WHITE PAPER

Parking should be the cornerstone of an integrated transport and emissions policy

argues Peter Johnston

The 2004 Traffic Management Act has focused the minds of Local Authorities on traffic management, with all authorities required by law to appoint a Traffic Manager. Alongside this is a requirement for Authorities to dramatically reduce carbon emissions borough-wide.

Parking is a key cause of traffic and emissions in urban areas and correct management of off-street parking facilities is a key part of any effective traffic management policy. By integrating policies on parking and traffic management, saving in emissions of 20-50% can be envisaged.

ZEAG

Integrating parking, traffic management and emissions in urban areas

There have been a series of initiatives to help local authorities reduce their area's carbon emissions. Transport plays a major role in this as recognised in the Carbon Trust Local Authority Carbon Management Programme. The Low Carbon Cities initiative supporting Manchester, Bristol and Leeds in creating city-wide carbon reduction programmes is likely to become a template for urban areas throughout the UK. Handled well it can keep town and city centres as the vibrant hubs of our lives while significantly reducing emissions, noise and traffic, handled badly it can make town centres desolate no-go areas and move business, retail and residential requirements to other areas.

Efficient parking has a key role to play in this. It is estimated that up to 20% of emissions in urban areas are parking related. This includes people cruising the streets or inside off-street parking facilities looking for a space, queuing to enter or leave car parks and entering towns purely for parking. Thus a major reduction in transport related carbon emissions can be achieved by looking more closely at integrating parking with traffic management. Even more can be achieved with some clever new initiatives in variable pricing and emissions charging.

Introduction

The poor takeup of Park and Ride schemes shows that cars are seen as a vital part of urban life and schemes such as the London congestion charge cost businesses within the zone considerable revenues. While every local authority would like everyone to travel by public transport, it is an unrealistic aim and the popularity of out-of-town supermarkets and multi-retail centres threatens city and town centres.

While there is a strong focus on emissions in urban areas, towns are actually a more efficient use of the motor car than alternatives. Towns have a concentration of a wide variety of different shopping and eating experiences all accessible with one journey. The alternative of going to a variety of out-of-town shopping centres uses a lot more fuel and produces a lot more emissions. Arguments on green belt must also be taken into account.

Town centre parking is haphazard with a vast network of Pay and Display machines and a few off-street car parks, often dating from the sixties and hard for modern vehicles to negotiate.

Car Park Design

The aim must be to minimise the distance cars travel within the car park, the time they are idling or queuing and to integrate the car park with wider traffic management.

1. Modern pay on foot technology is essential. Pay on entry or exit makes the process too slow, restricts the payment options and risks queues building as drivers search for change or their ticket.
2. The speed and reliability of the entry and exit stations is vital and how intuitive the machine is can also be important. There is a huge gulf between best and worst in speed with Zeag making machines capable of 500 transactions per hour while some others manage barely half that. Illegible displays, small unlit press for ticket buttons and no help intercom on the station can also slow movement or cause potential delays.
3. The design of the lanes is also vital. Too tight a turn and cars end up too far from the station, meaning that arms won't reach and the person has to undo their belt or get out of the car wasting time with the engine running. Zeag has trialled a leanback style of machine which makes drivers believe they are further from the machine as they are and this has reduced the incidence of problems of this sort.
4. Bay management monitors empty spaces and this can be shown on signage both within the park and on external roads, ensuring customers do not make wasted trips to full car parks and can evaluate options on offer, travelling to another car park rather than queuing to wait for a space in another. Within a car park it means that they immediately find a floor with spaces without circling. Linking this bay management with barriers for each level means that car parks can be restricted to fill level by level, again reducing circling. This can also mean that lighting can be reduced in unused areas of car parks, with a consequent carbon and cost saving.

Analyse Patterns to influence behaviour

Number Plate recognition technology can be invaluable in analysing traffic patterns. At its most basic it tells you whether each user is a first time or regular user and how long each vehicle spends in the car park. Linked to the DVLA database and databases such as ACORN (A classification of residential neighbourhoods) it can also tell you where the driver is likely to have come from and what type of vehicle it is – essential in looking at catchment areas and demographics and thus in designing campaigns to encourage or discourage particular types of user. If, for example, it is found that users are travelling considerable distances, campaigns to persuade them to use Park and Ride could be important, while encouraging usage of town centre car parks by more local residents who would otherwise travel out of town to the Park and Ride. Special schemes could also be set up with local retailers to encourage staff parking in particular designated parks, rather than clogging up important bays for shoppers, or with rail operators to encourage commuting by train.

From this information councils can, often in conjunction with the incredible volume of data built up by our better retail groups, analyse the catchment area down to individual street level and identify areas where use of particular car parks can be encouraged, build loyalty for particular sites and thus minimise cross-city travelling. Profitable routes for new buses can be identified and route analysis can also identify ways to circumvent traffic blackspots or set traffic lights etc. to handle particular parking exit surges, minimise journey length and prove invaluable in designing traffic management systems and planning future road network improvements.

New technologies can also have a direct effect. The first of these is variable charging, currently on trial by Zeag in conjunction with Westminster City Council and APCOA.

Variable Charging

Imagine setting your own congestion charge to encourage people into the town centre when it is quiet and push them to public transport and Park and Ride when it is busy. This is possible with variable car park charging. This can be set to raise prices as a particular car park fills up, to set differential pricing to encourage drivers to use less busy car parks or drive demand for particular sites or charge different prices for market day or weekends. The system uses a variable messaging board at the entrance of the car park to display pricing and the rate per hour is also printed on the ticket. Rates can also be set to discourage long term parking, overnight parking or to drive demand for particular areas or levels, thus managing utilisation. Individual retailers or shopping centres can also make use of the system for promotions which can even out traffic flows (such as Thursday evening opening where reduced price parking could be offered) and thus minimise congestion. Variable charging is sufficiently flexible to cut town centre traffic flows to allow for the peaks caused by particular occasions such as sporting events or concerts. Areas with tourism can charge differing rates for time of year. The system can even be set to work totally automatically, raising rates on particular carparks when they reach a certain capacity point and simultaneously reducing it on nearby sites to divert traffic and manage capacity so car parks fill in order.

Emissions Charging

With automatic number plate recognition (ANPR, also called LPR or Licence Plate recognition) vehicles can be segmented into bands by model. This could positively discriminate in favour of low emissions models and allow those preferential rates in town centre parks but more even pricing out of town. It could also be used to favour smaller vehicles in older car parks where access is more difficult or even to keep diesels away from

areas where particulate levels are a problem. The system can even be linked to air pollution monitoring and variable pricing to raise car park pricing when air quality is poor, and positively discriminating in favour of Park and Ride or out of town schemes. The technology is available to add in actual emissions measurement, though this is at an early stage of development and identify vehicles which require attention. Although not relevant here, similar monitoring is also possible to measure tyre tread depth and print warnings on tickets to help with vehicle safety. Again emissions charging is currently under development by Zeag.

Postcode Charging

Clever parking can also deliver a benefit in minimising journey distances. Payment by postcode can encourage out of area users into Park and Ride and similar while rewarding local drivers (whose support is required to minimise the negative impact of any charging system). This can also work in conjunction with a residents card giving a discount to borough residents but charging tourists or people from neighbouring boroughs more. These discounts can involve local retailers and drive business to them in a focused manner without additional cost to the borough resident. Incentives such as free parking for residents during December to encourage people to do their Christmas Shopping locally are just one example of how this can reduce the overall carbon footprint of the area.

Building Loyalty

According to a recent survey by the Audit Commission over a quarter of councils raise more revenue by charging for services such as car parking than from council tax – 114 out of 386. The overall amount raised is £10.8billion in England alone as against council tax revenues of £22.4bn – almost half. The potential is there to keep council tax rises to a minimum or even to provide more services for the same money by maximising revenue from parking charges and the Audit Commission urged councils to use charging to encourage people to be healthy or green and improve everyone's quality of life.

In the same survey, however, 43% believed that parking charges were not value for money. Dirty, dingy car parks, hard to use machines and problems with change, access and breakdowns drive customers to supermarkets and other shopping experiences and council car parks are often below average in this respect. Modern machinery which handles credit cards and notes, gives accurate change and has an inbuilt helpline in case of problems can both dramatically improve the customer experience and reduce the burden on hard-pressed parking management staff. Loyalty cards which offer, for example, two for one on a coffee when they visit the centre (usually funded by the coffee shop), which offer free parking when you spend say £50 in particular retailers and which allow access to special promotions and events build loyalty to a town's parking and makes them feel their council has their interests at heart. These cards can also be used to create variable price parking whether resident v tourist or by vehicle registered. Some trailblazing councils are also making pre-payment for both on and off-street parking available through their website and this not only builds loyalty but has a massive cashflow benefit, as well as reducing both the cash at risk in parking machinery and the costs of collecting and counting this. Payment by phone is also gaining traction.

Summary

Correct management of parking is a key contributor to effective traffic management and to area-wide reductions in vehicle emissions. Handled badly it can drive customers to out of town centres and kill local community and retail. Handled cleverly, however, it can massively lower emissions, reduce traffic volumes significantly and improve relations between councils and residents while significantly increasing the contribution of parking to the funding of the council's activities.

Zeag is the world's leading specialist in Parking Control and Revenue Systems, with over 4,500 installations on 5 continents and 40+ years experience in producing robust, flexible and easily maintained parking solutions. Zeag leads the way in parking innovation across the Government, Retail, Hotel, Leisure, Health, Education, Transport and Sport sectors, supplying barriers, access control, CCTV and revenue control solutions.

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