

# Traffic calming in the United Kingdom: the implications for the local economy

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## 1. Introduction

The car symbolises the growth in mobility during the late twentieth century, and a part of that philosophy has been the right to use that car wherever and whenever one wished. That right is now being questioned, with the ever increasing levels of congestion in urban areas, and the priorities for transport planning are now switching from increasing the capacity of the urban road transport system to ensuring that the rights of car owners are balanced with those of other people in cities.

Traffic calming is an evolving transport policy concept which is intended to reduce the environmental, safety and severance effects of the car and to improve the urban environment as a place in which to live.

Within residential areas, where most traffic calming has taken place, the aim is to reduce or eliminate through traffic, speeds of traffic would be reduced to be compatible with pedestrians, and there would be no difference in levels or surface materials between the road and the pavement. In addition, the streets would be designed for people and the priority for traffic engineers should not be to maximise the traffic flow but to manage traffic for the benefits of residents and the environment.

The concepts relate to the most appropriate form of city development with the needs of through traffic being balanced against those of the local residents. The benefits of less traffic and a quieter, less polluted environment, may be more than outweighed by increases in the levels of pollution and energy consumption elsewhere in the system. The net effect may be an increase in the use of resources and a less sustainable city (CEC, 1990; Banister, 1992).

Most schemes have been introduced in the Netherlands

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(Woonerven), in Denmark and in West Germany (Verkehrsberuhigung), but in the UK experience is limited to pedestrianisation and shared spaces with little traffic calming (Tolley, 1990). Nevertheless, the GB Department of Transport has recently given local authorities more guidance to supplement the main government publications on Roads and Traffic in Urban Areas and Design Guide 32 (with its supplement). At present (February 1992), a new Traffic Calming Bill is being debated in Parliament. It is a Private Member's Bill (introduced by the Conservative MP Keith Mans) and it has all-party support together with that of the Department of Transport. This means that it has a good chance of becoming law before the next General Election. The Traffic Calming Bill will give local authorities more flexibility in introducing traffic calming measures and strengthen their legal position. However, it will not improve the funding situation, and schemes will continue to be financed locally, perhaps with some private contribution, but no contribution from central government.

In this paper, a brief historical perspective is presented outlining the varied approaches to traffic calming and its justification. This provides the context for the discussion of the various forms of traffic calming and the local economy in terms of turnover, rents and prices. Evidence here is very limited, but a case study of the historic city of York is presented together with alternative methodologies appropriate for the investigation of the links between traffic calming and residential, retail and business developments.

## **2. History**

Traffic separation is not a new concept. Arcades were popular in the nineteenth century, as were the parks for people and the utopian ideals of Hausmann, and these concepts were continued into the current century by Le Corbusier. The German tradition was characterised by the concerns over street planning with Reinhard Baumeister suggesting technical standards for roads whilst Camillo Sitte was more interested in aesthetics and retaining old city centres (Hass-Klau, 1990). In Britain the concern was to improve health conditions through regulations on street widths and building heights, but in the USA, where legislation on planning was weakest, the arguments were between the city beautiful and the city practical movements.

These ideals changed with mass car ownership and the separation of city planning from traffic engineering. Again, there were parallels with the Garden City movements in the UK, the USA and West Germany, and the massive social housing programmes. Yet the separation of car traffic from other traffic was never wholly successful and the powerful car lobby gradually became dominant.

The New Town movements in the UK and in Germany were a further attempt to reconcile the desire to use the car with the broader question of 'liveable' towns. Success was mixed.

The Buchanan Report (Ministry of Transport, 1963) introduced the concept of environmental capacity which was interpreted by the Germans as instrumental in initiating the ideas of traffic calming, but its use in the UK was the opposite as it was used to promote the expansion of urban road building! The German equivalent of Traffic in Towns (Hollatz and Tamms, 1965) was less concerned about the environment but more concerned about the means to promote traffic flow through the construction of orbital and ring roads, and the necessity for heavy investment in public transport. Buchanan may have been ahead of his time, and it was only with the rise of the environmental movements and the Green Parties in the 1980's that its true impact was really felt (Hass-Klau, 1990). The concept of Precincts was first raised by Alker Tripp in the 1930's and his ideas were taken up by Colin Buchanan some thirty years later, and even then it was seen to be radical.

In the 1990's some of Buchanan's ideas are being taken up in the UK, again some thirty years after they were first proposed. It is also ironic that the Germans seem to have been more active than the British in building new roads around and between cities, in investing in public transport, and in calming traffic in city centres and residential areas. In Germany rigorous change was implemented on all three fronts simultaneously, whilst in the UK a more cautious approach was adopted.

Traffic calming was originally argued on safety grounds and much of the justification is still based on reductions in levels of accidents. Well established methods of economic evaluation are used to quantify the accident savings resulting from traffic calming improvement and these can be offset against the costs of the schemes discounted over thirty years. Using this cost benefit approach, many traffic calming schemes can be justified, particularly where there are large numbers of pedestrians sharing space with vehicles, as in crowded shopping areas. Resources for schemes were mainly available from road safety budgets, thus

emphasising the logic of this argument.

More recently, these safety concerns have been extended to include the environmental benefits of traffic calming, from reductions in traffic speeds which in turn reduces traffic noise and pollution levels. The evidence here is less convincing as little research has been able to positively link traffic speeds with noise and pollution levels in the urban environment. Most evidence relates to residents' perceptions of improvements in environmental quality when traffic levels and speeds are reduced.

It is these less tangible benefits which seem to be most valued by the local residents. The increased levels of street activity, the greater feeling of security, the visual appearance of the calmed area, and the integration of streets with the urban fabric all form the major input to any subjective evaluation (Pharoah and Russel, 1991). However, most schemes in the UK have been justified on accidents, speeds and costs, with reductions in the former two factors being balanced against the costs of implementation. Broader environmental, psychological and social factors, such as those mentioned above have not featured in the assessment. Decisions have been made primarily on traffic criteria, moderated by costs. Where the UK could learn from the European experience is to discuss the appropriate methodological approaches to widen the basis of analysis, so that factors such as the quality of life for residents, the impacts on property and rent values, the retail turnover of businesses, and broader environmental benefits could be included in a comprehensive overall evaluation.

### **3. Approaches to Traffic Calming**

The range of traffic calming alternatives are considerable and there is no one solution to any particular location. The focus of this paper is not to review past experience but to bring out the effects that traffic calming has on the local economy.

Excellent reviews of traffic calming in North Europe have been produced by Tolley (1990), by Pharoah and Russell (1989) and by Hass-Klau (1986).

Table 1: Traffic Calming Measures by Type of Street (1)

<p><i>Main Traffic Streets with Business and Public Functions</i>  <u>Problems:</u> High traffic density, too many lorries, speeds too high, serious crossing problems, unfavourable conditions for pedestrians and cyclists, no possibilities of enjoying the street as a social space, inappropriate parking.</p>
<p><u>Package of Measures:</u> Traffic lights with variable timings to control speed and flow, implementation of parking ban on footpaths, 'tree gates', marked crossing areas for pedestrians and bikes, construction of cycleways, use of planting and bollards to create safe spaces where people can linger.</p>
<p><i>Main Traffic Streets with Many Living Areas</i>  <u>Problems and Package of Measures:</u> Much the same as above except the addition of a protection zone between the traffic and the pedestrian.</p>
<p><i>Main Collecting/Distributor Streets with Public Functions</i></p>
<p><u>Problems:</u> Occasional high traffic density, inappropriately high traffic speeds, crossing problems, danger for cyclists, illegal parking.</p>
<p><u>Package of Measures:</u> Speed limitation, severing of through-routes, overtaking forbidden regulation of non moving traffic, construction of multi-purpose lanes for slow traffic, broadening of footpaths, 'humping' of crossing areas, taking of driving lanes for pedestrians and cyclists, creation of green areas on former road space, installation of street furniture.</p>
<p><i>Residential Areas</i></p>
<p><u>Problems:</u> Traffic density too high for area function, crossing problems, insufficient cycleways and pathways, rat-running, parking, pressure, not enough public space.</p>
<p><u>Package of Measures:</u> Speed restrictions, through-route severance, reduced turning opportunities from main streets, overtaking forbidden, lorry bans, parking controls, humps, broader paths, road narrowing, 'tree gates', creations of play areas, traffic zig-zags, creation of one-way streets.</p>

Traffic calming seems to have originated in residential areas, prior to being used in shopping areas and in villages or suburban through roads. Its use in business and commercial areas is still limited unless there are larger amounts of through traffic. The range of options is illustrated above in Table 1.

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(1) Source: Whitelegg (1990)

Table 2: The Devon Speed Management Framework (1)

SPEED/PRIORITY CLASSIFICATION OF ROADS
<b>LIVING AREAS</b>
Walking, cycling and other 'living' functions have priority over motor vehicles. Speed limits to be self-enforcing by the introduction of physical measures.
<b>Local - under 30 km/hr areas</b> * Pedestrian areas (vehicles mostly excluded) * Shared-surface streets with little traffic
<b>Collector - 30 km/hr areas</b> *Residential and other streets with no through traffic * 'Collector' streets connecting to the traffic areas, but not designated as through routes
<b>MIXED PRIORITY AREAS</b>
Areas where priority is shared between 'living' and 'traffic' functions including sections of through routes
<b>30 km/hr or 40 km/hr areas (preferably self enforcing)</b> *Shopping areas, areas near schools, colleges, and other major generators of pedestrian traffic. The use of an area by vulnerable road users, eg school children should weigh heavily in favour of a 30 km/hr speed limit (with necessary physical measures)
<b>TRAFFIC AREAS</b>
<b>40 km/hr areas (not necessarily self enforcin)</b> *Signposted major acces and through routes such as peak pressure routes where traffic functions takes priority, but where vulnerable road users are to be protected

Local authorities in the UK have been developing design guidelines for traffic calming schemes (eg in York and Kent).

The best known set has been produced for Devon (Devon County Council, 1991) where nineteen different measures have been suggested to moderate driver behaviour and to exploit the potential for safety and environmental improvement. The Guidelines also proposed a speed management framework so that a hierarchy of speeds can be imposed where self enforcin 30 km/hr speeds are the standard in built up areas,

(1) Source: Devon County Council (1991)

and it is only on designated through routes that a general limit of 40 km/hr would be permitted (Tables 2 and 3). The purpose here is to ensure that traffic calming is not seen in isolation, but as part of the transport strategy for the whole urban area.

Table 3: Street Classification and Selected Design Guidelines (1)

	Local	Collector	Mixed Priority	Traffic Priority
Target speed	<30 km/hr	30 km/hr	30-40 km/hr	40-60 km/hr
Self enforcing measures	yes	yes	yes	no
Through traffic	no	no	yes	yes
Max traffic flow (vph)	250	500	1500	n/a
Signs and road markings required	no	no	yes	yes
Cycleways required	no	no	yes	yes
Footway at road level	yes	yes	yes	no
Turning lanes/traffic lights appropriate	no	no	yes	yes
Pedestrian crossings appropriate	no	no	yes	yes
Special bus provision appropriate	no	yes	yes	yes

A recent survey of UK local authorities has found a rapidly increasing number of traffic calming schemes being implemented with a high degree of public acceptance (Environment and Transport Planning,

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(1) Source: Devon County Council (1991)

1991). The local authorities reported that in 80 percent of cases, residents were in favour. Car drivers accepted the measures in 66 percent of cases, and businesses in 68 percent. A 90 percent response from all UK local authorities revealed that 221 schemes had now been implemented, with a further 164 in the planning stage. Almost all the schemes were in urban areas. Closer investigation found that most schemes used road humps or speed tables<sup>2</sup> (63 percent) and some means to reduce street widths (49 percent), with landscaping and changed road surfaces being used in a quarter of schemes. Reductions in accidents were used to justify the investments, and most schemes were not part of an overall transport planning strategy for the urban area as a whole.

For transport planners there seem to be a series of related problems. First, traffic calming only rarely seems to be introduced as part of a coherent transport strategy. Each individual application is dealt with separately on its own merits. There seems to be an unprecedented demand from residents to 'calm' their local areas, but there is no established methodology to achieve a priority ranking for all possible applications. Local authority budgets are limited and there is a feeling among both politicians and professionals that any implementation strategy should be fair. Where attempts have been made to assign priorities to different schemes, the political implications have resulted in their rejection. For example, in the Royal Borough of Kensington and Chelsea (London), priorities were allocated on the basis of traffic volumes, traffic speeds, accidents, aesthetic values, costs and the size of the benefitting population. However, the results were not acceptable to the local politicians whose own local knowledge was at variance with the results of the method developed by the consultants (Frank Graham Consulting Engineers Ltd, 1991).

The second related problem is the impact of the traffic calming scheme on the urban area as a whole. Positive responses from those living in the traffic calmed area are more than outweighed by anger from those living in adjacent areas where traffic levels (and accidents) have increased. Traffic calming must be seen as an area wide traffic management strategy as traffic and accidents may just migrate to neighbouring locations. The debate on this problem is not clear-cut as some (eg Tolley, 1990) argue

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(2) Road humps are ridges across the road designed to slow traffic and speed tables are raised sections of road, again designed to slow traffic.

that traffic actually disappears and crucially does not appear elsewhere. The circumstances under which this interesting proposition might be supported needs further investigation - "building roads generates traffic, removing them degenerates traffic" (p 115). Tolley's vision (1990) would be to use transport planning to reduce trip lengths, to encourage a switch to soft modes (walking and cycling) and public transport, and to 'domesticate' the private car.

#### **4. The Local Economic Impacts**

The impacts of traffic calming are much wider than the narrow transport implications covered in the previous section. It would form part of a package to assist in the creation of high quality attractive locations where people want to live and work. Heiner Monheim (1986) summarised this thinking:

- (a) Infrastructure and service, as well as planning and decision making, become clearly decentralised: the town of short distances
- (b) The suburbanisation of the hinterland is reduced by land-saving building and development: high levels of accessibility to new developments
- (c) Housing close to the centre secured by traffic restraint and environmental improvements: return to mixed land uses in the city centre.

There has been considerable success, particularly in Northern Europe in the implementation of such area wide strategies, and these concepts have now been given a renewed emphasis with the CEC's Green Paper on the Urban Environment (1990) which argues for compact mixed development in cities for environmental, energy and quality of life reasons. In the UK, it is now agreed that it would not be possible or desirable to accommodate all the predicted growth in traffic. The forecasts for the next thirty years suggest that traffic will almost double, roughly in line with the expected growth in Gross Domestic Product. Radical alternatives such as traffic calming on a city wide scale are now being considered, with demand management moving to the centre of transport policy. If supply cannot be matched to demand, demand must be matched to supply.

This change in policy does not seem to be reflected at the national level where a huge new investment programme of widening existing roads together with the construction of bypasses has been initiated. It is argued that this £12 billion investment for the 1990's will take traffic away from towns, help to protect local communities and buildings, and make life more tolerable for residential areas and shopping streets (GB Department of Transport, 1989). It is at the local level where most action has taken place, particularly in Britain's historic cities (eg York, Oxford and Cambridge).

In York, one of the largest pedestrian zones in Europe has been created (Figure 1) to counterbalance the potential competition from out of town retail centres. The initial proposals aimed at introducing pedestrian hours between 10-17 hrs on Monday to Friday (19-17 hrs on Saturday), but the eventual hours were more restricted (1130-1600 hrs). The proposals generated over 600 objections and at the ensuing public inquiry 59 objectors appeared (Rigby<sup>2</sup>, 1991). The scheme was introduced in September 1987 to cover 39 streets and excluded all traffic except vehicles for people with disabilities and a special dial-a-ride bus service for the elderly.

Interviews were carried out on the 'footstreet' scheme a year later. All users felt that the traffic free area was an improvement. The proportion of traders opposing the scheme had fallen to 25 percent and the Chamber of Commerce came to accept the benefits of the scheme. Only taxi drivers remained opposed as their City Centre taxi rank had now been relocated on the periphery, and the programme is being enhanced by a complete repaving of the City Centre streets in stone (at a cost of £4 million) and the planting of trees. The design of schemes for pedestrianised streets has been selected by York's residents and not the planners. A public consultation stage involved a series of videos to give a pedestrian's eye view of the future options, with the selected option being that which included many features selected by public.

In the south part of the City Centre, traffic calming has been introduced with a narrowing of the carriageways to reduce speeds to 30 km/hr. This work was completed in June 1991 with a significant aesthetic improvement, together with a reduction in traffic volumes and speeds and the creation of better conditions for pedestrians to cross these formerly busy streets. The repaving was mainly financed by Marks and Spencer as part of their national programme for supporting town centre management schemes.

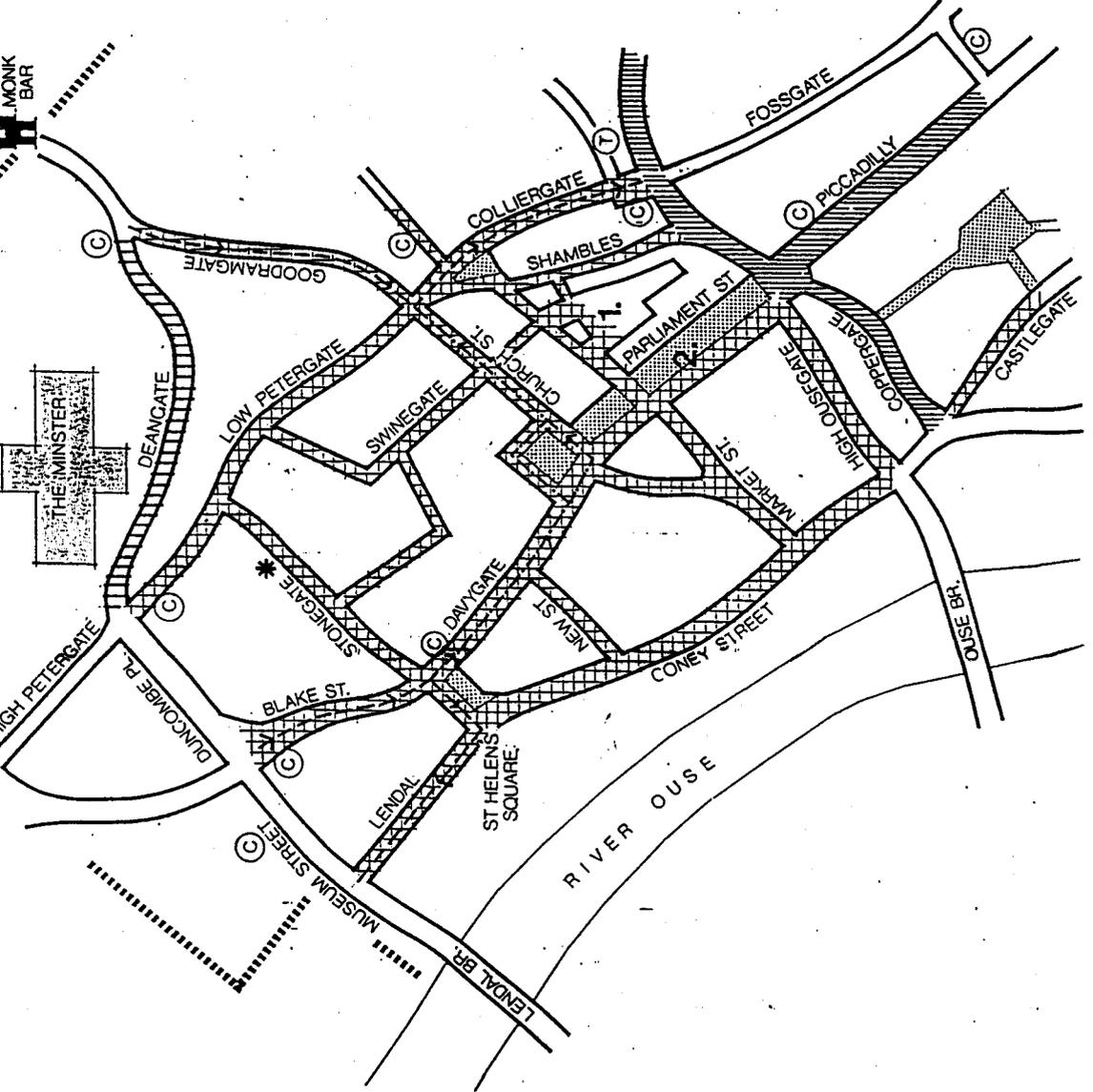
# PEDESTRIAN ZONE

STREETS CLOSED TO VEHICLES  
 MONDAY TO FRIDAY 11:00am - 4:00 pm  
 SATURDAY 10:30am - 4:30pm

## KEY

-  PART TIME FOOTSTREETS
-  PERMANENT PEDESTRIAN SPACE
-  24 HOUR CLOSURE EXCEPT CYCLES
-  ACCESS ONLY STREETS WITH TRAFFIC CALMING
-  \* STONEGATE CLOSED TO VEHICLES 10:30am to 5:00 am THE FOLLOWING DAY
-  (T) NEW TAXI RANKS
-  (C) CYCLE PARKING
- 1.** PRESENT SITE OF MARKET
- 2.** PARLIAMENT STREET
-  -|> ACCESS FOR DISABLED
-  -|> ACCESS FOR SEVERELY DISABLED (SPECIAL PERMIT)

Figure 1



The most controversial measure has been the closure of Deansgate running past York Minster and formerly carrying some 10,000 vehicles per day. The closure was promoted by the Country Council and has resulted in traffic being diverted into adjacent residential streets. An extensive consultation exercise was carried out with over 70 per cent of the 5,500 respondents supporting the closure. Radical measures to achieve environmental improvements are supported by residents, even though this may result in some inconvenience to motorists.

Permanent closure was implemented in September 1991.

As restraints are imposed on the City Centre, demands for action in the surrounding residential areas has also grown. There are 'ripple' effects as traffic is diverted into neighbouring areas and as people in these areas then exert pressures for calming measures for their own streets. Consequently, a combination of measures involving road closures, speed tables and road narrowings have been introduced in the residential areas to the south and west of the City Centre to exclude through traffic and to reduce vehicle speeds. The Groves scheme combines traffic calming with residential parking controls. Average vehicle speeds have been reduced from 43 km/hr to 25 km/hr, and a limit of 30 km/hr has just been introduced. In York there are some 30 requests for traffic calming schemes in residential areas.

The York approach is interesting in that initial opposition has been eliminated through extensive consultations and careful implementation. There is now a sufficient momentum and residents are demanding more widespread use of traffic calming measures.

The problem for the City Council is now to allocate priority to each scheme given the limitations on resources. The second point to note is the importance of the area wide approach as implementation in one area has impacts on the adjacent areas.

There are also limitations to the actions that planners can take as they also act as agents for the County Highway Authorities, and so they are under pressure to alleviate traffic congestion.

The downturn in local economies, particularly in the local property market, has resulted in less opportunity for planning gain from commercial development projects which has contributed significant resources for the improvements in the past. The continued prospect of limitations imposed by Central Government on local authority expenditure has also restricted other possible funding opportunities.

The benefits of traffic calming in *residential* areas are measurable in

terms of property price and rent changes. However, it would be difficult to attribute that change solely to one change as the property market is subject to many other factors.

Traffic calming increases private space through planting, the opening up of streets as spaces for people, and through greater perceptions of safety and security. It is used in promotion material by estate agents, but there is little evidence as to whether it is reflected in prices or rent levels.

Methodologically, it would not be difficult to collect data on property values of residential owner-occupied houses from estate agents or official records, and to compare them with similar properties in areas where traffic calming has not taken place.

In the UK, there are two national house price data banks assembled by the Halifax Building Society and the Nationwide Building Society. These data are available to researchers.

Alternatively, the impact of a change in the urban environment could be monitored over a period of time to determine change before and after implementation. Again, it would be necessary to have comparative data from a control area to ensure that other changes in the economy and house prices as a whole were included in the analysis. A third approach would involve hedonic price analysis on residential property value data to determine whether there was any implicit value placed by the housing market on local environmental quality.

Finally, if local residents were required to contribute to the costs of street works as in West Germany and Denmark (Pharoah and Russel, 1991), that would give some indication of the value of the improvement. However, it might also lead to these "calmed" areas becoming more exclusive and more costly as it would only be in the higher income areas where such changes could be afforded. The issue of financing the schemes is a crucial one as less resources are now available from public sources, and there are arguments that as the main beneficiaries are those people living in the traffic calmed areas, they should make some contribution to the costs.

With respect to *retailing*, there does now seem to be some evidence of benefits from location in traffic free areas. Caton (1990) found that rents in pedestrian streets were 45 per cent higher than in vehicular streets in 1987, and 80 per cent higher in 1989. The higher rents are justified in terms of increased trade as more people are attracted to the traffic free areas and as each individual may have a greater propensity to spend money.

These general percentages need to be interpreted carefully as the pedestrianisation streets may have had higher rents even before pedestrianisation. The increase from 1987-89 is the most important change, but even this figure might only reflect the fact that the prime streets were the ones pedestrianised.

In Germany, five out of six of the area-wide demonstration projects showed improvements in trade after the introduction of traffic calming measures (Table 4). Other research in Germany (Hass-Klau and Crampton, 1988) has focused on the impacts of pedestrianisation and traffic calming on retailing in three medium-sized towns (Freiburg, Göttingen, Hameln). Although the response rates from the surveys was less than 20 per cent, 777 questionnaires were analysed from traders in pedestrianised areas, main streets and residential streets, with only a limited response from those in traffic calmed areas. The main findings were:

1. The length of stay of shops does not seem to differ between pedestrianised streets and main streets. It is in residential streets where there is a greater turnover of shops and new facilities appearing, and this is where traffic calming has taken place.
2. From a list of ten factors influencing turnover parking spaces and pedestrianisation were ranked first and second overall respectively. The influence of rents on prices (and hence turnover) was ranked lowest, followed by traffic calming measures (Table 5).
3. One reason for the unimportance of rent increases was that there were many shops with no rent increases at all (36 per cent). This fact relates to the ownership patterns (30 per cent were owner-occupied) and the lease period (often long).
4. In traffic calmed areas, the responses were more negative than those in pedestrianised areas with a view that turnover had fallen or at best had remained neutral.

Rent levels do not seem to have changed. However, many respondents may not have differentiated between pedestrianisation and traffic calming, and some may have had no experience of traffic calming.

As with the impacts of traffic calming on residential property markets, it seems that carefully constructed empirical research should be carried out on the retail sector. Little good quality results are available. It seems that certain types of retailing are sensitive to the volume and proximity of traffic, and that pedestrianisation has helped in reviving

some shopping areas.

**Table 4: Changes in Business Turnover  
in Six German Traffic Calmed Areas (Before and After)<sup>1</sup>**

% of Business	Decreased	No Change	Increased
Berlin Moabit	31.3	40.4	28.3
Borgentreich	0.0	60.7	39.3
Buxtehude	6.0	33.7	60.3
Esslingen	20.5	31.1	32.5
Inglostadt	18.4	38.8	42.7
Mainz	28.6	30.6	34.7

A complementary methodology would be to measure indices of poor business performance, such as vacancy rates, the numbers of businesses collapsing financially, the movement of higher rent businesses into the area displacing existing businesses, and the type of businesses moving out of or into an area. However, the difficulty here would again be to attribute cause to the form of demand management, rather than other effects such as company rationalisation and economic conditions more generally. This type of more qualitative analysis would complement the harder survey information, and it is perhaps easier to collect than turnover and profit/loss figures. Surveys of businesses would also need to be matched by interviews with chambers of commerce, local entrepreneurs and public officials to gain both the industry's and the planner's views of the reasons for successful implementation of traffic calming schemes and the impact on business.

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(1) Source: Pharoah (1991)

(2) Much of this section on York is based on material supplied by John Rigby, Assistant Director (Development and Transportation), York City Council.

## 5. Conclusions

Traffic calming is seen by some as the only feasible solution to the problems created by the car (Hass-Klau, 1990; Tolley, 1990; Pharoah and Russel, 1989), as demand management attempts to slow traffic down, enhance safety and the quality of life in urban areas. It is not possible or desirable to continue to build roads to accommodate the expected growth in the demand for road traffic. Increases in capacity encourages more travel and longer trips. Reductions in capacity may encourage less travel and shorter trips.

Promotion of public transport will help to delay the moment when *gridlock* causes the system to seize up completely. Other solutions such as road pricing, toll roads, park and ride and advanced road traffic information systems may again help to delay the inevitable (Banister, 1990). Apart from the problems of physical capacity within the transport system, there are also strong arguments on safety, resource, social and environmental grounds for a radical rethinking of the priorities in urban transport planning. Public attitudes must change and individuals must gradually learn to reduce their dependence on the car, to travel less and to use public transport, bicycles and feet to access local facilities.

Table 5: Traders Ranking of Mean Values of Importance of Ten Factors Influencing Turnover, for Shops in Pedestrianised Areas, by Town (1)

Factor	Freiburg	Gottingen	Hameln	Overall
Restructuring Product Range	6	1	4	3
Marketing, Advertising	8	5	3	5
Redesign, Extension of Shop	7	2	6	4
Rent Increases	10	10	10	10
Purchasing Power	5	6	7	7
Pedestrianised Zones	2	4	2	2
Traffic Calming Measures	9	9	8	9
Parking Spaces	1	3	1	1
Public Transport	4	7	5	5
Local Environmental Quality	3	8	9	8

(1) Source: Based on Hass-Klau and Crampton (1988)

Note: There seem to be some inconsistencies in the rankings.

The low ranking of rent increases reflects high numbers of owner occupiers, long lease periods and no changes in rents over the monitoring period.

The low ranking of traffic calming may reflect a lack of knowledge on traffic calming and the lack of a perceived difference between pedestrianisation and traffic calming.

So the high ranking has been given to the familiar pedestrianisation and the unfamiliar traffic calming has been ignored.

Demand management, through pedestrianisation and traffic calming as well as full marginal cost pricing, has a key role to play in achieving this new focus transport policy. Policy is no longer driven by the imperative to provide additional road capacity to meet expected future levels of traffic demand.

Policy has to balance the needs of car drivers with those of other sectors of the population, and transport objectives of maximum accessibility have to be compatible with urban development objectives, and concern over the use of resources and environmental pollution.

However, there are also several important methodological problems which must be overcome. Cross section data may give some indication of the nature of the changes on residential and business property markets in the short term, but the time lag between implementation and effect is not clear. Similarly, longitudinal studies would help explore the dynamics of the links between traffic calming and the development process, but here the impacts of traffic calming would have to be separated from the other economic and social factors affecting the property market.

Some form of control area where traffic calming has not been introduced would be necessary. The scale of the change is likely to be small and the range of responses is likely to be great.

This means that for statistically significant results to be obtained, large sample sizes are required, and this may be impossible or expensive to collect. Perhaps more qualitative surveys are required with carefully constructed interviews with residents, businesses, Chambers of Commerce, local authorities, politicians and developers to ascertain their views on the nature and scale of the impact. These interviews could be carried out before and after implementation of a variety of traffic calming measures, and panel surveys would allow some form of longitudinal monitoring. After careful survey, empirical results may lead to some opportunities for statistical modelling and evaluation.

Methodological research on the impacts of various forms of traffic calming measures on domestic and business property markets is still in its infancy.

A hundred years ago a series of radical ideas were developed for the city as a place in which to live, work and play. Some of these ideas were implemented immediately, but others such as pedestrianisation, traffic calming, and streets for people have not yet been fully explored. Perhaps it is now time for further investigation of these options and others to ease

the impending thrombosis of transport in many of Europe's great cities. (1)

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## Riassunto

### *Misure di riduzione del traffico nel Regno Unito: implicazioni per l'economia locale*

Obiettivo della relazione è di illustrare gli effetti che le misure di riduzione del traffico hanno sull'economia locale.

Nella relazione dapprima viene presentato un breve profilo storico dei diversi approcci al problema. Successivamente vengono discusse diverse misure di riduzione del traffico rispetto all'economia locale in termini di "turnover", rendite e prezzi.

Originariamente le misure di riduzione del traffico sono sorte nel campo della sicurezza e la maggior parte delle giustificazioni sono ancora basate sulla riduzione dei livelli di incidenti. Più recentemente questi concetti sono stati estesi fino ad includere i benefici ambientali, la riduzione della velocità e di inquinamento atmosferico.

Ciò nonostante, la maggior parte degli schemi adottati nel Regno Unito non includono i fattori di benessere ambientale e di qualità della vita e le decisioni vengono prese principalmente sulla base di criteri legati principalmente alla viabilità e ai costi.

Nel Regno Unito le autorità locali hanno sviluppato delle linee guida progettuali (come a York e a Kent). Le più note sono quelle realizzate per la città di Devon; in questo caso, infatti, queste misure di riduzione del traffico non sono considerate in maniera isolata ma sono parte di una strategia dei trasporti che coinvolge l'intera area urbana.

Quest'ultimo punto, ossia il fatto che solo raramente le aree a traffico limitato sono inglobate entro una coerente strategia dei trasporti, rappresenta spesso un problema per i pianificatori dei trasporti. Un altro problema di non secondaria importanza è rappresentato dall'impatto che questi schemi hanno sull'area urbana intesa come un tutt'uno.

Gli effetti delle misure di riduzione del traffico sono molto più vasti delle semplici implicazioni nel campo dei trasporti. Dovrebbero far parte di un "pacchetto" predisposto per contribuire a creare opportunità localizzative di alta qualità dove la gente vuole vivere e lavorare.

L'approccio adottato a York è interessante da questo punto di vista in quanto l'iniziale opposizione è stata eliminata dopo estese consultazioni e caute implementazioni.

La continua prospettiva di limitazione imposta dal governo centrale sulla spesa locale inoltre ha ristretto diverse possibili opportunità di

investimento, prime tra tutte quelle relative allo sviluppo commerciale che ha avuto molta importanza in passato.

I benefici delle misure di riduzione del traffico nelle aree residenziali sono misurabili in termini di prezzo della proprietà e in variazioni di reddito. Tuttavia i miglioramenti in termini di qualità ambientale e di benessere sono più difficilmente rilevabili in termini di prezzo.

Metodologicamente è possibile raccogliere dati sui valori delle case occupate da proprietari residenti dalle agenzie immobiliari o da rapporti ufficiali e confrontarli con analoghe proprietà in aree dove non sono applicate le misure di riduzione del traffico.

In alternativa, potrebbe essere necessario monitorare per un certo periodo di tempo gli impatti di una trasformazione dell'ambiente urbano in modo da rilevare l'effetto intercorso durante il periodo di implementazione.

Un terzo approccio potrebbe richiedere l'analisi degli hedonic prices sui dati relativi al valore della proprietà immobiliare in campo residenziale.

Anche nel campo del commercio è stata sottolineata la presenza di benefici derivanti dalla localizzazione degli immobili in aree pedonali. I maggiori redditi, in termini di incremento del volume di affari, sono giustificati in quanto più gente è attirata in quelle aree e ha una maggior propensione a spendere.

Dal punto di vista metodologico esistono diversi problemi da superare. Dati incrociati possono fornire alcune indicazioni sulla natura dei cambiamenti nel mercato della proprietà immobiliare della residenza e del commercio, ma l'intervallo di tempo tra l'implementazione e l'effetto non è chiaro.

Allo stesso modo, studi paralleli potrebbero aiutare ad esplorare le dinamiche delle connessioni tra riduzione della circolazione e processi di sviluppo, ma questi impatti dovrebbero essere separati dagli altri fattori economici e sociali che influenzano il mercato immobiliare.

In conclusione, sul piano metodologico le ricerche sugli impatti che le diverse forme di riduzione della circolazione hanno sui mercati immobiliari, della residenza e del terziario, è ancora ai suoi primordi.

## Résumé

### *Mesures de réduction du trafic au Royaume-Uni implications pour l'économie locale*

L'objectif de la relation est d'illustrer les effets que les mesures de réduction du trafic ont sur l'économie locale.

Cette relation présente tout d'abord un bref profil historique des différentes approches au problème. Ensuite sont discutées plusieurs mesures de réduction du trafic par rapport à l'économie locale en terme de "turnover", rentes et prix.

À l'origine, les mesures de réduction du trafic ont surgi dans le domaine de la sécurité et la plupart des justifications sont encore basées sur la réduction des accidents. Plus récemment ces concepts ont été élargis jusqu'à inclure les bénéfices touchant l'environnement, la réduction de la vitesse de circulation qui, à son tour, réduit les niveaux de nuisance sonore et de pollution atmosphérique.

Malgré tout cela, la plupart des schémas adoptés au Royaume-Uni n'incluent pas les facteurs de bien-être et de qualité de la vie et les décisions sont prises surtout sur la base de critères principalement liés à la viabilité et aux coûts.

Au Royaume-Uni, les autorités locales ont développé des "lignes-guide" conceptuelles (comme à York et à Kent). Les plus connues sont celles qui ont été réalisées pour la ville de Devon; dans ce cas, en effet, ces mesures de réduction du trafic ne sont pas considérées de manière isolée, mais font partie d'une stratégie des transports qui touche toute l'aire urbaine.

Ce dernier point, à savoir qu'il est rare que les aires à trafic limité soient englobées dans une stratégie cohérente des transports, représente souvent un problème pour les planificateurs des transports. Un autre problème qui est loin d'être secondaire est représenté par l'impact que ces schémas ont sur l'aire urbaine appréhendée comme un tout.

Les effets des mesures de réduction du trafic sont beaucoup plus vastes que de simples implications dans le domaine des transports. Ils devraient faire partie d'un "paquet" prédisposé pour contribuer à la création d'opportunités localisatives de haute qualité où les gens veulent vivre et travailler. L'approche adoptée à York est intéressante de ce point de vue, car l'opposition initiale a été éliminée après d'importantes consultations.

La perspective continue de limitation imposée par le gouvernement central à propos des charges locales a également restreint à propos des charges locales a également restreint plusieurs opportunités possibles d'investissement, surtout celles concernant le développement commercial qui a eu beaucoup d'importance dans le passé.

Les bénéfices des mesures de réduction du trafic dans les zones résidentielles sont mesurables en terme de prix de la propriété et en variations de revenu. Toutefois, les améliorations en terme de qualité d'environnement et de bien-être sont plus difficilement relevables en terme de prix.

Méthodologiquement il est possible de récolter des données sur les valeurs des maisons occupées par des propriétaires résidents grâce aux agences immobilières ou aux rapports officiels et, ensuite, les comparer avec des propriétés analogues se trouvant dans des zones où ne sont pas appliquées les mesures de réduction du trafic.

En alternative, il pourrait être nécessaire surveiller pendant une certaine période de temps les impacts d'une transformation du milieu urbain de manière à relever l'effet pendant la période d'enrichissement.

Une troisième approche pourrait requérir l'analyse des "hedonic prices" sur des données relatives à la valeur de la propriété immobilière dans le domaine résidentiel.

De même dans le domaine du commerce, il a été souligné la présence de bénéfices dérivant de la localisation des immeubles dans les aires piétones. Les plus grands revenus, en terme d'accroissement du volume d'affaire, sont justifiés; car les gens sont attirés dans ces aires-là, dépensent beaucoup plus.

Du point de vue méthodologique, il existe plusieurs problèmes à surmonter. Les données entrecroisées peuvent fournir quelques indications sur la nature des changements dans le marché de la propriété immobilière de la résidence et du commerce, mais l'intervalle de temps entre le développement-enrichissement et l'effet n'est pas clair.

De la même manière, des études parallèles pourraient aider à explorer les dynamiques des connexions entre réduction de la circulation et processus de développement, mais ces impacts devraient être séparés des autres facteurs économiques et sociaux qui influencent le marché immobilier.

En conclusion, sur le plan méthodologique, les recherches sur les impacts que les différentes formes de réduction de la circulation ont sur les marchés immobiliers, de la résidence et du tertiaire, est encore "à ses premiers pas".