MANAGING PARKING DEMAND
BUILDING A BEST-PRACTICE WORKPLACE PARKING POLICY

North Bristol SusCom

The challenge

Increasing car use and congestion are requiring workplaces to introduce more demand management measures into the way they manage their parking.

Congestion has increased by 14% since 2008
UK average, 2015

A Bristol commuter loses 3 hours per week sitting in traffic
Average, 2015

DELAYS AHEAD

230% increase in traffic delay forecast for Bristol by 2036
in a 'Do Minimum' scenario

This guide attempts to answer some common employer questions around demand reduction parking policies:

what should a policy aim to do; **what types of policy are there**; **who should get priority to park**; **how to enforce and contol access**; **how to communicate changes and maximise staff acceptance**.

Managing parking demand

Most workplaces currently have a struggle on their hands: more cars arriving each day than either they have parking spaces for or the surrounding road system can manage. Many workplaces contend with compromised access, traffic jams, illegal or double parking on top of walking and cycling safety issues on a daily basis.

Incorporating demand management measures into your workplace parking policy is an opportunity to manage and mitigate these problems by reducing the overall number of vehicles travelling to your site each day.

Common demand management measures include: prioritising or restricting who can park based on how able they are to use alternative modes; car share priority measures; incentives to use other modes and promotions such as car-share days.

There is strong, unanimous academic evidence that parking demand management measures strongly influence the decision making process for commuters. It is deemed to be the single best tool available to workplaces to combat unmanageable levels of single occupancy car commuting. It is also relatively low cost and quick to implement.

Demand management parking policies work both to discourage staff driving to work alone and to incentivise all other mode choices. As such they should form the backbone of all wider travel plan measures.

WHAT SHOULD A PARKING POLICY AIM TO DO?

A well-designed workplace parking policy can meet your business' operational parking needs efficiently, reduce negative impacts such as congestion and encourage active travel. All at the same time.

A best practice parking policy would be designed to meet all of the following eight strategic aims. The first four aims are focused on operations, whilst the latter four focus on demand management. All eight aims are mutually reinforcing - they can be met by a common set of policy measures. The more you achieve one the more you achieve the rest.

1 Maximise Access
- Ensure access and egress to the site is as free flowing as possible.
- Minimise vehicle numbers and congestion surrounding the site.

2 Ensure Safety
- Make the site safe for all users and modes.
- Minimise the risk and occurence of collisions and near misses.

3 Encourage Efficiency
- Meet operational needs using minimum possible resources and cost.
- Reduce unproductive use of space where possible.

4 Protect Environment
- Minimise environmental impact, air and noise pollution.
- Support sustainability and healthy built environments for staff.

5 Promote Flexibility
- Support and encourage staff to use a variety of travel modes.
- Ensure permit schemes do not lock staff into only one way of travelling.

6 Embed Equality
- Provide equal travel benefits for staff regardless of the travel mode they use.
- Ensure all site users can access the site with maximum ease and safety.

7 Incentivise Alternatives
- Invest in significant support for alternatives to solo car use.
- Provide incentives for alternatives equal in value to annual parking space.

8 Aspire to Reduce
- Reduce the total number of parking spaces utilised on site over time.
- Increase resilience by reducing car dependency of business operations.

Every car really does count...

Reducing the number of vehicles travelling to your site - even by just a few per day - really can make a difference.

Traffic congestion is 'a non-linear function', meaning that a relatively small change in traffic volume provides a dis-proportionally large reduction in traffic delay, especially in congested, peak conditions.

For example, a 5% reduction in traffic volume can cause up to a 30% increase in average vehicle speeds and reduction in traffic delay.

That means if we reduced the number of cars in a busy stretch of road at peak time from 2,000 to 1,900 per hour, we could increase traffic speeds from 35mph to 45mph[1].

So each and every car journey prevented during peak hours really does count.

COMMON PARKING POLICY MODELS

STRATEGY	TYPICAL POLICY MEASURES	PROS	CONS
Increase supply to meet demand	Build or rent more parking spaces as demand increases. All staff permitted to park.	No off-site or inappropriate parking. Low direct admin and enforcement burden. Little contention from drivers.	Increase in car use and congestion. Compromised access for all site users. High cost & inefficient site utilisation. Equality issue for non-drivers.
Minimum intervention	Maintain current parking supply regardless of increasing demand. No priority or demand management. All staff permitted to park.	Low direct admin and enforcement burden* Little contention from drivers. * however there will likely be unintended admin pressures resulting from inappropriate parking.	Increase in inappropriate parking when demand outstrips supply. High car use and congestion. Compromised access for all site users. Equality issue for non-drivers.
Needs based priority	All staff permitted to park but most 'desirable users' (i.e car sharers, vital business need, drivers travelling furthest) given priority access. 'Rainbow' zone systems; time restrictions before access open to all users.	Some incentive for car use reduction in line with parking supply. Some incentive for priority site users.	Increase in off-site and illegal parking. No real reduction in car use and congestion. Medium enforcement burden. Can generate contention with drivers. Can be complex to administer.
Universal charging	All staff permitted to park. Universal charge for permits or daily passes. Charge % salary charge or sliding scale.	Charge may reduce demand from some users. Suitable for open, public sites with visitors. Offsets cost of maintaining car parks; can create revenue stream for alternatives.	Irrelevant disincentive for higher incomes. Annual charges lock in driving behaviour. Does not target groups more able to travel using alternatives.
Needs based restrictions	Parking permits granted only to staff meeting specified criteria. Points-based or exclusion zone priority systems. Support offered for those without parking rights to use viable alternative.	Can lead to significant reduction of demand and congestion. Parking secured for those who most need it and those without viable alternatives. Improved access for all site users and modes.	Can be seen as punitive when deployed without significant support for alternatives. Increased admin & enforcement burden. Will create some off-site and illegal parking. Negative reception from affected drivers.
Needs based restrictions + incentives	As above, but with provision of significant incentives for alternatives, preferably equal in value to provision of a parking space. Incentives can be financial ('cash-out') or enhancements to existing benefits.	Positive approach with equal provision for alternatives and non drivers. Significant reduction of demand & congestion. Improved access for all site users. Parking cost savings offset delivery costs.	Higher admin burden. Will create some off-site and illegal parking. Negative receptions from affected drivers.
Blanket restrictions	Non-needs based restrictions on parking E.g priority assigned by seniority, ban on all solo driving, or ban on all-onsite parking (bar disabled access).	Highest potential reduction of demand & contribution to local congestion. Cost savings and new site usage opportunities if number of parking spaces reduced.	Punitive to site users without viable alternatives to car travel. Can negatively impact operations. Signficant off-site and illegal parking. Unfeasible without good alternatives.

▲ WEAKER

DEMAND MANAGEMENT

STRONGER ▼

DESIGNING A POLICY

How do you prioritise who should get a parking space?

- Priority should ideally be determined by assessing how able staff are to utilise alternatives.
- Priority based on accessibility requires more upfront management time but should ultimately result in a more feasible parking system with less complaints and a positive impact on operations.
- Priority systems based only on 'business need' or seniority are not recommended as do not consider mobility options.

Disincentives and incentives

- Providing both disincentives not to drive alone and incentives to use alternatives can reduce demand effectively and fairly.
- Disincentives include charging parking fees or restricitng who is allowed to park.
- Charging provides income to cover costs and invest in alternatives but uses income as the basis for demand management rather than who is most able to use alternative modes - a potenital equity issue.
- Positive incentives such as 'cash-out' rewards for alternatives can be a more positive way to reduce demand, especially in conjunction with priority restrictions.

There are a number of recommended mechanisms you can use to establish the basis for priority:

Inclusion or Exclusion zones are based on an analysis of which residential areas are within feasible walking, cycling or public transport distance. A GIS analysis of zonal accessibility will be required. You can set the boundaries to suit your needs, but generally postcodes within 20 - 30 minutes walking, 20 - 30 minutes cycling or a 30 - 45 minute end to end public transport route set the exclusion marker, with exemptions for mobility issues, health, business need, shift hours, prohibitive caring requirements and car sharing.

A needs-based points system is potentially the most fair and accurate system as it considers all mobility factors in the application process but accordingly requires more management. Points are allocated to each permit applicant depending on their scenario: where they live, how accessible it is and how able they are to use alternative travel modes (using similar analysis and criteria as for the inclusion / exclusion zones above). Those over a certain score, or up to your maximum allocation, get a permit or are assigned priority. Staff who feel it is not feasible for them to use an alternative can ask for further consideration.

Regardless of your mechanism it is useful to base your priority on an analysis of how accessible staff residential areas are, to establish general categories of a) staff who vitally need a space, b) those who will struggle without a space and c) those that, at least theoretically, should be able to use alterntiaves.

Priority based access restrictions act as a very effective disincentive, but must be firmly applied - i.e not opening access to everyone even when some surplus spaces are available - and resulting off-site parking will need management.

Parking fees can also act as a disincentive but reduction in demand will be based on willingness to pay rather than the feasibility of alternatives. Setting the right price is vital - high enough to act as a significant disincentive but not so high as to be punitive for lower incomes.

Annual permit charges are usually based on a percentage of salary in order to be fair. Though simpler to administer, they tend to encourage people to drive in every day to get best value from their permit.

Daily charges are better for encouraging mixed mobilty and not locking in behaviour but are harder to charge by salary brackets so risk being unfairly punitive for lower income staff.

A more positive alternative to charging is a 'cash-out' scheme where parking remains free but staff are rewarded in comparable value when they don't drive. Evidence shows this can lead to significant modal shift - one study recorded a 64% rise in car sharing as a result.[2]

Disincentives will receive higher acceptance levels by staff when combined with evident investment in viable alternatives, such as convenience improvements, provision of rewards for all alternative journeys, or 'cash-out' incentives.

Controlling access and enforcing policy

- Any form of granted priority or restriction must be enforced onsite for it to successfully impact demand over time.

- Smart access systems allow for easier enforcement and make many more demand management features possible.

- Demand reduction is maximised when staff definitively know in advance when they do, or do not, have a parking space. Providing certainty in advance allows staff to plan alternative journeys and will significantly reduce overspill off-site parking problems in surrounding areas.

The type of access control mechanisms you use will determine what sort of demand management measures you can use and how successfully they will reduce demand.

Printed permit systems and access gates that open for all staff are great for low overhead costs but mean you will need to manually enforce all parking rules. These systems tend to preclude the use of many demand management measures such as allocating incentives to people for the days they choose alternative modes despite having a car parking permit.

Smart systems such as Automatic Number-plate Recognition and smart card systems which determine who has permitted access at the gate have higher initial overhead costs but can significantly reduce the management and enforcement burden. The data they collect on individual journeys can help track how efficiently your systems are working and enable the allocation of incentives or rewards.

Opening up car parks after priority users have parked or allocating surplus spaces as 'first come first serve' tends to undermine demand reduction measures - staff will make the journey by car on the possibility of getting a space. This greatly contributes to off-site parking problems.

There are new solutions emerging to help with filling car parks efficiently, such as online pre-booking systems and real-time mobile booking applications for surplus spaces.

Practical delivery considerations

- Developing a new policy will require cross-team working and input from all parts of the organisation

- New policies or alterations benefit from being based on firm organisation-wide commitments.

- Wider systems and processes within your organisation will impact the ease and success of delivering demand management measures.

- Some dedicated coordination resource is usually required in order to ensure systems work for all staff and suitable support can be accessed by staff.

Policies are stronger and more effective when driven by firm organisation-wide commitments such as efficiency, environmental or staff well-being commitments. Ensure clear links are made to these commitments whilst developing your strategy.

Low awareness amongst senior management and colleagues about the potential value of demand management can act as a barrier for securing the levels of investment necessary for successful schemes - especially for effective measures with high initial overheads such as smart access systems or providing 'cash-out' incentives. Calculating the full cost of providing your parking can strengthen vital senior support.

Implementing or adapting certain core policies can support the feasibility of your policy. Having a flexible arrival and departure time policy for instance can facilitate staff using alternative modes, especially with aligning school drop-offs and pick-up times.

You will need to ensure suitable administration and management processes are put in place. Many processes can be managed by relevant existing teams such as HR, facilities or administrators, but will require clear communication and coordination from a central manager or coordinator.

Having a dedicated coordinator to support staff and liaise with team managers supports effective operation, although new automated systems such as real-time booking are reducing manual coordination requirements.

WHAT A POLICY SHOULD INCLUDE

Purpose of the policy

• **Statement of strategic aims and objectives:** maximising access and efficiency, minimising congestion and impact etc.

• **How policy will contribute to the organisation's wider commitments and vision**: founding principles, environmental and wellbeing commitments.

Context

• **Issues and challenges facing the organisation and site**: both external (congestion, rising car levels) and internal (limited parking supply; cost and efficiencies).

• **Opportunties supporting new policy**: both external and internal improvements in infrastructure provision for mixed mobility.

• **Policy model being used and how it will address these challenges and fulfil objectives.**

Scope

• **Who the policy does and does not apply to**: staff, visitors, contractors etc.

• **When the policy will and will not apply**: bank holidays, weekends, out of hours, certain working days.

Policy Elements

• **Description of policy model:** priority groups; exclusion zones; charging or fees; incentive schemes.

• **Parking areas or zones:** who can park in which areas (car share; short stay etc).

• **Criteria for assigning priority:** detailed descrption of how priority is established; criteria; how zones established; how fee structure calculated.

• **Application process:** how staff apply for a permit; allocation and confirmation process.

Access

• **Gaining access to site**: permit types, control gates and how operated; details of systems such as ANPR or smart cards.

• **Car sharing:** how access is managed for car share groups; permit requirements; flexibility measures; how to access guaranteed ride home in case of emergencies.

Safety and security

• **Parking rules:** speeds, disabled spaces; minimising obstructions; lines; no park areas.

• **Responsible use**: cleanliness, courtesy etc.

• **Security:** anti-crime measures; disclaimers.

Enforcement

• **How compliance will be monitored**: ANPR, smart cards, manual enforcement.

• **Procedures when on-site parking policy not adhered to**: warnings, bans, tickets.

• **External parking rules and penalites**: where staff can and cannot park around the site, how it will be enforced.

Incentives

• **Rationale**: why incentives being granted and how equal between different modes.

• **Scheme details:** 'cash-out' or other reward schemes, rewards, limitations.

• **Allocation**: how monitored and allocated.

• **Any related terms and conditions**

Reviews and feedback

• **Review process**: commitment to regular review and feedback; how feedback will be reviewed; limitations; review schedule.

• **Submitting feedback:** how staff can comment and make suggestions.

Contact and support

• **Support and information:** contact details; support available; where information posted.

COMMUNICATING POLICY

Consistent, transparent and positive communication can reduce the amount of negative reaction new demand management measures receive from staff and therefore make policies more successful in the long term.

Key messages

Ensure the underlying reasons and strategic goals driving the policy are really clear and regularly refered back to. Reducing vehicles on already clogged roads, improving access for all, improving efficiency are all major challenges. Make it clear that your policy is founded in your organisation's core vision and commitments such as staff wellbeing and environmental sustainability.

Draw attention to the value of your parking. It is a vital and valuable resource for the whole organisation and therefore must be used efficiently to provide vital access for those who most need it.

You can also raise awareness of the desire to ensure all staff benefit from equal support and investment however they travel. Free staff parking is in reality a subsidy for drivers, with the cost of maintaining and operating car parking covered by the business and ultimately its customers or funders.

Remind people regularly of the external challenges facing the organisation - particularly congestion. There are lots of statistics showing car ownership, vehicle trips, vehicle miles and population density in urban areas are all on the rise. Congestion is only set to get worse so all businesses are facing the challenge of ensuring priority users can get to site easily, and that they are doing their bit to limit their impact.

Highlight that the policy is being implemented as part of a set of wider measures to improve mobility options for all staff. Mention positive incentives for those not travelling by car and any improvements you are making to help people travel by other modes.

Key actions

Involve and consult staff from the outset and feed back decisions as they are made to help build a good level of understanding and acceptance before the policy is implemented. Consider bringing together a set of 'neutral' staff liaison reps to help communicate the policy back to teams rather than only communicating through managers or email.

Promote support services for staff impacted by the policy before, during and after the new policy comes in. Personalised Travel Planning is a useful support service to offer staff who are being required to travel by varied or new modes.

Providing thanks and feedback to people as they start to adhere to the new policy helps reinforce new travel behaviours for staff and also backs up the original rationale. Simple messages such as "thanks for cutting congestion" can make staff feel valued and appreciated for the efforts they are being asked to make.

More information

Useful websites

- Travelwest
- Department for Transport
- British Parking Association
- International Parking Community

Evidence and research

[1] 'The geography of transport systems', Dr Jean-Paul Rodrigue, Hofstra University.

[2] 'Parking Measures and Policies: Research Review', TRL Limited, May 2010.

- 'Evidence Measure Review No. 8 Parking', Evidence Project, EU, 2016.
- 'Making Car Parking Management an Effective Tool in Travel Planning', Atkins, 2006.
- 'Parking Policies and the Effects on Economy and Mobility', Cost 342 Project, 2005.
- 'Using simple GIS techniques to aid target setting and monitoring of travel plans', Association for European Transport, 2002.
- 'Parking Management: Strategies, Evaluation and Planning', Todd Litman, VTPI, 2013.
- 'The High Cost of Free Parking', Donald Shoup, 2011.

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