users, including wider footpaths and bus and cycle lanes. These perceptions of the importance of car users to their business are well entrenched and so evidence (ideally local evidence) through research is required to help make the case for more reallocation of road space.

## RESEARCH METHODOLOGY

This research study had a number of different elements, including a literature review, consultation with transportation planners/engineers (the steering group), shopper and retailer surveys, workshops (the main research effort) and development of a case study compendium. While the main focus of this paper is on the results of the shopper and retailer surveys and workshops, an outline of the other elements of the study is presented for completeness, with more detail provided in Allatt, Turner and Tarjomi (2011).

### Literature Review

The literature review draws experience from relevant research studies that aimed to value the economic benefit of walking, cycling and public transport. In particular, it values the high economic contribution to local shops of these modes, often because sustainable transport users tend to visit shops more frequently than car drivers. Some of the key topics covered by the literature review include; types of road space reallocation, valuing the environment, creating liveable communities and the economic value of pedestrians, cyclists, public transport and car drivers. The three most relevant studies have been presented already, with further studies available in the main report.

### Consultation with Transportation Professionals

As part of this research, consultation was undertaken with the research steering group, consisting of transportation planners and engineers, many of whom "work at the coal face", to help identify the key barriers they see to implementing road space reallocation projects in New Zealand. Some of the key barriers they have encountered with shop owners are:

- that more passing traffic volume means more shoppers;
- parking outside my shop is a right (not a privilege);
- "my business will fail if I don't have on-street parking"; and
- buses will reduce business.

The issue of parking is repeated in this list as it is by far the key barrier to getting support from retailers for reallocation of road space schemes. The steering group membership also highlighted the importance of the correct locations being identified for reallocation of road

space. If benefits specified were not realised, then the experience was that there is likely to be negative public feedback, which will make it more difficult to implement such schemes in the future.

In addition to the economic data on shoppers by mode, the steering group were also very keen to see a compendium of projects, ideally local projects that demonstrate the benefit of reallocation of road space schemes and improved urban design in shopping centres. Hence this requirement was added to the research scope.

## **Collection of transport and economic data from Shoppers and Retailers**

The main element of the research was the collection of economic data from shoppers and retailers in nine shopping centres across New Zealand, three each from Auckland, Wellington and Christchurch. This included shopping centres located along arterial roads and in central city areas. The bulk of the data collection was in the form of shopper and retailer questionnaires. Shoppers were asked how they travelled to the site, how much money they spent during their visit and how often they visit the shopping centre. Retailers were asked to specify how they travelled to work and what proportion of customers they thought travelled by each mode of transport. The outcomes of these surveys are presented in the results that follow.

Workshops were also held with shoppers and retailers in Wellington to better understand what factors and features are important in shopping centres. Both groups were asked to view a set of photos of shopping centres and rate the sites on whether they would want to spend time and money in each of the centres presented. There was also more general discussion on what were the positive factors and features of shopping centres, with respect to transport provision, urban design and the types of shops.

A key issue in the study was that retailers were particularly difficult to engage with (with only 26% filling in the retailer surveys and three turning up to the workshops), despite their normally strong views on specific reallocation of road space projects.

## **Case Study Compendium**

A case study compendium was developed for both New Zealand and overseas reallocation of road space projects. The methodology used to develop this resource was as follows:

- identify the data relevant to the end users (transport professionals);
- development of a standard pro-forma of relevant project information (that could also be used to collect further data going forward);
- review of existing New Zealand and relevant international case studies;
- identify other sources of information to collate information on New Zealand (from the steering group); and
- pull together the information for each project.

The typical information collected on each of the case study sites included: key aims of the scheme, location; type of facilities provided (e.g. widened footpath); cost of facility, economic benefit analysis (where available); before and after traffic and pedestrian count data (if available); consultation undertaken; political decisions made (if available); and policy background. The studies profiled can be found in the main research report (Allatt, Turner & Tarjomi, 2011).

## **SHOPPER & RETAILER SURVEY RESULTS**

The main component of the study was the collection of transport mode choice and economic activity data from shoppers and retailers from nine arterial and central city shopping centres around New Zealand. The intention was to better understand the following matters:

- the mode of transport used by shoppers to arterial and central shopping areas;
- the frequency and duration of shopping trips by transport mode;
- the importance of passing by trips and the demand for kerbside parking;
- average spend by mode per shopping trip; and
- the importance of on-road and off-road parking.

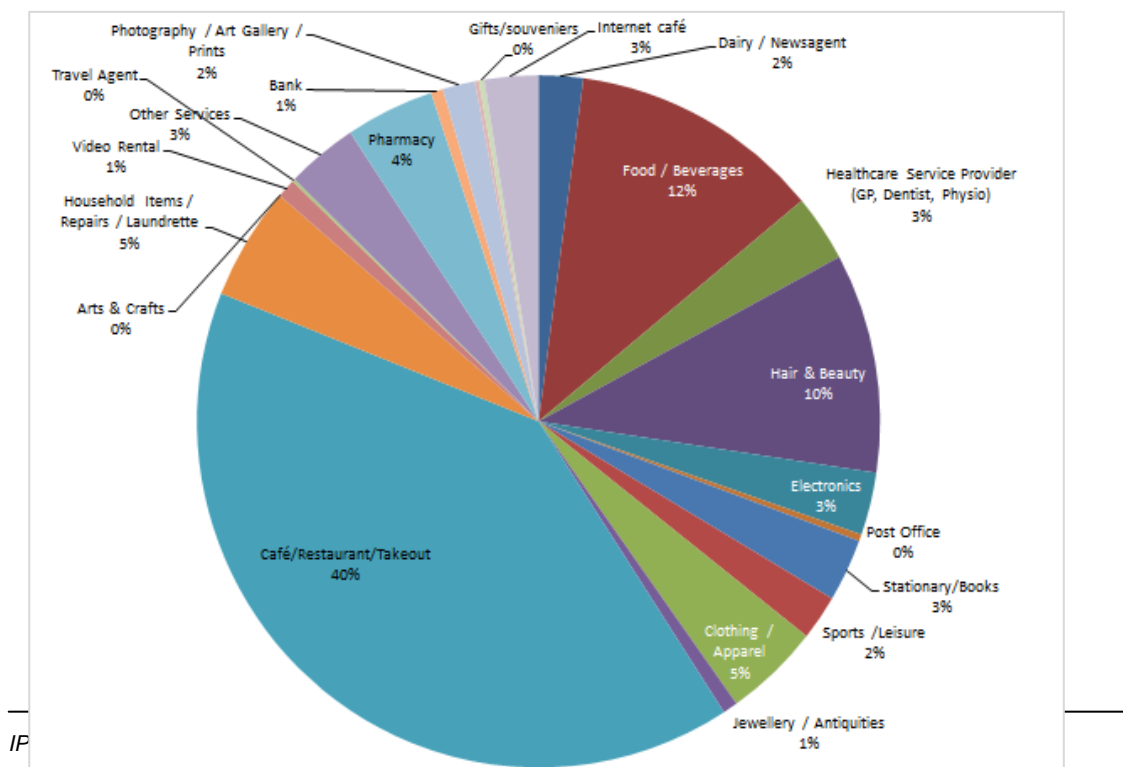
Table 1 shows the total number of shoppers and retailer surveys completed in arterial and central city shopping centres across the three cities.

**Table 1 - Sample Size for Surveys**

Site	Completed Shopping Surveys	Completed Retailer Surveys	Total Number of Shops
All Arterial Shopping Centres	1230	108 (28%)	392
All Central City Shopping Centres	514	36 (23%)	155
<b>All Shopping Centres</b>	<b>1744</b>	<b>144 (26%)</b>	<b>547</b>

Figure 4 indicates the types of shops that are present in the nine shopping centres and the proportion of surveys received from each shop type. A large proportion of surveys (at 40%) were from customers of cafes and restaurants.

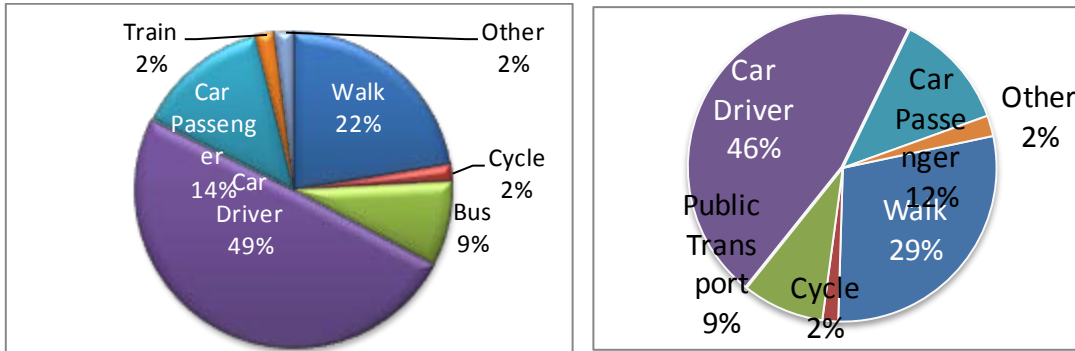
The remaining 60% of surveys were obtained from a large variety of different shop types, with the next highest proportions being food and beverage outlets (eg. supermarkets) (at 12%) and hair and beauty providers (at 10%).





**Figure 4 -Total Shopper Survey Response by Shop Category**

Figures 5 and 6 shows the main travel mode of the shoppers surveyed and the retailers' estimate of how their customers travel to their shops. Interestingly, retailers involved in the European studies under-estimated the importance of sustainable transport modes, whereas, the New Zealand retailers (at least those surveyed) have a good understanding of the mode of transport their customers use.

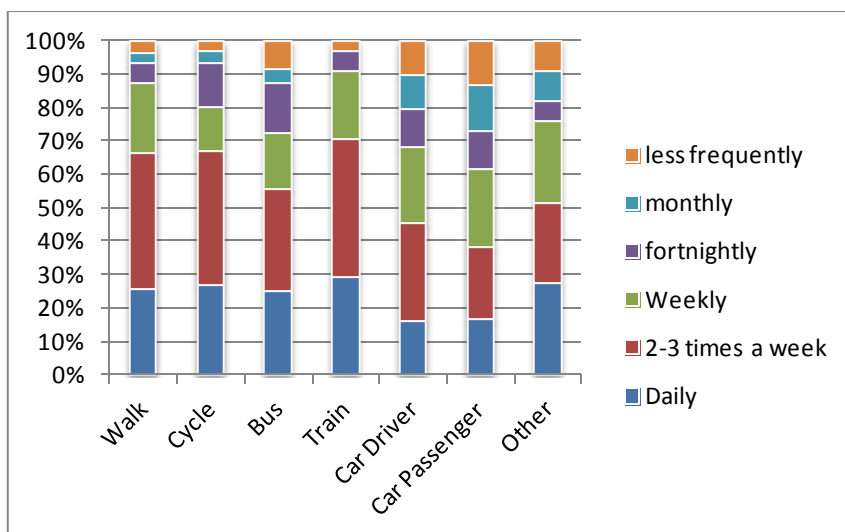


**Figure 5 – Shoppers transport mode      Figure 6 – Retailers estimate of transport mode**

The modes of travel used by shoppers differ between central city and arterial sites, with higher bus usage (up 10%), and lower car usage (down 12%) in the central city sites. There was very little difference between how the retailers estimate the mode proportion between the two different types of site. In central areas they overestimated the proportion by car (6% above) and under-estimated the proportion by bus (by almost a half of the proportion).

While the proportion of customers cycling to the shops overall was low, at 2%, in Christchurch this proportion was higher, at 4%, which reflects both a historical culture of cycling and the benefit of providing high quality cycle facilities.

Figure 7 and 8 show the frequency and duration of shopping trips by transport mode respectively.

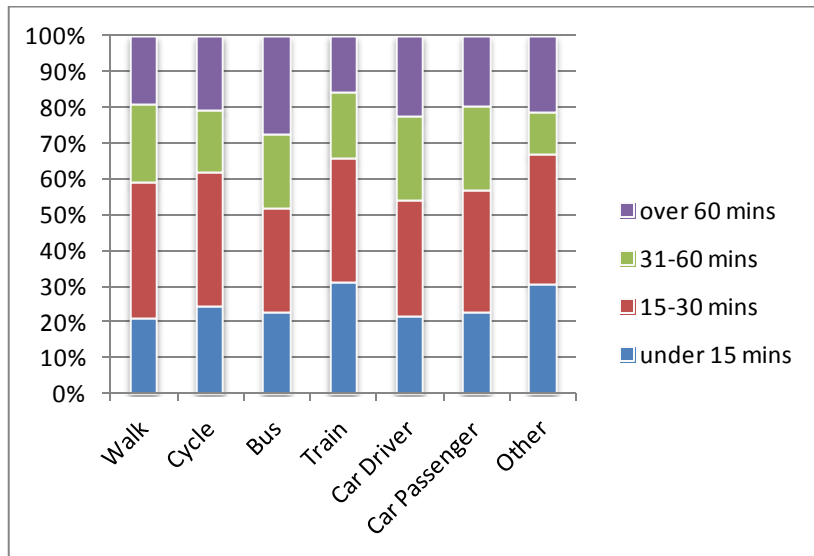




**Figure 7 - Frequency of Shopper Trips by Transport Mode**

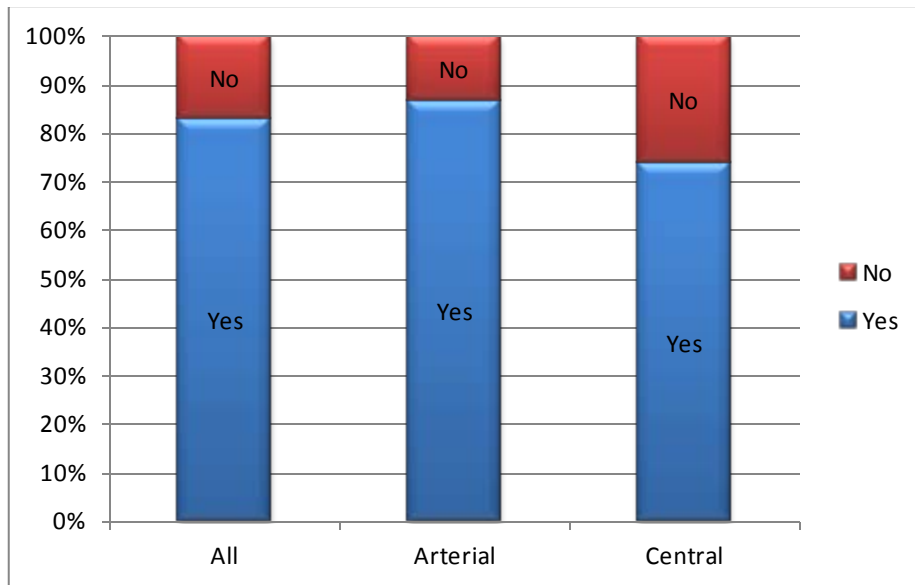
The frequency of sustainable mode trips is greater than car based trips, with on average 60% or more of sustainable mode trips being daily or two to three times a week, compared to less than 50% of car-based trips. In terms of site types, arterial routes have a slightly higher shopping frequency than central city sites.

As shown in Figure 8, there is not a great difference in shopping duration between sustainable transport users and car-based customers. Car and bus transport users tend to have the longer duration visits, with almost 50% having an average duration of over 30 minutes. This compares with around 40% of pedestrians and cyclists staying more than 30 minutes.



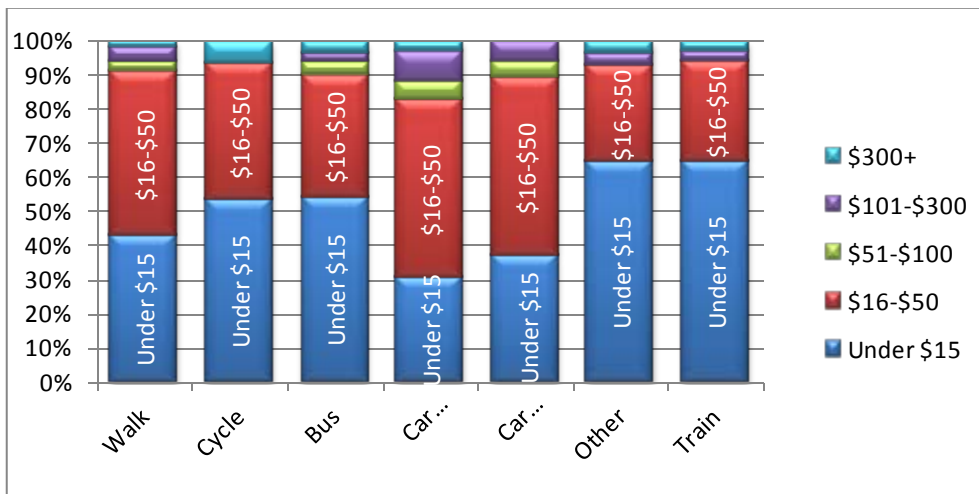
**Figure 8 - Duration of Shopper Trips by Transport Mode**

Figure 9 reveals the proportion of shoppers that did intend to visit the shopping centre on the day of their visit. This figure shows that between 15% and 28% of shoppers were passing trade, with the higher proportion in central city areas. This compares with retailers’ perception that around 30% of shoppers are passing trade. The finding for arterial road sites is particularly interesting, as a key reason put forward to retain parking outside shops on arterial roads is that its removal might impact on passing trade. It is argued that “passing trade” drivers may decide to go somewhere else, or not shop at all, if kerbside parking is not readily available outside shops.

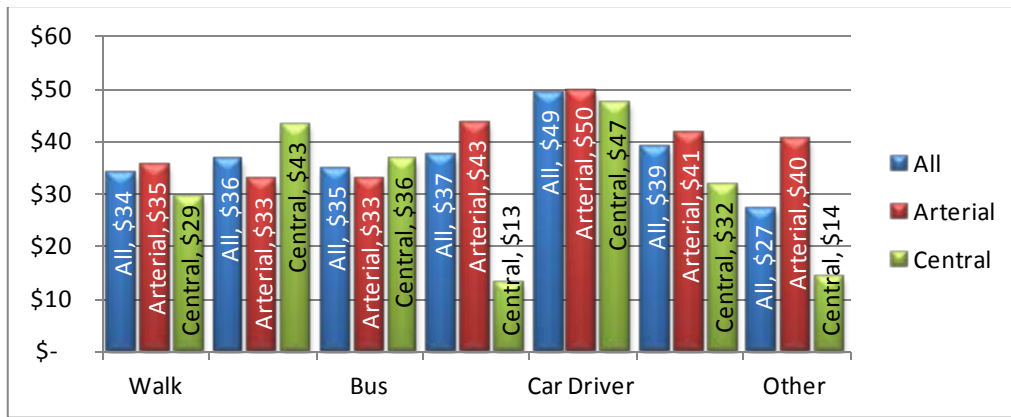


**Figure 9 - Did you intend to visit the shopping area today?**

Figure 10 and 11 show the amount spent per shopper, by spend category and by average spend per transport mode. It shows that sustainable transport users have a higher proportion of spend below \$15 (40 to 60%), compared with car drivers and passengers (30 to 40%). Car drivers also have the highest proportion of shoppers spending greater than \$50 per visit, at around 20%. This compares with 10% or less for sustainable transport users.



**Figure 10 - Shopper Trip Spend by Travel Mode**

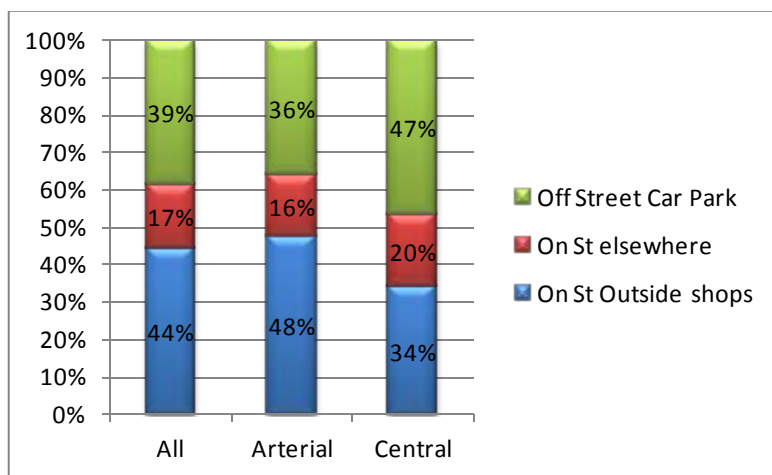


**Figure 11 - Trip spend by Travel Mode and site type**

Figure 11 shows that car drivers consistently have the highest average spend per trip. The combined average spends of car drivers and passengers is \$47 per shopping trip. On average shoppers using sustainable transport modes spend \$34 per trip. The average spend per cyclist is slightly higher (at \$36) than this overall average and approaches that of car drivers/passengers in central city areas (at \$43 per trip).

While they generally spend less per trip, the shoppers’ survey indicates that sustainable transport users do make up over a third of customers to shopping centres and visit these centres more frequently than customers using cars. They are hence an important contributor to the economic viability of most retail businesses. Hence their needs in terms of safe and efficient transport infrastructure should be given high importance, as the quality of this infrastructure will influence the number of sustainable transport users and the economic viability of shopping centres. There does appear to be a case for reallocation of more space to pedestrians, cyclists and public transport based on the fact that they are important to the economic success of shopping centres.

The issue of kerbside parking is a key one for retailers, given that many of their customers do arrive in a car. Often reallocation of road space schemes involve the removal of some or all of the kerbside shopping outside shops and this space is replaced by wider footpaths and/or cycle and bus lanes. Figure 12 shows the use of car parking in the surveyed shopping centres. It shows that almost half of shoppers in central city areas used off-street car parks, and even along arterials over a third used off-street parking. So this demonstrates that many shoppers who bring their cars do park off-road, even if many also choose to use the kerbside parking.



**Figure 12 – Shoppers’ Use of Available Car Parking**

Figure 13 shows the availability of car parking within the vicinity of the shopping centres. This information was gathered during the retailer surveys. A comparison between Figures 12 and 13 indicates that there is a high utilisation of off-road parking areas, given their level of availability, especially in central city areas. There is also an under-utilisation of on-street parking away from the immediate shopping area. In our experience there is often under-utilised parking on side-roads to the main shopping street, most of which is still relatively close to the shopping area. The surveys indicate that many car drivers seem to be happy using a variety of car parking is available.

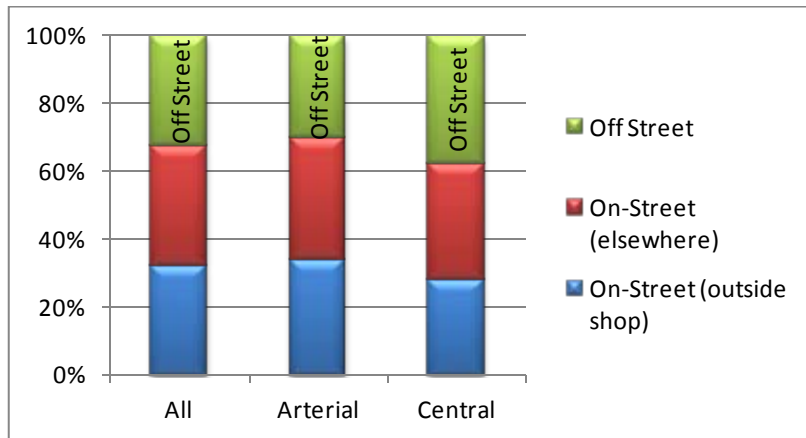


Figure 13 - Availability of Parking in the Vicinity of Shopping Centres

## SHOPPER & RETAILER WORKSHOP RESULTS

The key objective of the workshops was to better understand the importance of transport infrastructure (especially for non-car modes) and urban design in shopping centres. Transport infrastructure included cycle lanes and cycle parking. A secondary task was to present the shopper survey results to retailers to discuss any similarities and differences in the data sets.

Figure 14 shows the most important design elements of shopping centres for shoppers. The highest ranking elements are frequency of bus services, pedestrian crossings, landscaping and bus stop provision. The availability of on-street car parking ranked relatively low. While the provision of cycle facilities was also low this is to be expected given the low level of cycling in Wellington, where the workshops were undertaken.

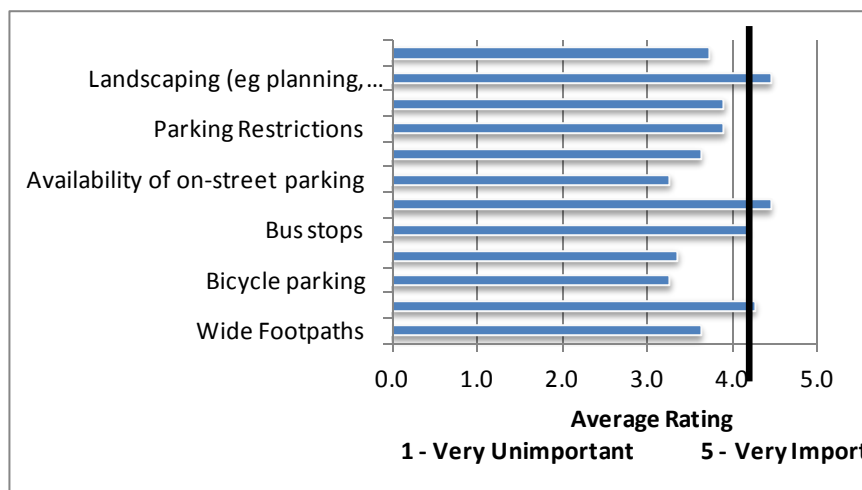
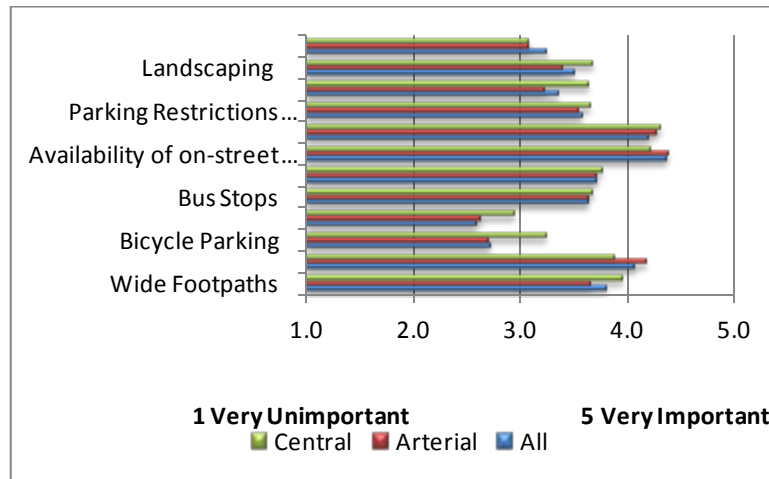


Figure 14 – Ranking of Design Elements by Shoppers

Figure 15 shows the relative ranking of shopping centre design elements in central city and arterial shopping areas by retailers during their retailer surveys. As is expected they ranked on and off-street parking as most important. They also ranked pedestrians crossings and wider footpaths fairly high. Wide footpaths were considered more important in central city areas, while pedestrian crossing were more important in arterial shopping centres. In general the retailers ranked cycle facilities lowest, although they were considered slightly more important in central city areas. This is likely to be due to the relatively low levels of cycling in shopping areas surveyed, compared with other transport modes.



**Figure 15 – Ranking of Design Elements by Shopping Centre type (Retailers)**

Interestingly the retailers and shoppers tend to agree on the importance of pedestrian facilities and also place quite high importance on the frequency of bus services and bus facilities, such as bus stops. They did not agree in terms of the importance of kerbside (and off-road) parking. Most shoppers viewed wider footpaths as being more important than on-street parking.

Shoppers were also asked what attracts them to use a particular shopping centre. The main responses from the shopper focus group was simply that they want to go to a specific shop, whether that is to buy lunch or to buy specific items e.g. the best coffee in New Zealand. These views align with the international research that indicates the type of shop is the most important consideration for shoppers. This is best exemplified by the following quote:

*I don't go to the shops because of the parking I go because there might be a quirky antique shop. You go to an outside shopping district because of a particular shop.*

Another key outcome from the workshops is customers want safer and more attractive shopping centres. They understand that on-street parking outside the shops takes up space that can be used for wider footpaths and more landscaping and street furniture.

## CONCLUSIONS

Governments around the world are now looking to address the negative impacts of the previous transport and planning policies that focused on “predict and provide”, or road capacity building, to solve traffic congestion. Policies and strategies now focus on developing transport networks that balance the needs of all transport users. The intention is to get more people using sustainable transport modes (walking cycling and public transport), leading to a reduction in congestion. In shopping centres this often requires reallocation of road spaces, so that wider footpaths, with more landscaping and street furniture and cycle and bus lanes can be provided. Local and overseas experience indicates that good quality urban design and increased provision for sustainable transport can improve the economic viability of shopping centres.

The overseas studies (from Bristol, UK, and Graz Austria) show that retailers often underestimate the proportion and hence value of sustainable transport users to their business. While the New Zealand retailers surveyed appear to better understand the modes of transport their customers use, the shopper surveys show that sustainable transport users make up at least a third of all customers and also visit shops more frequently, than car drivers. Even though sustainable transport users have a lower level of spend (at \$34 per visit) than car drivers (at \$47 per visit) they are nevertheless a significant customer base. As demonstrated in European cities, as New Zealand cities, like Auckland and Wellington, become denser they are likely to become an even greater proportion of customers and hence reallocation of road space to encourage such users to a local shopping area is going to be increasingly important in the future.

The surveys showed that the majority of shoppers, especially in arterial shopping centres, intended to visit the centre and hence that passing trade trips are relatively low; less than 30%. One argument put forward for on-road parking outside shops, especially in arterial shopping centres, is that “passing by trade” is less likely to stop if parking is not readily available outside the shops. But in such centres passing trade is less than 15%, so this is not a strong enough reason to retain such parking, rather than reallocating it to other transport modes. Even in arterial shopping areas many customers are using off-road parking, so being able to park outside the shop you want to visit is no longer expected by many customers.

The retailer surveys and workshop did show that business owners consider car parking to be a vital element of the transportation/urban design of local shopping centres. Pedestrian crossings, wide footpaths and frequent bus service were also considered important by business owners. Shoppers also placed a high importance on pedestrian crossings, wide footpaths and frequency bus services. They did not place a lot of importance on on-road parking, but did value urban design elements, particularly landscaping.

Overall, the study supports the economic evidence base that is building for reallocation of road space in shopping centres to non-car modes. Specifically, it provides valuable evidence that is relevant to local business owners and shoppers using local shopping centres around NZ. The toolkit developed as part of this study provides a framework for local councils and business to gather evidence on how local shopping centres are currently being used. Using this evidence based approach can help to assist in the successful delivery of future planning and implementation of roading and urban design schemes.

## REFERENCES

- Allatt T, Turner, S and Tarjomi, L, 2011, "Reallocation of Road Space", Unpublished NZ Transport Agency Research Report, Wellington, NZ (*to be published in late 2011 on [www.NZTA.govt.nz](http://www.NZTA.govt.nz)*).
- CABE, 2007, Paved with Gold: The Real Value of Good Street Design. <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/files/paved-with-gold.pdf>
- Department for Transport, 2007, Manual for Streets. [www2.dft.gov.uk/pgt/sustainable/manforstreets/](http://www2.dft.gov.uk/pgt/sustainable/manforstreets/)
- Duranton, G; Turner, M.A, 2009, The Fundamental Law of Road Congestion: Evidence from US Cities. Working Paper 370. University of Toronto Department of Economics. <http://repec.economics.utoronto.ca/files/tecipa-370.pdf>
- Edinburgh City Council, 2000, "Economic Development committee report – Edinburgh & Lothian Shopping Surveys Preliminary Results" [www.edinburgh.gov.uk/traffic/reports/committeereports/21\\_02\\_00\\_SHOPPING\\_SURVEYS\\_FROM\\_ECONOMIC\\_DEVELOPMENT\\_COMMITTEE/ShoppingSurveysReport.HTML](http://www.edinburgh.gov.uk/traffic/reports/committeereports/21_02_00_SHOPPING_SURVEYS_FROM_ECONOMIC_DEVELOPMENT_COMMITTEE/ShoppingSurveysReport.HTML)
- McIndoe, G; Chapman, R; McDonald, C; Howden-Chapman, P; Holden, G; Bray Sharpin, A. 2005, The Value of Urban Design. Ministry of Transport, NZ [www.8-80cities.org/Articles/TheValue-of-Urban-Design\\_NZ.pdf](http://www.8-80cities.org/Articles/TheValue-of-Urban-Design_NZ.pdf)
- Ministry of Environment, 2005, The New Zealand Urban Design Protocol. [www.mfe.govt.nz/issues/urban/design-protocol/](http://www.mfe.govt.nz/issues/urban/design-protocol/)
- Sustrans, 2006, Shoppers and How They Travel. [www.sustrans.org.uk/assets/files/liveable%20neighbourhoods/Shoppers%20info%20sheet%20-%20LN02.pdf](http://www.sustrans.org.uk/assets/files/liveable%20neighbourhoods/Shoppers%20info%20sheet%20-%20LN02.pdf)



