

Mid Sussex District Council

Parking Strategy Refresh – Phase 2/3 Report

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Prepared by

parking
matters

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1. Introduction

Parking Matters Ltd (PML) were commissioned by Mid Sussex District Council (the Council or MSDC) to assist in the production of a refreshed Parking Strategy and associated 5-year Action Plan for the District. This will be presented to Members of the Council with the objective of adopting a final strategy.

This report outlines the technical work undertaken during the second and third phases of the project to provide the evidence to support the Strategy.

Figure 1 illustrates the process PML and the Council have undertaken. A cross party Member group has shaped the progress and direction of the project.

Figure 1: Project Process



Phase 2 challenged the current arrangements, estate, and technology utilised within the District against best practice, experience of other operators, and available data. Phase 3 brings this together to allow for recommendations to be made which can be taken forward into the Strategy and Action Plan.

Summaries of evidence and technical work are shown in blue tables throughout, with recommendations highlighted in orange tables. Technical evidence can only go so far in helping decision-makers. Parking, and more widely, placemaking, is an ongoing process and it will be up to the Council to decide whether the recommendations are implemented based on their wider priorities.

2. Parking Policy

Given the wider importance of parking in respect of local economies and environments, parking policy is not just the domain of parking operators. Relevant policy affecting parking was outlined in the Phase 1 report. This section considers the relative performance of the current policies of the MSDC parking service against wider benchmarking policy.

The tables below summarise key policies and considers the relative performance of the District's parking estate and operation against them. We consider:

- The National Planning Policy Framework;
- The West Sussex Local Transport Plan;
- The Mid Sussex Economic Delivery Strategy;
- Other policies such as season ticket and planning policy.

2.1 National Planning Policy Framework

The National Planning Policy Framework states that: *"In town centres, local authorities should seek to improve the quality of parking so that it is convenient, safe and secure, alongside measures to promote accessibility for pedestrians and cyclists"*.

This is a change from the previous NPPF which strongly emphasised the level and availability of parking.

Table 1: National Policy Framework

Aim / Policy / Objective	Challenge	Potential Response
Improve the quality of parking, convenient, safe and secure	17 car parks have achieved the industry-standard 'Park Mark' award for safer parking. This is awarded to car parks which meet high standards of management, appropriate lighting, effective surveillance and provide a clean safe environment.	Park Mark represents the nationally recognised 'quality' standard for car parks and remains an appropriate objective.
Promote accessibility for pedestrians and cyclists	There is some cycle parking across the estate but this did not appear to be well used. Pedestrian improvements are outlined when considering individual sites.	The car park estate could do more promote to modal shift and more sustainable transport options through Travel Planning.

2.2 West Sussex Local Transport Plan

Parking is a policy tool to influence travel behaviour and therefore, how the District's parking service is supporting the West Sussex Local Transport Plan (LTP) needs to be considered.

Although the level of influence that the District has over transport policy is limited since on street parking is the responsibility of West Sussex County Council, there is however potentially more that can be done in partnership with the County to promote the policy objectives of the LTP. The District and County are already working on transport packages for the Burgess Hill Growth Programme. Specific potential initiatives related to parking include the provision of cycle facilities, promotion of motorcycles and other powered two wheelers (P2W), and facilities such as Mobility Hubs¹.

With regards to cycle parking, cyclists generally insist on parking as close to their destination as possible (ideally within 30m)², and so cycle parking may not be appropriate in car parks away from major destinations. There should not be a blanket policy on providing cycle parking in car parks, and as funding for cycle parking becomes available, it would be more sensible to install facilities on high streets and close to popular destinations rather than in car parks.

Powered two-wheelers are currently allowed to park free of charge in off-street sites. P2Ws make a positive contribution to air quality and congestion reduction³. The occupancy of P2W spaces does not appear to be fully utilised based on-site visits and surveys and so any additional parking would need to be justified. There is no recommendation to introduce charging. Although this would be possible with pay-on-foot or ANPR based systems, it is impractical under the current pay and display regime.

The concept of mobility hubs is becoming popular and a number of pilot projects have been completed⁴ with more planned in larger cities. Practically, at the district level this could include cycle hire and Car Club spaces with the potential to promote interchange. The advantage of Car Clubs for local authorities is that they usually don't require ongoing revenue support.

Figure 2: Mobility Hub Concept from Co-Mobility Project como.org.uk



¹ <https://como.org.uk/wp-content/uploads/2019/10/Mobility-Hub-Guide-241019-final.pdf>

² https://www.cycling-embassy.org.uk/sites/cycling-embassy.org.uk/files/documents/cyclingengland/2008/08/c04_cycle_parking.pdf

³ <https://pages.wiltshire.gov.uk/ltp3-powered-two-wheeler-strategy.pdf>

⁴ <https://como.org.uk/shared-mobility/co-mobility-themes/mobilityhubs/>

Table 2: West Sussex Local Transport Plan

Aim / Policy / Objective	Challenge	Potential Response
Traffic Management: to manage traffic, safety, and share limited kerb space	This is the responsibility of the Highways Authority, but can more be done to prepare for changes in technology to encourage better kerb-side management?	Kerb-side management is one of the main emerging areas of parking for the future. Real-time permitting for deliveries, parking and loading is already possible and may become widespread within the next 10 years ⁵ . Mid Sussex is largely already doing what can be reasonably expected of a medium-sized District in terms of up-to-date back-office technology.
	Survey results show very high demand in some smaller off-street Car Parks, which could be generating traffic as people 'cruise' between them seeking spaces.	Consider rationalising and redesigning the car park estate to better manage traffic and reduce congestion created by finding spaces.
Community: Prioritising residents and their visitors, ensure new developments have adequate parking	Should residents be given the highest priority for on-street parking, especially in areas with ample on-street space and dwellings with private parking spaces? Should car ownership be challenged as well as car use? Can MSDC do more through the planning system to ensure new developments have adequate off-street parking?	Recognition should be given to inbound commuters given their contribution to local economies. The majority of outbound commuters at railway stations are also likely to be residents themselves. This will be considered within the specific town sections. There may be opportunities to provide long-stay parking on-street in some places.
Economic: Provide sufficient on-street parking to maintain vitality	Whilst the responsibility of the Highways Authority, should Mid Sussex adopt positions for on-street schemes and how they are implemented?	Consider the outcomes of the on-street Parking Studies and present the Districts' opinions to County. Consider freeing up kerb space for commuters in appropriate areas especially where residents have off-street parking options. As an enforcement agent, the District should be consulted on new schemes.
Health and Wellbeing: reduce levels of car ownership, promote sustainable travel	Can the parking estate do more to promote sustainable travel? Car parks are often the most obvious location for EV charging, without any real consideration for the appropriateness of this.	Mid Sussex should consider producing a standalone EV strategy to consider the impact on parking and decide the level of appropriate investment in partnership with WSCC. Potential to support specific sustainable travel. Parking Service and other MSDC vehicles could become electric to show intent and support charging points.
Locational: Locate long stay in off-street, support provision of Park & Ride (P&R)	Does this policy need to be reconsidered to make better use of the on-street resource on appropriate streets to account for the high levels of out-commuting?	Ensure the provision of adequate parking in an Investment Strategy. No viable standalone P&R sites have been suggested or discovered during the study.
Enforcement: Integrated and effective service with on and off-street enforcement.	Is the service effectively integrated? Are back-office functions aligned?	Yes, there is comprehensive integration between on and off-street systems and equipment with a unified back-office to manage PCNs and appeals.
Financial: self-sufficient service. Any surplus spent appropriately and legally	MSDC provision and enforcement on behalf of the county is self-sufficient and produces modest surpluses which are reinvested	The current service provides a revenue surplus, this is shared between the County and MSDC for use on appropriate spending in accordance with legislation.

⁵ Just one good example of what Kerbside Management means

<https://www.smartcitiesworld.net/news/news/dublin-pilots-kerbside-management-tool-4207>

2.3 Annual Service Plan 2018/19

The Annual Service plan provides direction for the parking service in line with MSDC's corporate objectives and is how the performance of the service is measured. We have considered both the relevance of the objective and the performance of the service to influence the strategy.

Table 3: Annual Service Plan 2018/19

Aim / Policy / Objective	Challenge	Potential Response
Improve Customer Service through better digital opportunities	Launched online parking case and parking permit /season ticket service management service. Pilot pay-by-phone.	Service launched and working. MSDC should aim for continuous achievement improvement as and when appropriate and cost- effective technologies emerge.
Supporting the delivery of the Burgess Hill regeneration project	Closure of Martlets MSCP is in progress but results in a net loss of parking space controlled by MSDC. Installation of alternative signage to redirect drivers.	The parking service has little influence over the timescales and progress of this project. MSDC should seek to retain their overall parking levels to secure their influence and income.
Achieve industry accreditations, e.g. Park Mark	Retention and extension of Park Mark – is Park Mark still the appropriate standard for car park provision?	Park Mark represents the nationally recognised 'quality' standard for car parks and remains an appropriate objective.
Support vibrant town centres and the local economy	Review outcomes of road space audits. Review demand for season tickets and permits. Improve car park enforcement system for leisure centres.	The overall level and suitability of parking should also be considered in light of survey results. Demand is high with the estate in many areas over 80% full for much of the day. Management regimes in the larger villages need to be considered to achieve the objectives of supporting centres and the businesses and services within them.
Improving enforcement of fraud and bad debt	Improve detection and enforcement of bad debt and fraud across the parking service.	Appropriate objective. New contract for debt recovery is being let in 2020.

2.4 Planning Policy

The Phase 1 report considered the findings of the Road Space Audit in East Grinstead and Burgess Hill, with the audit finding that the CPZ was close to or over capacity in some parts of East Grinstead. Working group and officer feedback has suggested that a general development intensification through windfall and permitted development, often badged as 'car-free' and so not providing off-street parking, is putting pressure on road space as there is no control over which residents can apply for permits.

Many Local Plans formalise for 'Car-Free' development. These allow a developer to not provide off-street parking where they can provide evidence that the development is in a highly accessible location and that the residents will be able to travel using public transport, walking and cycling, or Car Clubs. Some places exclude these developments from being eligible for permits within Residents Parking Schemes or CPZs. Newham, Brighton, and Bristol are just three areas that have successfully implemented restrictions and this has been tested at appeal reasonably recently⁶.

In Newham, this is done through Section 106 of the Town and Country Planning Act 1990. Residents of car-free developments cannot apply for parking permits, even if their address falls within the boundary of a residential parking zone (unless they have a valid disabled blue badge). Residents can apply for visitor permits for the zone within which they live.

In Brighton and Hove, Policy HO7 sets out much the same although uses Planning Conditions rather than S106 agreements. In this case, the council's parking regulations, as defined in the appropriate Traffic

⁶ E.g Appeal Ref: APP/Q1445/A/14/2222561

Regulation Order set out that residents in car-free housing will not qualify for a resident parking permit and a list of Car-free developments is maintained on the website.

2.5 Policy Challenge Overall Conclusions

The key recommendations from the Policy Challenge are as follow:

Aim / Policy / Objective	Recommendation
National Planning Policy Framework	The District should continue to achieve Park Mark status and seek to retain the parking levels it already has to safeguard its level of influence and control over town development as well as secure long-term income to invest in parking and placemaking as allowed by law.
Local Transport Plan – Traffic Management	Consider the future of the car park estate to better manage traffic and reduce congestion created by finding parking potentially disposing and consolidating sites through an Investment Strategy .
Local Transport Plan - ‘residents first’ policy	The role of in and outbound commuters should be recognised more, as they support the town centre economies and / or are residents themselves. MSDC should work with WSCC to consider whether existing TRO enforced schemes on streets are still appropriate through Town Schemes following on from road space audits.
Local Transport Plan – Electric Vehicles	MSDC should consider preparing an EV strategy to manage the issue and consider whether off-street car parks are actually the most appropriate places for EV charging. (See Appendix 4). The Parking service should consider using electric fleet vehicles to demonstrate intent and show leadership (whilst potentially make savings).
Local Transport Plan – Travel Plans and Season Tickets	MSDC should seek opportunities to work with WSCC and developers through the planning system to secure Travel Plans and other commitments and could potentially link these to the provision or price of season tickets.
Local Transport Plan – Sustainable Travel and reducing congestion	The district could take a more active role in identifying and working with partners to implement and support sustainable travel initiatives using the parking estate. For example; actively seeking a car club, or cycle hire provider.
Local Transport Plan – Cycling and motor cycles	The appropriateness of additional provision should be considered carefully as spaces do not appear to be fully utilised at present and cyclists prefer parking closer to their final destination.
Annual Service Plan - Support vibrant town centres and the local economy	Additional consideration should be given to the overall quantum of parking to make sure it is appropriate to for the three main towns as they are today and going forward. MSDC should seek to increase levels where appropriate through an Investment Strategy .
Annual Service Plan - Support vibrant town centres and the local economy	Survey results demonstrate that some of the car parks in the larger villages are not fulfilling the role of short term parking to support local centres. A review of the Management Regimes in rural car parks should be undertaken on a case-by-case basis.
Planning Policy	The Council could investigate methods to restrict the eligibility for residents’ permits for residents of new ‘car-free’ developments to reduce pressure on CPZs.

3. Tariff Principles and Benchmarking

Available research referred to in the Phase 1 report suggests that space availability is more important than pricing as customers value the certainty of being able to park when and where they want to above all else. Whilst this doesn't always match with the perception of the town, convenience is a quality that most people are willing to pay for.

Tariffs are the main way that parking is managed and a key means of influencing driver behaviour, for example, to protect short-stay parking and to encourage churn and better management.

In this section we have:

- Set out some principles for tariff setting;
- Benchmarked tariffs against nearby places and similar settlements in order to get a better understanding of the market rate and the potential price elasticity across the estate;
- Considered different types of charging including evening's and Sundays and Blue Badges;
- Modelled 3 three tariff scenarios and provided a commentary on the potential income increase or loss depending on what is adopted; and,
- Made recommendation based on this work.

How tariffs are set depends very much on the objectives of the operator. A retail park or shopping centre is likely to set tariffs to encourage medium dwell times but discourage the 'wrong' sort of parking (e.g. commuters), either through maximum stay limits or through pricing. A private operator is likely to simply set tariffs to maximise income. Local Authorities have a much more difficult job and have to balance a whole range of policy objectives, as well as political influences.

Charges currently apply 08:00 to 18:00 Monday to Saturday and parking is currently free on Sundays. There are uniform charging and payment arrangements across all Pay and Display Car Parks. Disabled parking is free. The types of car parks operated by MSDC are as follows:

- Short Stay, where only the pricing discourages long stay, priced at £6.00 for over 4 hours effectively limited until the next day at 08:00;
- Long stay where parking over 4hrs is £4.00 and again, limited to 08:00 the next day;
- Disc parking, where a disc is purchased in a local shop for £1 and set to allow for the maximum stay which varies between the three car parks;
- Limited stay without disc or pay and display, relating to all larger village car parks that don't have disc restrictions
- Season ticket holders only (Muster Green is Pay and Display on Saturdays); and,
- Other car parks managed by the Council, but for leisure and recreation use.

As discussed with the Working Groups some principles have been agreed and are applied to the wider car park estate. These were:

- To manage and encourage turnover to support local economies;
- To off-set the (increasing) costs of running the service;
- To create capacity where possible and invest in the estate and improve customer experience;
- To improve townscape and regenerate places through environmental improvements;

The current tariff structure is discussed in the Phase 1 report, but briefly; tariffs are the same for time periods up to the 4 – 5-hour rate where short stay car parks cost £4.00 and long stay are £3.00. All-day parking is also different, at £6.00 and £4.00 respectively.

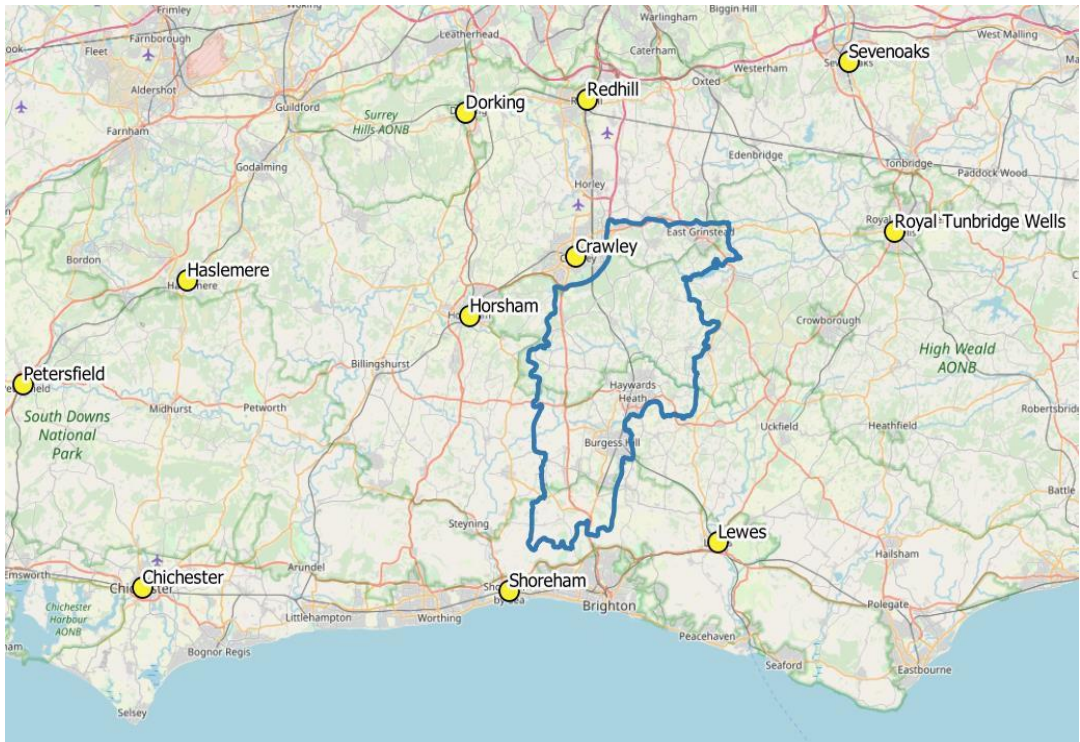
3.1 Tariff Benchmarking

As well as considering nearby settlements and authorities we have also selected settlements with similar characteristics, for example, access to mainline rail and proximity to major cities. We have also referenced the Harper Dennis Hobbs Retail Vitality Index (RVI), which, whilst open to individual

interpretation, is a useful tool to broadly consider whether tariffs reflect the retail offer in a town. The RVI lists the top 500 retail centres by ‘vitality’. What this represents is an attempt to score the retail offer on quality and vitality rather than simply by size. In practice, this means independent boutiques, cafés or major department stores boost the vitality rank whilst bookmakers, and takeaways reduce it.

For the three main towns (which include the P&D car parks) the key comparator towns are shown in Figure 3.

Figure 3: Main comparator locations for benchmarking



As the most popular length of stay is 1 – 2 hrs, the average price for 2hrs of parking has been used as the main indicator. This is shown in

Figure 4. As most other places have differential tariffs across towns, individual car parks are selected which broadly reflect the characteristics of the Mid Sussex District car parks.

Figure 4: Average 2hr price in Car Parks across comparators

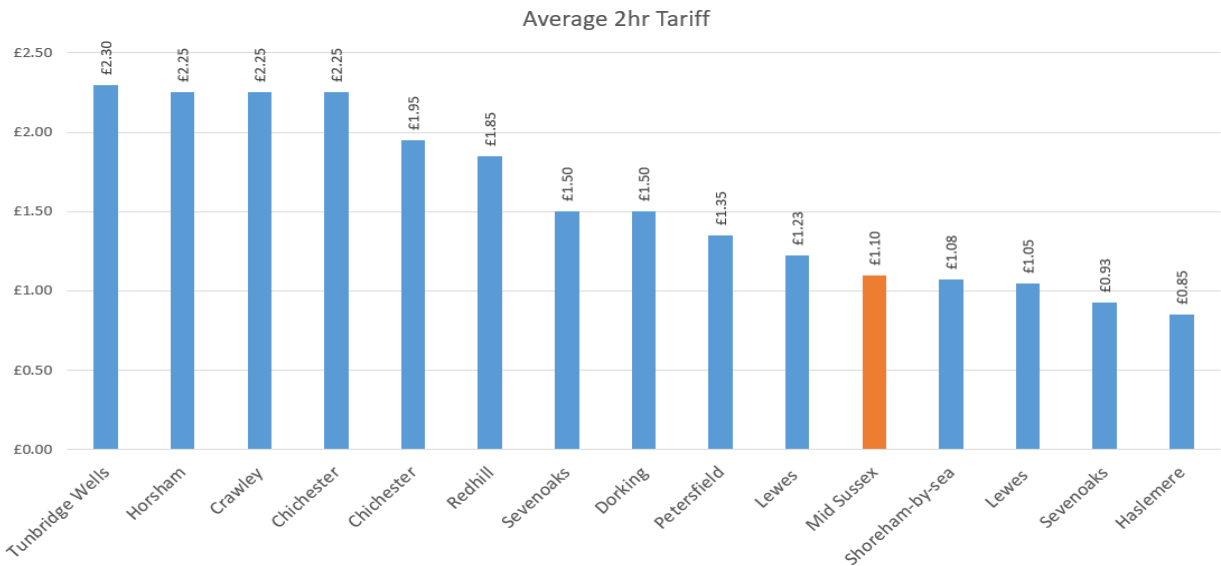


Table 4 shows a longer list and includes the RVI ranks of the comparator settlements alongside the type of car park for comparison.

Table 4: Extended list of comparator Car Parks

Town	Operator	Car Park		0 - 1 hr	1 - 2 hr	2 - 3 hr	3 - 4 hr	All day	Ave. 2h	RVI
Luton	Private	Old Court House	Surface	£4.40	£4.40	£6.40	£6.40	£15.40	£5.50	212
Brighton	Council	Trafalgar Street	MSCP	£3.00	£6.00	£9.00	£9.00	£16.00	£4.50	22
Crawley	Private	Kingsgate	MSCP	£2.50	£2.50	£2.50	£2.50	£2.50	£3.13	172
Crawley	Private	County Mall	MSCP	£2.50	£2.50	£3.00	£3.50	£5.00	£3.13	172
Horsham	Council	Swan Walk	MSCP	£2.40	£2.40	£3.60	£4.80	£12.00	£3.00	111
Eastbourne	Private	Trinity Place	MSCP	£2.00	£3.00	£4.00	£5.00	£6.00	£2.75	119
Tunbridge Wells	Council	Great Hall	Surface	£1.60	£2.80	£3.80	£4.80	£10.40	£2.30	225
Tunbridge Wells	Council	Crescent Rd	Surface	£1.60	£2.80	£3.80	£4.40	£5.90	£2.30	225
Brighton - Suburb	Council	London Road	MSCP	£1.50	£3.00	£6.00	£6.00	£15.00	£2.25	494
Crawley	Council	Orchard Street	MSCP	£1.50	£3.00	£5.00	£7.00	£7.00	£2.25	172
Horsham	Council	The Forum	MSCP	£1.80	£1.80	£2.70	£3.60	£9.00	£2.25	111
Sevenoaks	Council	Bligh	Surface	£1.50	£3.00	£5.00	£10.00	Max 4 hrs	£2.25	28
Eastbourne	Council	Wish Tower	Surface	£1.60	£2.40	£3.50	£3.50		£2.20	119
Crawley	Private	Parkside	MSCP	£1.50	£2.50	£3.00	£4.00	£6.00	£2.13	172
Eastbourne	Council	Redoubt	Surface	£1.50	£2.50	£3.50	£5.00	£5.00	£2.13	119
Luton	Private	The Mall	MSCP	£1.50	£2.00	£3.00	£4.00	£8.00	£2.00	212
Swindon	Council	Brunel Centre (S)	MSCP	£1.20	£2.40	£3.60	£4.80	£38.00	£1.80	199
Crawley	Council	Tilgate	Surface	£1.10	£2.20	£3.30	£4.40	£5.50	£1.65	172
Worthing	Council	Buckingham	MSCP	£1.00	£2.30	£3.60	£4.80	£10.00	£1.58	182
Dorking	Council	St Martins Walk	MSCP	£1.00	£2.00	£3.00	£4.00		£1.50	86
Leatherhead	Council	Swan Centre	MSCP	£1.00	£2.00	£3.00	£4.00		£1.50	
Poole	Council	New Orchard	Surface	£1.00	£2.00			Max 2 Hrs	£1.50	204
Poole	Council	Kingland Road	MSCP	£1.00	£2.00	£3.00	£4.00	Max 5 Hrs	£1.50	204
Sevenoaks	Council	Town	Surface	£1.00	£2.00	£3.00	£4.00	£4.60	£1.50	28
Sevenoaks	Council	Bradbourne	Surface	£1.00	£2.00	£3.00	£4.00	£8.00	£1.50	28
Sevenoaks	Council	Buckhurst	Surface	£1.00	£2.00	£3.00	£4.00		£1.50	28
Swindon	Council	Brunel Centre (LS)	MSCP	£1.00	£2.00	£3.00	£4.00	£8.00	£1.50	199
Tunbridge Wells	Council	The Old Coach P	Surface	£1.00	£2.00	£3.00	£4.00	£4.50	£1.50	225
Bognor Regis	Council	The Regis Centre	Surface	£1.00	£1.60	£2.40	£3.20	£7.00	£1.40	452
Luton	Council	Hitchen Road	Surface	£1.10	£1.10	£1.10	£1.80	£5.30	£1.38	212
Crawley	Council	Town Hall	MSCP	£1.00	£1.00	£2.50	£3.50	£3.50	£1.25	172
Havant	Council	Town End House	Car Park	£1.00	£1.00	£2.00	£3.00		£1.25	203
Lewes	Council	Friars Walk	Surface	£0.80	£1.80			Max 2 Hrs	£1.25	
Stockton-on-Tees	Council	Castlegate Shopp	Surface	£1.00	£1.00	£1.00	£2.00	£3.50	£1.25	
Lewes	Council	East Street	Surface	£0.80	£1.70	£2.60	£3.50		£1.23	
Bognor Regis	Council	Hotamton	Surface	£0.80	£1.60	£2.40	£3.20	£7.00	£1.20	452
Billinghurst	Private	Jengers Mead	Surface	£0.90	£1.00	£1.50	£2.00	£3.00	£1.15	
Billinghurst	Council	Library	Surface	£0.75	£1.50	£1.50	£1.50	Max 3 hrs	£1.13	
Mid Sussex	Council	Long Stay	Surface	£0.80	£1.20	£2.00	£3.00	£6.00	£1.10	n/a
Mid Sussex	Council	Short Stay	Surface	£0.80	£1.20	£2.00	£3.00	£4.00	£1.10	206
Lancing	Council	North Farm Road	Surface	£0.70	£1.50	£2.50	£2.50	£4.00	£1.08	
Shoreham-by-sea	Council	Middle Street	Surface	£0.70	£1.50	£2.50	£2.50	£6.00	£1.08	
Tetbury	Council	West Street	Surface	£0.70	£1.50	£2.00	£2.00		£1.08	
Tetbury	Council	West Street	Surface	£0.70	£1.50	£2.00	£2.00		£1.08	
Lewes	Council	The Maltings	Surface	£0.70	£1.40	£2.20	£2.90	Max 8 hrs	£1.05	
Farnborough	Town Ce	Kings Moat	Surface	£0.70	£1.30	£1.80	£5.50	£5.50	£1.03	
Sevenoaks	Council	Ashley Rd	Surface	£0.60	£1.30	£1.30	£2.40	£5.50	£0.93	28
Aldershot	Council	High St	MSCP	£0.60	£1.20	£1.70	£5.00	£5.00	£0.90	489
Shoreham-by-sea	Council	Little Croft	Surface	£0.60	£1.20	£2.50	£4.00	£4.00	£0.90	
Shoreham-by-sea	Council	Beach Green	Surface	£0.60	£1.20	£2.50	£4.00	£4.00	£0.90	
Bognor Regis	Council	Fitzleet	MSCP	£0.40	£0.40	£1.80	£2.40	£7.00	£0.50	

When comparing Mid Sussex tariffs to other places we consider that:

- The tariffs are at the lower end of the pricing spectrum. This applies when simply comparing nearby settlements and when looking at towns with similar characteristics such as size, connectivity, and vitality;
- Mid Sussex is unusual in applying a blanket tariff across the whole District and most authorities differentiate between towns and increasingly individual car parks within them to reflect the offer or manage the demand between car parks;
- 80p is also lower than most places charge for the first hour, which generally starts at £1.00.

As set out in the Phase 1 report, the three main towns have very different characteristics and need to be considered separately:

- Burgess Hill is not in the top 500 of the RVI, the Working Group generally felt that it could be reasonably compared to Aldershot, Leatherhead, and perhaps Farnborough. In comparison to these places, the current tariff is reasonable, and the surveys showed a surplus of spaces in the town centre. When the town centre development that will be taking place over the next few years is completed, the tariffs should be reviewed. In the meantime any increase should take account of inflation but for the time being should not be subject to a significant rise.
- Haywards Heath's nearest relevant RVI comparators are Horsham and Eastbourne and the working groups felt that Redhill and Petersfield could also be reasonably drawn upon. Given the occupancy surveys which reported only a modest surplus in of spaces, the tariffs certainly represent good value especially given inflation and cost increases incurred since the last review, as well as the retail and leisure offer of the town.
- East Grinstead is already a vibrant and attractive destination. This is reflected in the RVI ranking and the occupancy surveys which showed very little unoccupied parking across the off-street car park estate and that the parking was close to full (i.e. over 80%) for much of the day. East Grinstead, when compared to other places, is under-priced and this may be leading to reduced churn; and making it harder for customers to find parking when they need it close to where they want it.

3.2 Season Tickets

We have also compared season ticket prices to the peer group and other car parks, and these are summarised in Figure 5. Locations in blue are town-centre car parks. Those shown in green are relevant railway station car parks within Mid Sussex. Mid Sussex is shown in orange. Table 5 shows the percentage discount a season ticket offers in various places on the day rate (calculated on 215 working days a year for simplicity).

Figure 5: Season Ticket comparison

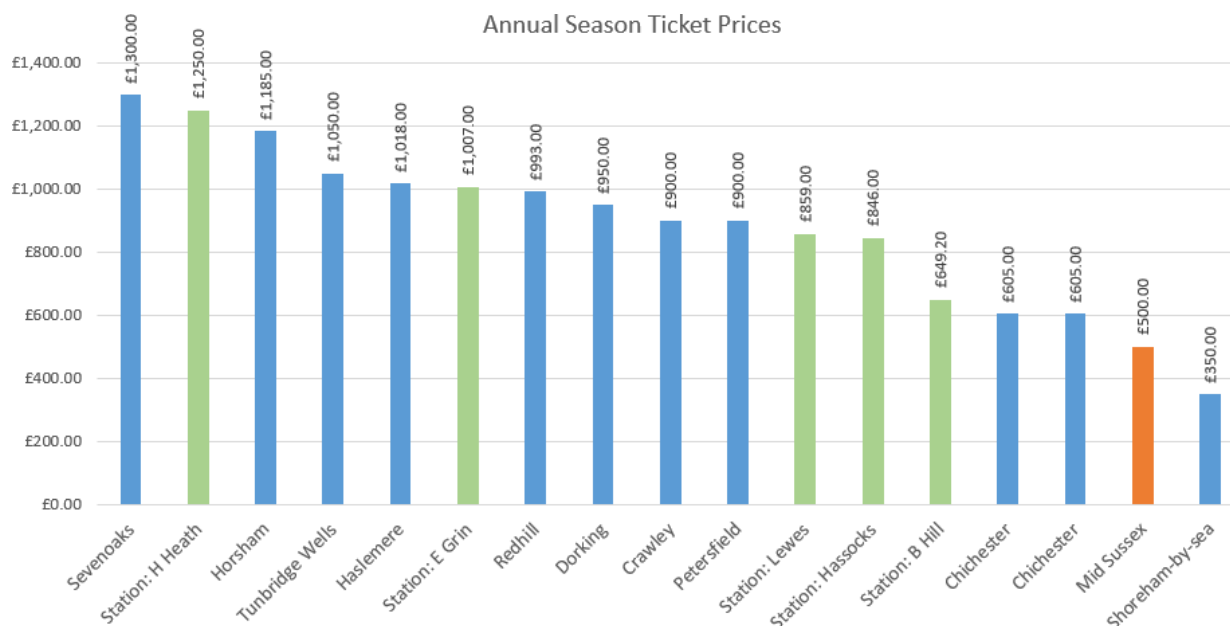


Table 5: Season Ticket prices and % discount

Town	All day	Season	Seas. Dis.
Sevenoaks	£5.50	£1,300.00	9.44%
Haslemere	£5.00	£1,018.00	21.99%
Station: E Grin	£5.35	£1,007.00	27.88%
Redhill	£6.00	£993.00	36.59%
Sevenoaks	£8.00	£1,300.00	37.74%
Station: Hassocks	£5.30	£846.00	38.84%
Station: B Hill	£4.20	£649.20	40.78%
Station: H Heath	£8.60	£1,250.00	44.31%
Horsham	£9.00	£1,185.00	49.55%
Station: Lewes	£6.60	£859.00	50.13%
Crawley	£7.00	£900.00	50.74%
Petersfield	£7.00	£900.00	50.74%
Tunbridge Wells	£10.40	£1,050.00	61.32%
Dorking	£10.00	£950.00	63.60%
Mid Sussex	£6.00	£500.00	68.07%
Shoreham-by-sea	£6.00	£350.00	77.65%
Chichester	£13.40	£605.00	82.70%
Chichester	£15.40	£605.00	84.95%

Season tickets are lower in Mid Sussex in absolute terms than many other comparable places and surrounding authorities and tend to be more in line with places further afield such as Dudley, and Stockton rather than Sevenoaks, Tunbridge Wells and Redhill. The discount offered is also reasonably generous. When compared to the station car parks within the District season tickets offer good value, with Haywards Heath offering season tickets at about 40% less than the station car park (albeit they are some distance away from the station).

Differential pricing, at least between the three main towns would better reflect demand and provide an element of 'fairness', especially where there are waiting lists.

3.3 Car parks in the larger villages

The car parks in the larger villages (Hassocks, Lindfield, Cuckfield and Hurstpierpoint) do not charge at all. Whilst not unusual, more and more places are charging for smaller car parks as time goes on and locally, Horsham and Chichester have started to charge in smaller settlements in recent years. There are very good reasons to charge for

parking in smaller settlements; parking is never free as there are costs associated with maintenance, lighting, business rates and management. In the case of local authorities, this means that car parks are therefore effectively subsidised either by those sites that do charge or by general taxation.

The stronger argument is one of effective management and encouraging churn, allowing the customers of businesses and services to find parking when they need it. The occupancy surveys showed that in many of the larger village car parks were full or effectively full for much of the time.

We have compared the larger villages to some other places in the region in Table 6. It is notable that the sums charged are not high, but supporting the statement above, appear to be set at a reasonable level to effectively manage the car parks.

Table 6: Tariffs in larger villages and smaller towns

Authority	Town / Village	0 - 1 hr	1 - 2 hr	2 - 3 hr	All day	Ave. 2hr
Wealden	Oxted (sta.)	£6.60	£6.60	£6.60	£6.60	n/a
Horsham	Billingshurst (sta.)	£3.50	£3.50	£3.50	£3.50	n/a
Mole Valley	Ashted	£1.00	£2.00	£3.00	£6.00	£1.50
Mole Valley	Bookham	£1.00	£2.00	£3.00	£5.00	£1.50
Horsham	Billingshurst	£0.90	£1.00	£1.50	£3.00	£1.15
Horsham	Billingshurst	£0.75	£1.50	£1.50	Max 3	£1.13
Horsham	Henfield	£0.75	£1.50	£1.50	Max 3	£1.13
Adur	Lancing	£0.70	£1.50	£2.50	£4.00	£1.08
Adur	Shoreham-by-sea	£0.70	£1.50	£2.50	£6.00	£1.08
Adur	Shoreham-by-sea	£0.60	£1.20	£2.50	£4.00	£0.90
Chichester	East Wittering	£0.50	£0.70	£0.90	£2.20	£0.68
Chichester	Petworth	£0.40	£0.40	£0.80	£1.20	£0.50
Tandridge	Oxted	£0.00	£0.00	£3.00	£6.50	£0.00
Chichester	Midhurst	£0.00	£0.00	£0.40	£10.00	£0.00
Tandridge	Caterham	£0.00	£0.00	£0.00	£3.70	£0.00
Tandridge	Lingfield	£0.00	£0.00	£0.00	£3.70	£0.00
Wealden	Crowborough	£0.00	£0.00	£0.00	£0.00	£0.00
Wealden	Uckfield	£0.00	£0.00	£0.00	£0.00	£0.00
Lewes	Barcombe	£0.00	£0.00	£0.00	£0.00	£0.00
Lewes	Ditchling	£0.00	£0.00	£0.00	£0.00	£0.00
Horsham	Cowfold	£0.00	£0.00	£0.00	£0.00	£0.00

When considering what is appropriate, we have considered some places that could be reasonably compared. For example, Cuckfield could reasonably be compared to Petworth or Midhurst, having no station, but a range of attractive independent shops and a number of smaller businesses. With railway stations and a smaller range of retail, Billingshurst could be compared to Hassocks.

Table 7: Larger Villages compared to other places

Settlement	Potential Comparator	1 hr tariff	All day rate
Cuckfield	Petworth /Midhurst	40p / free >2hrs	£1.20 / £10.00
Hassocks	Billingshurst / Lingfield	75p / free >2hrs	£3.70 (station car park)
Hurstpierpoint	Billingshurst	75p	£3.00 (shopping car park)
Lindfield	Petworth	40p	£1.20

Table 7 supports the view that charges should be reasonable and could support the economies of the larger villages through better car park management. Practice in other places alongside the usage surveys makes a strong case for some level of charging in the larger villages.

This establishes the principle that tariffs may be appropriate.

The larger villages are discussed in more detail in the 'Estate' Section.

3.4 Evening and Sunday Charging

From our investigations, free evening parking is offered at some council car parks in the neighbouring authorities. Privately owned shopping centres generally always charge for evening and Sunday parking, which would suggest that from their experience, reasonable charges do not impact footfall.

We have limited data to evidence occupancy of off-street car parks during evenings and Sundays therefore more surveys and consultation will be required to support our recommendations. Based upon the data we have, our experience of other similar locations and the fact that charges are applied at other towns, we do not anticipate that the introduction of low and reasonable charges during these periods would materially influence parking demand.

Income derived from evening and Sunday parking would help fund service improvements at the car parks, including the potential to provide additional capacity. We would therefore recommend that the introduction of evening and Sunday charges is considered in the future.

Whilst parking charges may deter some convenience retail customers where parking costs may represent a much larger proportion of retail spend, if set at a fair level they can help ensure that parking spaces frequently turn over, thereby increasing overall footfall. This effect can sometimes be achieved by utilising limited stay restrictions without charging motorists, however, the successful management and enforcement of car parks comes at a financial cost that needs to be funded to be sustainable, usually by charging for these parking visits. For example, at out of town retail parks where free parking is often quoted as a major attraction, these parking management costs are paid for by retail tenants via lease service charges.

At a time when local authority budgets are under immense pressure, it is increasingly important that parking services are self-sufficient, whilst ensuring that parking continues to support local businesses and communities. Implementing a reasonable charging policy can meet these objectives.

3.5 Tariffs for local residents/Resident Cards

Some councils offer residents' discount schemes for car parks and other services via smartcards. Similar schemes could be implemented via a virtual permit interface. Those registered on the scheme(s) would be able to access a special tariff through their licence plate if all MSDC car park systems are based on licence plate recognition or entry.

Current schemes include the Minster Badge in York. The City of York Council currently offers residents who own a vehicle various discounts on parking charges in its car parks upon purchase, and the badge allows free parking in some car parks and the on-street parking bays after 6 p.m. The badge costs £20 to cover administrative costs and is valid for 2 years. In 2017/18 only 6% of paid car park transactions were from Minster Badge holders.

The Advantage Card administered by the Royal Borough of Windsor & Maidenhead is understood to be much better utilised. This resident card offers its users much wider benefits than parking discounts including reductions on local leisure destinations and retail outlets including Legoland, Royal Windsor Racecourse and the Borough's leisure centres. An estimated 80% of the Council's population are owners of the card. The card is free for residents. Free entry is also available to all public areas of Windsor Castle. In terms of parking, cardholders can gain discounts of up to 50% during daytime hours and evening parking is free in most car parks.

It is clear that these types of concessions are more popular if linked to a number of activities and could be considered as part of a wider marketing strategy to attract more visitors to the Districts' towns and villages. When limited only to parking, they simply act to reduce parking tariffs when there is no clear evidence that will impact town centre footfall or that there is demonstrable demand for their use. They can, however, be beneficial in locations where there is significant seasonal traffic to manage and deter via higher parking charges, without impacting local residents who have access to reduced rates.

3.6 Discount or Incentive Schemes

Using barcode technology, businesses could provide incentives for customers including providing discounts off their next visits. Payment terminals would need to be fitted with barcode readers to accommodate this.

The emergence of payment platforms integrated to the Council's systems will allow businesses to create and register apps for their own or their customers' use. These will enable them to pay or part pay for customers' parking without having to engage with the Council or use complicated vouchers or cards at payment machines. Businesses would also be able to create schemes that pay for customer parking in advance (e.g. "free parking for local customers this weekend"). We recommend that schemes are consulted upon once the car park technology can support them. This could also be used to support specific local services.

3.7 Free Parking for Disabled Badge Holders

The Government's rights and responsibilities leaflet, issued with a blue badge, states that the purpose of the blue badge is to help a disabled person to park close to their destination, either as a passenger or driver. The leaflet also states that *"...the badge is intended for on-street parking only"*.

Many disabled people and groups do not understand the rationale for making off-street disabled parking free, the most important requirement is that spaces are made available in convenient places. The argument that disabled people tend to be on a low income, and therefore should benefit from free parking, is criticised by a wide range of organisations and groups who argue that using the same logic, other low- income groups should also be able to park for free.

The issue will most likely become more complex if the recent plans to include 'hidden' disabilities (such as autism and dementia) result in an extension of the scheme.

Disabled Motoring UK's (the largest UK charity specialising in the mobility of disabled people) policy position is that Blue Badge holders should be able to park for up to three hours free of charge in off-street car parks. They argue that the same free parking concession should apply in car parks as it does on-street e.g. three hours free parking. The rationale for this is that when car parks charge it encourages more badge holders to park on the street which is more dangerous and could possibly cause traffic problems.

Some councils do however charge disabled users for example, Plymouth, Newcastle, Cheltenham and Exeter. Others such as Cornwall County Council, Rushmoor Borough Council and the Borough of Poole limit free parking to automatic Blue Badge holders with most need (automatic qualification is available if holders are receiving certain mobility benefits). Disabled Motoring UK feels this is confusing and unfair as it discriminates against people with equivalent needs who for some reason may not qualify for these benefits.

Examples of other Councils' justifications for charging include tackling abuse and helping to fund services such as Shopmobility.

There is no clear recommendation on whether or not disabled parking should be free, and we would suggest that this is a political decision. Charging does reduce abuse as there is no longer an incentive for Blue Badges to be shared with family members to avoid parking charges. The exact impact of removing charges would be extremely difficult to measure as there is no data available as to the proportion of vehicles currently displaying Blue Badges in Council car parks, however from anecdotal evidence from other local authorities, it could represent circa 2%-3% of gross revenue (net of VAT).

It should also be recognised that free parking can create operational issues for any future pay-on-exit systems. In addition, Blue Badges are issued to individuals, not to vehicles and this creates difficulties when monitoring parking using digitised systems. One way to significantly improve Blue Badge monitoring is to link badges to vehicles, effectively treating the badges as special passes, providing a

website where badges can easily be registered (including temporarily), and incentives (such as free parking) linked to badges that have been registered. A second way of registering (e.g. a phone line) should also be provided to ensure accessibility.

When using barriered systems registration can be used with ANPR or RFID cards. Each has its advantages (for example RFID cards can easily be transferred between vehicles) but each also has disadvantages (RFID cards could be used by drivers without a blue badge). From an operational point of view, it is better to make arrangements that remove the need to differentiate Blue Badge holders from other vehicles.

3.8 Tariff Modelling

We have modelled three scenarios to give an indication of the potential impact of changes on revenue based on the benchmarking and discussions with the Working Groups:

- A 'market' rate which from the benchmarking we feel could be reasonably charged;
- An 'inflation' rate which accounts for inflation since the last tariff review;
- A 'half-hour free' rate which responds to frequent pressure from the public and traders for the first half-hour to be free.

We have modelled three scenarios to give an indication of the potential impact of changes on revenue based on the benchmarking and discussions with the Working Groups:

Scenario 1: Market rate is shown in the table and is based on our thoughts on what the market rate could be if tariffs had been raised since 2009 to reflect inflation, popularity car parks across the towns and retail vitality. It results in a modelled £363,194 increase in revenue.

	East Grinstead				Haywards Heath				Burgess Hill			
Scenario: "Market Rate"	Short Stay		Long Stay		Short Stay		Long Stay		Short Stay		Long Stay	
	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
Up to 1/2 hour	0.80	1.00	0.80	1.00	0.80	1.00	0.80	1.00	0.80	1.00	0.80	1.00
Up to 1hr	0.80	1.00	0.80	1.00	0.80	1.00	0.80	1.00	0.80	1.00	0.80	1.00
Up to 2 hrs	1.20	1.80	1.20	1.80	1.20	1.50	1.20	1.50	1.20	1.40	1.20	1.40
Up to 3 hrs	2.00	2.60	2.00	2.60	2.00	2.30	2.00	2.30	2.00	2.20	2.00	2.20
Up to 4 hrs	4.00	4.50	3.00	4.00	4.00	4.30	3.00	3.30	4.00	4.20	3.00	3.20
All Day	6.00	6.00	4.00	5.00	6.00	6.00	4.00	4.50	6.00	6.00	4.00	4.20
Forecast Impact	£ 189,728.96				£ 104,966.32				£ 68,499.20			
Total District	£ 363,194											

Scenario 2: Inflation- the rate is based on the 2-hour tariff (£1.20 in 2009 is £1.40 in 2019 prices) but is rounded in other cases (e.g. £1 at 2009 prices is £1.06p in 2019 prices) to account for clarity of tariffs and provide more logical changes to current tariffs.

	East Grinstead				Haywards Heath				Burgess Hill			
Scenario: "Inflation"	Short Stay		Long Stay		Short Stay		Long Stay		Short Stay		Long Stay	
	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
Up to 1hr	0.80	1.00	0.80	1.00	0.80	1.00	0.80	1.00	0.80	1.00	0.80	1.00
Up to 2 hrs	1.20	1.40	1.20	1.40	1.20	1.40	1.20	1.40	1.20	1.40	1.20	1.40
Up to 3 hrs	2.00	2.20	2.00	2.20	2.00	2.20	2.00	2.20	2.00	2.20	2.00	2.20
Up to 4 hrs	4.00	4.20	3.00	3.20	4.00	4.20	3.00	3.20	4.00	4.20	3.00	3.20
All Day	6.00	6.20	4.00	4.20	6.00	6.20	4.00	4.20	6.00	6.20	4.00	4.20
Forecast Impact	£ 91,755.56				£ 82,859.19				£ 68,941.28			
Total District	£ 243,556											

Scenario 3: Half Hour Free. There is often pressure on local authorities to provide a half-hour free tariff. As well as there being no clear evidence that half-hour free has any impact whatsoever to footfall or churn, it will cost money to implement and enforce and result in a net loss of income of around £328,885 per annum.

	East Grinstead				Haywards Heath				Burgess Hill			
	Short Stay		Long Stay		Short Stay		Long Stay		Short Stay		Long Stay	
Scenario: 1/2 hr Free	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
Up to 1/2 hour	0.80	0.00	0.80	0.00	0.80	0.00	0.80	0.00	0.80	0.00	0.80	0.00
Forecast Impact	-£ 72,153.88				-£ 161,477.33				-£ 95,253.47			
Total District	-£ 328,885											

3.9 Tariff Recommendations

We have considered the information available, national practice and our own experience to make recommendations which relate to conditions within Mid-Sussex. The final decision rests with the Council but, we believe there is a case as demonstrated in scenario 1, to raise tariffs to reflect the benchmarking and invest in the estate and to introduce differential tariffs within and between settlements.

Aim / Policy / Objective	Recommendation
Tariffs	Costs to the council of providing car parks have risen since 2009 and demand is high. In order to support the vitality of the town centres by managing demand and churn, and to invest in the estate there is a case for raising tariffs.
Tariff revision	Tariffs should be reviewed annually to reflect changes in the demand, costs and the changing settlements. This review should not necessarily result in any changes, and it could result in reductions as well as increases to charges. Whilst there is tendency to try and achieve 'round prices' these are no longer as important as they were since the advent of cashless parking.
Differential pricing	Introduce differential charging to better account for differences in settlements.
Season tickets	Revise Season ticket prices to better reflect local conditions and market rates, potentially their cost and availability through Travel Planning.
Evening and Sunday charges	There does not look to be enough demand to justify introducing charges but this could change quickly as the offer of the towns is improved through development and regeneration.
Blue Badge Parking	Whilst largely a political decision, the current policy may have to reviewed to take account of the new rules on criteria which is likely to increase the number of eligible users.
Larger Village car park	Introduce charging in some car parks within the larger villages on case-by-case basis to better manage them.

4. The Car park Estate

In order to reach some meaningful conclusions and recommendations regarding both the overall car park estate and for specific sites, we have combined site surveys and site condition observations from site visits. In turn, this leads to specific recommendations for individual sites, and for the estate across each settlement, and provides an overall picture to inform a wider strategy for the estate and its development. The work is presented on a settlement by settlement basis.

4.1 Survey Methodology

Whilst transaction data gives a good indication of usage, it does not account for compliance or for over-paying. The surveys provide robust data to give a detailed picture of the current car park usage, but further work may be required when major changes are proposed. Surveys were commissioned across thirty key parking sites controlled by Mid Sussex Council and took place in December 2019. The surveys were a mix of occupancy and length of stay. As well as providing an insight into specific car parks across the estate, the surveys provide an overview of current demand across the District.

December is not a neutral month, but it is useful to show the 'peak' demand. It would be possible to factor the surveys down based on transaction data (transaction data suggests a 3-4% increase in the usage of car parks close to retail during December) but it was not deemed necessary as the surveys largely confirmed what was known locally.

Occupancy surveys were recorded as follows:

- Surveys between 08:00 – 20:00;
- Start occupancy;
- Arrivals, Departures and Occupancy per hour;
- End occupancy recorded.

A reputable survey company undertook the surveys on Saturday 14 and Tuesday 21 December to a methodology approved by the Council. Length of stay surveys utilised ANPR camera technology whereby anonymised number plates were used to record the time in and out of vehicles, giving not only aggregate occupancy but also length of stay.

4.2 Future Demand Forecasting

We also carried out a forecasting exercise to provide an assessment of potential future demand up to 2029 using the Department for Transport's TEMPro traffic forecasting model⁷. TEMPro (Trip End Model Presentation Program) is the accepted industry standard for estimating traffic growth and is sponsored and maintained by the DfT and a consortium of the UK's leading transport consultancies. The model takes account of population, housing, employment and car ownership to forecast traffic and trips. The data sources include historical planning data and a large number of annual traffic surveys taken across the UK and the model is used for a wide range of applications including Transport Assessments and business cases for transport investment and is used for strategic transport planning modelling across the country.

Given the number of factors at play and the potential for significant change over the next ten years, no forecast can be relied upon to be entirely accurate. TEMPro is also calculated at the Middle Super Output Area level (MSOA) so the results for individual sites can only be viewed as a guide which demonstrates potential growth to inform the strategy with regards to future demand for off street parking.

⁷ TEMPRO, V72, 2019

We have selected those Middle Super Output Areas which the larger villages are in, or the majority of which cover the town boundaries. TEMPro Reports the following Growth Factors in the settlement.

Table 8: MSAOs selected in TEMPro

MSOA	Assigned to	Growth Factor: All purposes	
		Production	Attraction
E02006604	East Grinstead	1.1238	1.1058
E02006605	Copthorne	1.0835	1.0977
E02006606	East Grinstead	1.0964	1.0883
E02006607	East Grinstead	1.1059	1.0855
E02006608	Crawley Down	1.0921	1.0966
E02006609	Ardingly	1.0913	1.0952
E02006610	Balcombe	1.0956	1.0929
E02006611	Lindfield	1.1214	1.0951
E02006612	Haywards Heath	1.1179	1.1001
E02006613	Haywards Heath	1.1202	1.0909
E02006614	Cuckfield	1.1107	1.0973
E02006615	Burgess Hill	1.0904	1.0901
E02006616	Burgess Hill	1.1118	1.0912
E02006617	Burgess Hill	1.1237	1.0995
E02006618	Burgess Hill	1.1052	1.0925
E02006619	Hurstpierpoint	1.0889	1.0899
E02006620	Hassocks	1.1329	1.0994

An average for each town has been used as below:

Table 9: Growth rates selected for settlements

Town	Growth Factor (Attraction)
East Grinstead	1.0932
Burgess Hill	1.0933
Haywards Heath	1.0955
Hassocks	1.0994
Lindfield	1.0951
Hurstpierpoint	1.0899

5. Burgess Hill

As outlined in the Phase 1 report, Burgess Hill is due to experience significant growth and regeneration over the next decade. The parking estate is well used, but some sites show lower yields than might have been expected.

5.1 Current Demand

Current demand at Burgess Hill shows a mixed pattern of use, with Church Rd being full for much of the day, but with capacity in Cyprus Rd, which was indicated by the transaction data. The overall occupancy is over 80% for large parts of the day.

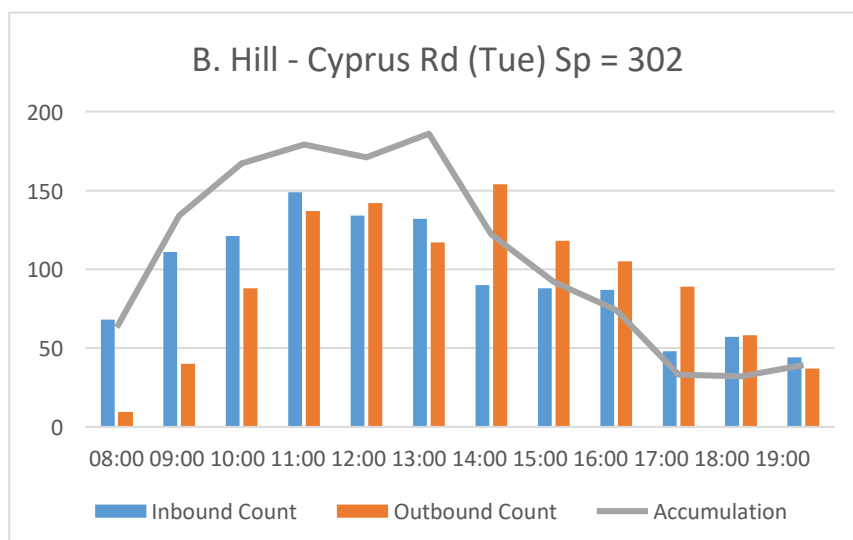
Table 10: Weekday Occupancy

	% Occupancy												2019
Site Name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Cyprus Road	21%	44%	55%	59%	57%	62%	40%	30%	25%	11%	11%	13%	
Church Road	61%	124%	115%	113%	126%	107%	102%	102%	70%	11%	13%	30%	
Station Road	55%	65%	74%	81%	78%	73%	95%	59%	39%	21%	9%	5%	
Queens Crescent	59%	76%	86%	95%	92%	95%	96%	88%	81%	63%	46%	33%	
St Johns Park	47%	80%	87%	77%	87%	83%	67%	53%	30%	47%	47%	47%	

Table 11: Saturday Occupancy

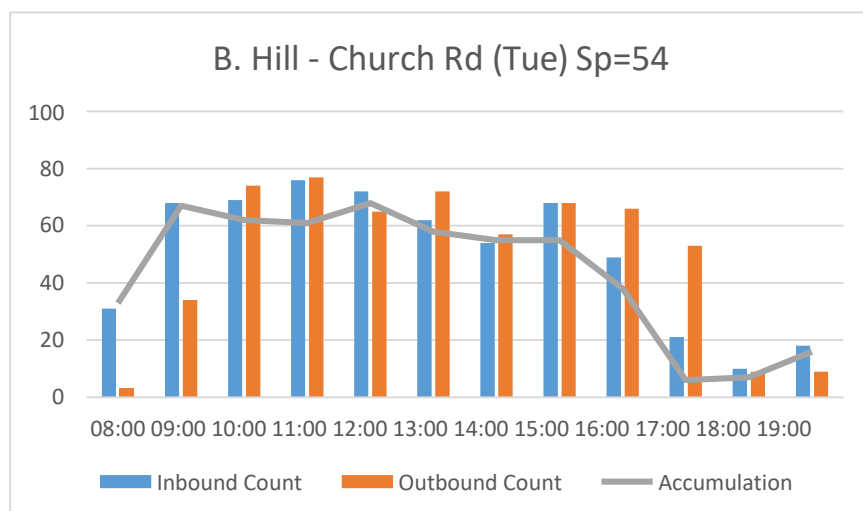
	% Occupancy												2019
Site name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Cyprus Road	19%	37%	66%	81%	72%	65%	70%	44%	18%	6%	6%	16%	
Church Road	63%	96%	111%	113%	119%	126%	122%	107%	67%	24%	22%	22%	
Station Road	16%	23%	33%	41%	36%	38%	31%	28%	23%	17%	14%	8%	
Queens Crescent	20%	35%	43%	45%	37%	41%	50%	39%	39%	40%	35%	37%	
St Johns Park	43%	50%	67%	53%	63%	57%	70%	53%	23%	27%	20%	20%	

Figure 6: Cyprus Rd.



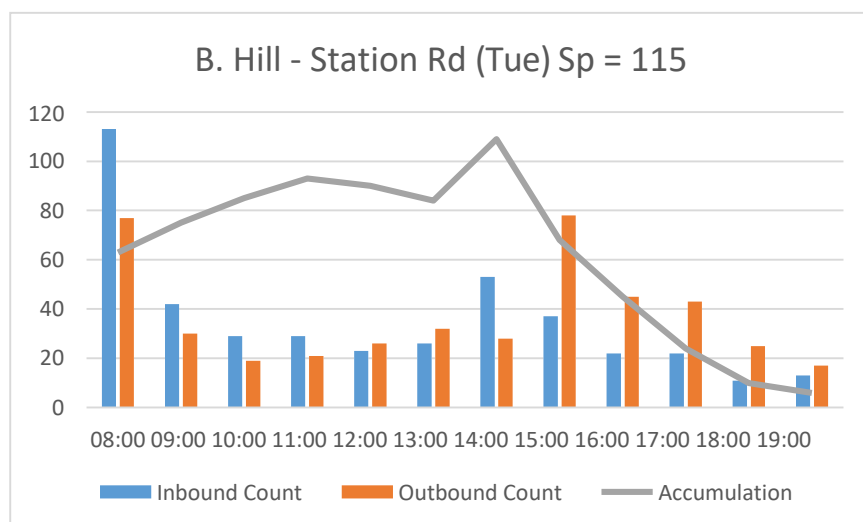
As the largest car park, Cyprus Rd may offer an opportunity for development or change. At present, the survey and transaction data alongside local knowledge all confirm that it does not get full. On Saturday occupancy peaked at 244 (81%) between 10:00 and 11:00.

Figure 7: Church Rd survey results



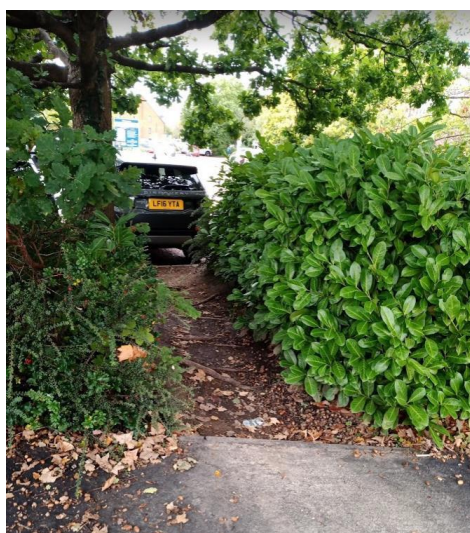
Church Rd is busy and full for much of the day. The over 100% capacity can be explained by the small size of the car park, a few vehicles waiting for a space or dropping off or picking up shows up as a disproportionately large percentage change. There was a slight problem with the location of the cameras which could not differentiate fully between the car park and nearby properties. A review of the footage, site visits and transaction data support the fact that this is a busy car park which is full for much of the day. The occupancy pattern supports the view that this is a shoppers' car park.

Figure 8: Station Rd survey results



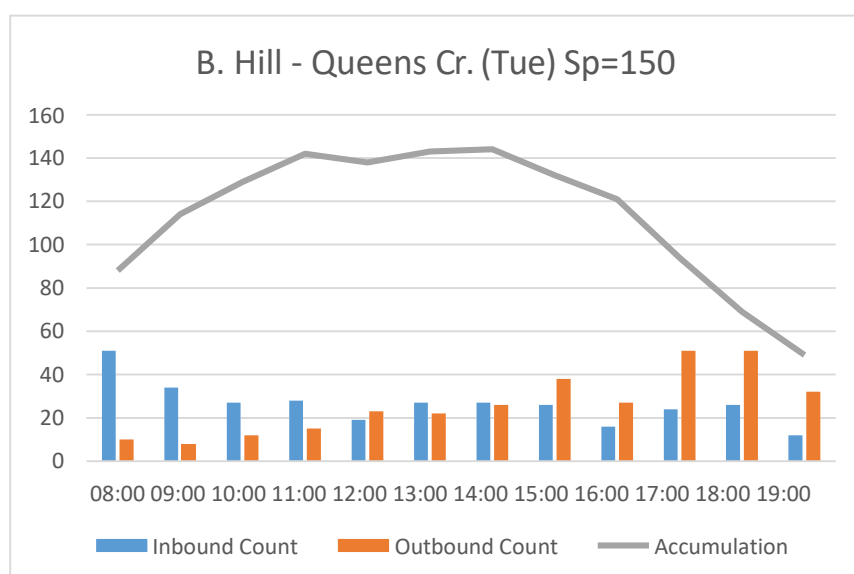
Station Rd is busy, exceeding 80% capacity for some of the day. The low yield and transactions are as a result of a high number of season tickets. There is a clear unmet pedestrian desire line leading from the western edge of the car park onto Station Rd through foliage.

Figure 9: Un-met pedestrian desire line at the western edge of the site



Queens Cres. is much fuller than the yield would suggest and is over 80% capacity from early morning into the evening. This is as a result of current charge combined with the long stays, which at £4 a day only yields a modest sum compared to frequent turnover of short stay vehicles at Church Rd. for example. The Saturday pattern is very similar although with a slightly later peak (11:00-12:00).

Figure 10: Queens Cres. survey results



The accumulation rate shown above confirms that Queens Crescent is used as a long stay commuters' car park where cars are parked for long periods of time (reflecting the transaction data). The Saturday pattern is similar, but with much-reduced usage.

St Johns Park is above 80% for part of the day and the accumulation line suggests long term parking (i.e. accumulation levels stay higher than entries/exits).

5.2 Future Demand

Burgess Hill requires special consideration as future development levels are more confidently known with a higher level of certainty. The potential impact on car park occupancy, or demand when the existing TEMPro growth factors are applied are shown below.

Figure 11: Potential demand when TEMPro growth factors are applied, weekday.

	% Occupancy											2029
Site Name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00
Cyprus Road	23%	49%	60%	65%	62%	67%	44%	33%	27%	12%	12%	14%
Church Road	67%	136%	126%	124%	138%	117%	111%	111%	77%	12%	14%	32%
Station Road	60%	71%	81%	88%	86%	80%	104%	65%	43%	23%	10%	6%
Queens Crescent	64%	83%	94%	103%	101%	104%	105%	96%	88%	69%	50%	36%
St Johns Park	51%	87%	95%	84%	95%	91%	73%	58%	33%	51%	51%	51%

As TEMPro uses a trajectory for future growth based on historical Planning data the TEMPro model may not adequately reflect the planned development in Burgess Hill specifically, which looks likely to go ahead in some form over the next ten years across the town.

We have included the Middle Super Output Area (MSAO) to the north of the current settlement, as this is where a large proportion of the growth will take place in the ‘Northern Arc’ (MSAO: E02006614). In order to model the additional growth from planning information, we have used households as a proxy for forecasting the demand per parking space. I.e. number of parking spaces occupied per household for six of the time periods. The additional households have then been added to the total demand. Whilst reasonably simple, this approach seems reasonable and at an appropriate level of detail for a strategy, avoiding additional costly bespoke modelling or primary data collection.

Table 12: Development included for Burgess Hill 2029 forecast

TEMPro Planning Data	Up to 2024	2024-29	Source
Households (2019 = 13576)	14,470	15,220	TEMPro
Northern Arc	1,311	1,000	Link
Keymer Tiles	475	-	Link
Kings Way	300	-	Link
Town Centre (New River)	-	142	Link
Additional Planned Houses	2,086	1,142	
Running Total	15,662	18,448	

Two sensitivity tests are also applied; a 5% and 10% modal shift to reflect the ambition of the Burgess Hill Place and Connectivity programme. The result of the additional work for the whole car park estate in 2029 is shown below, where:

- The 2019 baseline is the average occupancy in 2019 taken from survey results;
- The TEMPro figure is the figure ‘as is’ is applied;
- TEMPro + Planned is with the information from table factored in; and,
- The 5% and 10% mode shift sensitivity tests.

	(Weekday)	09:00	11:00	13:00	15:00	17:00	19:00
2019	2019 Baseline	65%	78%	78%	58%	29%	20%
2029	TEMPro	71%	85%	85%	64%	32%	24%
2029	TEMPro + Planned	87%	105%	105%	79%	39%	30%
2029	Mode Share -5%	83%	100%	100%	75%	37%	29%
2029	Mode Share -10%	75%	90%	90%	67%	34%	26%

5.3 Recommendations

The table below outlines some recommendations for the car park estate in Burgess Hill.

Site	Recommendation
Cyprus Rd.	As the town grows it looks likely that demand across the town will increase. Cyprus Rd is likely to be the main opportunity for an increase in capacity. Work could be undertaken to assess the feasibility of increasing supply through development, such as an additional 'deck'. The site is potentially large enough to justify pay on exit or ANPR ticketless payment which would increase dwell times and provide better information.
Church Rd.	Church Rd is currently defined as a short stay car park. A max stay of 4hrs could help to reinforce the sites' role as a short term shopper's car park and encourage longer stay visitors to park elsewhere.
Station Rd.	Yields are reasonably low because of season ticket charges. There is an unmet pedestrian desire line at the east of the site which should be formalised.
Queens Cres.	The car park is already full but yields are low, reflecting the price of all-day parking. Queens Cres. could provide for an opportunity for better integration with the railway station and multi-modal interchange.
St Johns Park.	There looks to be some commuter parking here. The unrestricted on-street parking around the site was also busy during site visits. In order to protect the park for park users, the 4hr max stay restriction should be retained.
Burgess Hill	The surveys and future potential demand work suggest that the overall level of parking should be protected and if possible, subject to feasibility, increased over the life of the strategy.

6. East Grinstead

Transaction data and local knowledge suggested that the car parks in East Grinstead are busy and effectively full for much of the day. The surveys have confirmed this.

6.1 Current Demand

Usage patterns show strong demand in the town centre car parks, all of which exceed 80% occupancy for much of the day, whilst there is some capacity in outlying car parks.

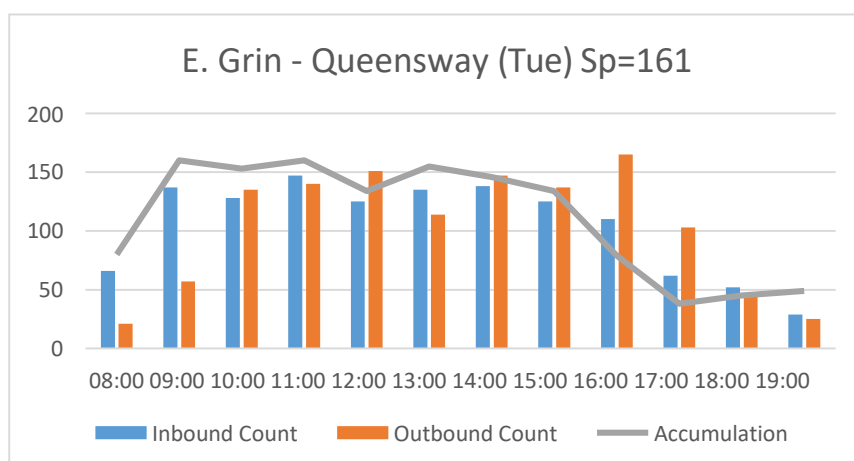
Figure 12: Weekday Occupancy

	% Occupancy												2019
Site Name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Queensway	50%	99%	95%	99%	83%	96%	91%	83%	49%	24%	28%	30%	
Kings Street	41%	78%	81%	78%	78%	83%	80%	75%	72%	77%	78%	81%	
Vicarage	42%	68%	81%	81%	79%	78%	75%	63%	51%	23%	31%	27%	
Railway Approach	49%	66%	72%	79%	78%	74%	71%	59%	59%	50%	37%	24%	
Norton House	71%	94%	87%	84%	87%	90%	89%	77%	61%	38%	89%	13%	
Chequer Mead	5%	23%	48%	73%	69%	88%	93%	29%	13%	11%	15%	21%	
Christopher Road	39%	55%	86%	91%	77%	66%	66%	73%	61%	59%	86%	75%	
Mount Noddy Car Park	28%	28%	49%	49%	44%	33%	21%	23%	21%	23%	21%	23%	

Figure 13: Saturday Occupancy

	% Occupancy												2019
Site name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Queensway	40%	78%	82%	90%	89%	97%	96%	83%	53%	31%	24%	20%	
Kings Street	71%	75%	78%	77%	78%	80%	83%	77%	72%	74%	71%	62%	
Vicarage	51%	73%	84%	76%	78%	75%	68%	64%	43%	29%	32%	34%	
Railway Approach	14%	30%	64%	49%	67%	62%	57%	49%	23%	12%	13%	14%	
Norton House	25%	34%	41%	42%	47%	57%	62%	61%	28%	47%	75%	59%	
Chequer Mead	7%	30%	88%	88%	86%	91%	86%	69%	60%	50%	45%	45%	
Christopher Road	64%	82%	77%	80%	75%	80%	66%	68%	68%	70%	64%	68%	
Mount Noddy Car Park	56%	85%	67%	10%	8%	0%	10%	10%	3%	5%	8%	8%	

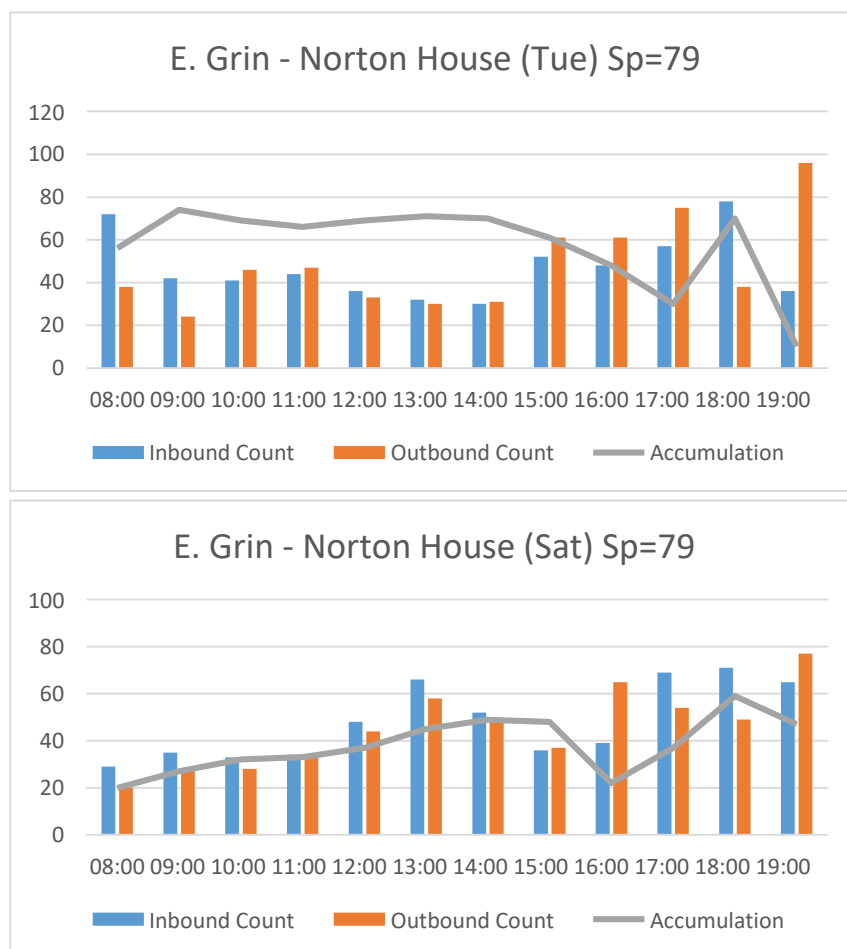
Figure 14: Queensway



Queensway is the largest and one of the most convenient car parks for the town centre. It was busy on both weekdays and Saturdays, exceeding 80% full for much of the day. At these levels, some customers would have been unable to find a space.

Kings Street, Vicarage and Chequer Mead were also busy.

Figure 15: Norton House



Norton House lies some way outside the main town centre. Profiles are different between Saturday and week days, with busier mornings and a longer stay on week days than on weekends. The site lies within employment areas which could account for the longer stays. Local knowledge also suggests that the car park is used as overflow for the adjacent supermarket and in fact, the usage patterns for the car park partially mirror the estimated busyness of the supermarket as estimated by Google Maps.

Mount Noddy is some way from the town centre and is designated for park use. The surveys suggest some overnight parking (i.e. busy from 08:00 and at 20:00) and some long-stay parking during the day, but the car park never comes close to being full. The Saturday survey shows a very busy period between 08:00 – 12:00 and very little activity for the rest of the day, potentially explained by dog walkers.

Railway Approach has a complicated regime with some residents parking only, some short stay with a max stay of 3hrs, long stay and season tickets.

6.2 Future Demand

The growth rate for East Grinstead within TEMPro seems reasonable given the lower level of growth outlined in the District Plan and has been applied to the current occupancy levels. Given the uncertainties around forecast modelling, they provide an appropriate estimate of the potential demand by the end of the strategy period.

Figure 16: Potential demand when TEMPro growth factors are applied, weekday.

	% Occupancy												2029
Site Name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Queensway	54%	109%	104%	109%	91%	105%	99%	91%	54%	26%	31%	33%	
Kings Street	44%	86%	89%	86%	86%	90%	87%	82%	79%	84%	86%	89%	
Vicarage	46%	75%	88%	89%	87%	85%	82%	69%	56%	26%	33%	30%	
Railway Approach	53%	72%	79%	86%	85%	81%	78%	64%	64%	55%	40%	27%	
Norton House	77%	102%	95%	91%	95%	98%	97%	84%	66%	42%	97%	14%	
Chequer Mead	5%	25%	52%	80%	76%	97%	101%	32%	14%	12%	16%	23%	
Christopher Road	42%	60%	94%	99%	84%	72%	72%	80%	67%	65%	94%	82%	
Mount Noddy Car Park	31%	31%	53%	53%	48%	36%	22%	25%	22%	25%	22%	25%	

East Grinstead is already busy and many of the car parks are close to or beyond an 80% occupancy for much of the day. This looks set to get more pronounced, with all car parks potentially busy by 2029 for at least some of the day with the exception of Mount Noddy. If possible, and subject to feasibility, new provision to take account of the growth of the town should be sought to support the vitality and activity of the town centre.

Site	Recommendation
Queensway	It looks likely that demand across the town will increase. Queensway is likely to be the main opportunity for an increase in capacity. Work could be undertaken to assess the feasibility of increasing supply through development, such as an additional 'deck'. The site is potentially large enough to justify pay on exit or ANPR ticketless payment which would benefit dwell times and provide better information.
King Street	This smaller and very busy car park should support shorter stays during the day. A max stay of 4hrs during peak times could support nearby shops and services, including the Cinema. Evening charges may be justifiable in the future if the car park becomes fuller in the evenings, an additional survey may be required.
Vicarage	Development of this busy car park is likely to be constrained because of adjacent residential properties. There are unmet pedestrian desire lines at the northeast end to link to the footpath.
Railway Approach	The car parks' complicated regime may need to be reviewed as demand grows. A mixed approach to management could make better use of the space at the times they are needed by different types of users,
Norton House	The site is constrained in development terms, but popular. No obvious changes present themselves.
Chequer Mead	The car park's current designation as short stay does not seem to reflect its location on the edge of the town centre. In order to discourage long-stay parking in other more central car parks, it could become a long stay. It is sited within a conservation zone which limits what can be done with it.
Christopher Road	This small car park is very busy. The impact of any max stay restrictions could adversely affect the adjacent Hotel. The Council could work with the Hotel to provide virtual permits to guests, with an appropriate charge.
Mount Noddy Car Park	There does not seem the need for any urgent changes to the regime at this site.
East Grinstead	Demand is already high and set to grow. If possible, and subject to feasibility, new provision to take account of the growth of the town should be sought to support the vitality and activity of the town centre.

7. Haywards Heath

As set out in the Phase 1 report Haywards Heath is set to see significant regeneration within the town centre as well as housing growth. Car parks are already busy.

7.1 Current Demand

Usage Surveys show strong demand for parking across the town centre during the week.

Figure 17: Tuesday Occupancy

	% Occupancy												2019
Site Name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Beech Hurst	41%	64%	77%	78%	88%	77%	67%	50%	38%	37%	37%	33%	
Orchards	31%	74%	97%	87%	83%	88%	96%	72%	37%	13%	8%	5%	
Hazelgrove	51%	82%	97%	92%	92%	89%	96%	74%	53%	17%	14%	14%	
Heath Road	62%	94%	99%	96%	95%	89%	78%	65%	47%	23%	22%	32%	
Haywards West	50%	96%	87%	88%	96%	87%	92%	85%	62%	33%	23%	23%	
Franklynn	23%	59%	79%	80%	55%	55%	75%	60%	35%	16%	25%	20%	
Muster Green Car Park	59%	66%	72%	62%	69%	66%	52%	52%	38%	21%	24%	48%	
Gower Road	57%	90%	90%	100%	71%	76%	81%	90%	90%	24%	0%	19%	
Haywards East	35%	84%	78%	86%	75%	78%	69%	80%	57%	37%	29%	53%	

Figure 18: Saturday Occupancy

	% Occupancy												2019
Site name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Beech Hurst	22%	36%	36%	33%	43%	54%	64%	99%	89%	83%	62%	23%	
Orchards	31%	81%	99%	93%	87%	94%	96%	86%	41%	8%	11%	22%	
Hazelgrove	51%	88%	93%	98%	88%	93%	96%	88%	42%	14%	9%	6%	
Heath Road	16%	26%	52%	48%	46%	42%	43%	33%	27%	28%	38%	54%	
Haywards West	33%	65%	87%	92%	79%	87%	98%	77%	44%	27%	27%	27%	
Franklynn	41%	91%	90%	85%	85%	84%	79%	64%	28%	14%	14%	15%	
Muster Green Car Park	21%	31%	38%	66%	66%	86%	66%	24%	31%	34%	48%	62%	
Gower Road	31%	49%	56%	55%	73%	59%	59%	28%	25%	23%	27%	41%	
Haywards East	52%	57%	61%	55%	64%	50%	59%	52%	50%	43%	50%	45%	

Figure 19: Gower Road – note through traffic

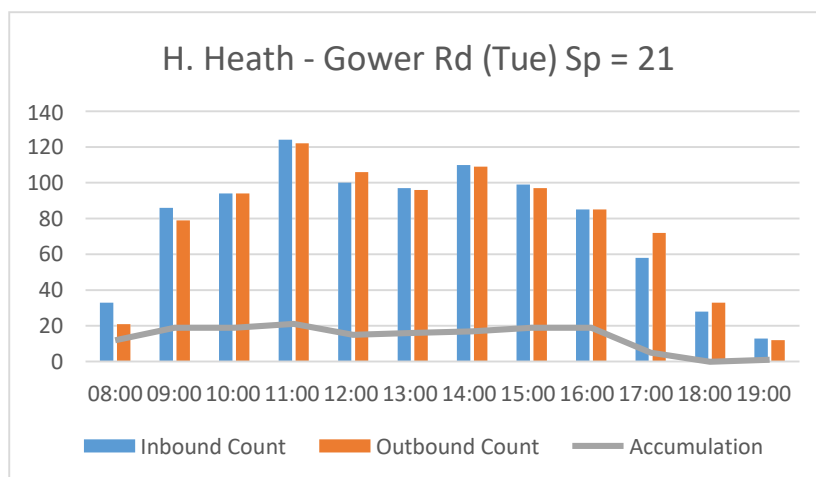
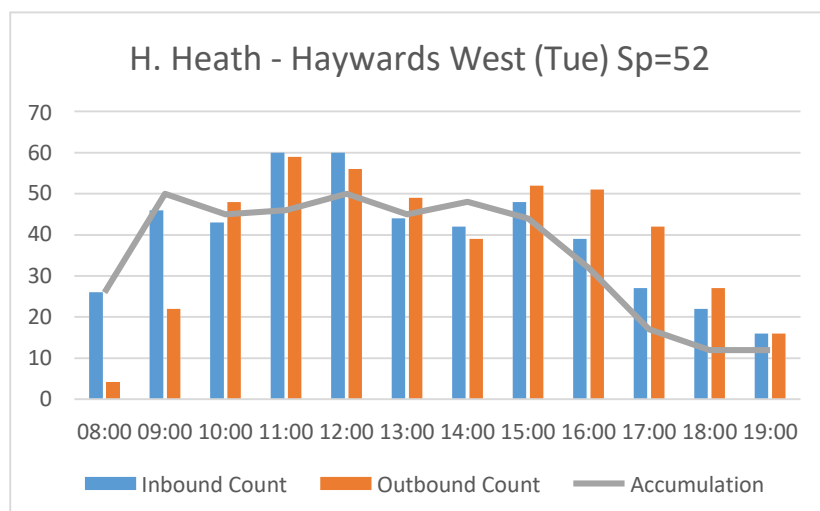


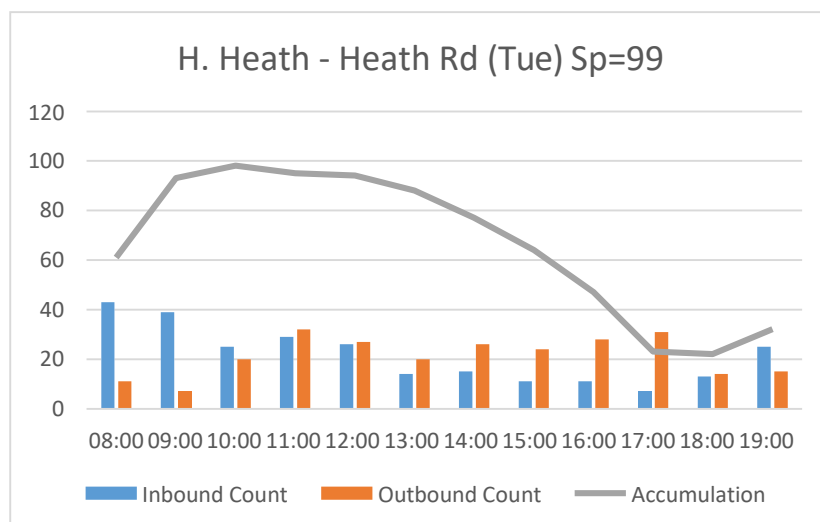
Figure 20: Haywards West



The three car parks south of South Road are very busy on a week day. Haywards West and Gower Rd were all above 80% occupancy for much of the day. Due to its nature, Haywards East is difficult to survey economically, but spot counts and site visits show this to be full at peak times as well.

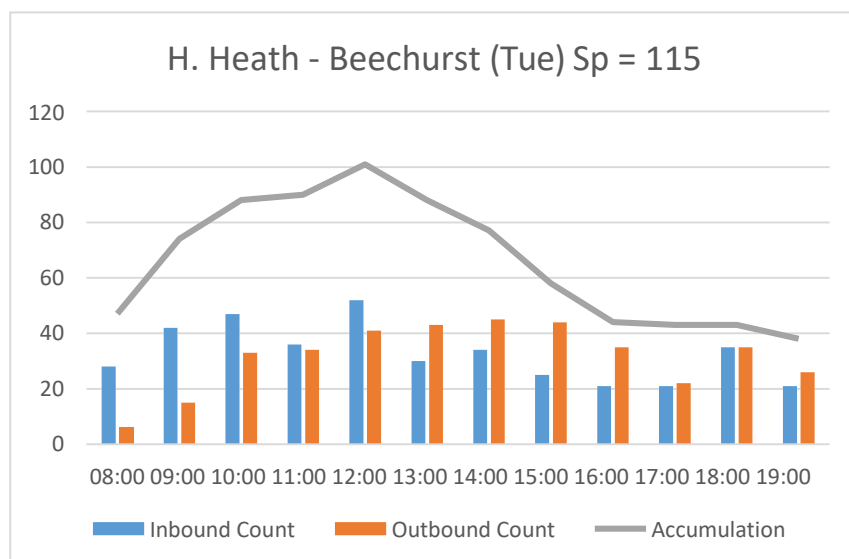
Gower Road sits on a through road, with 1,853 traffic movements recorded during the day. This level of occupancy suggests that many customers would have been unable to find a space and although difficult to confirm, might be travelling between sites to find somewhere to park. This may be generating car trips and contributing to congestion in this already busy part of the town.

Figure 21: Heath Rd



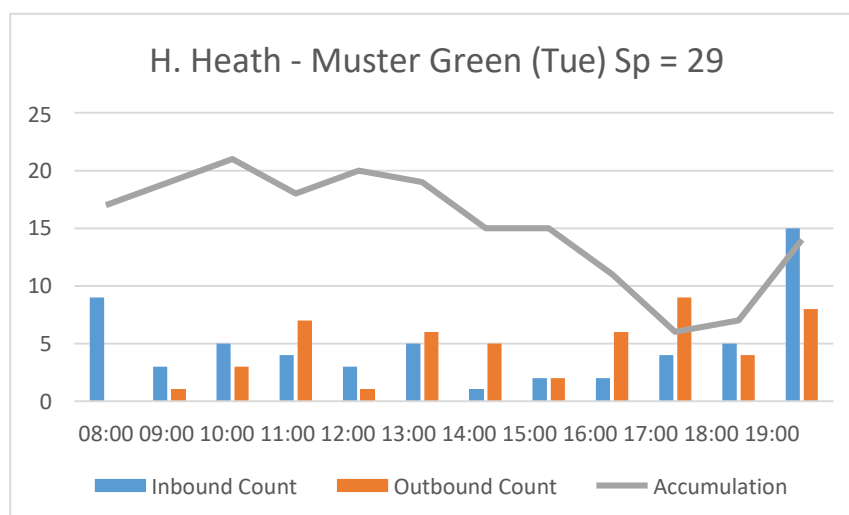
The Council increased the size of Heath Rd in 2018. The surveys suggest that the car park is full despite the increase in size.

Figure 22: Beech Hurst



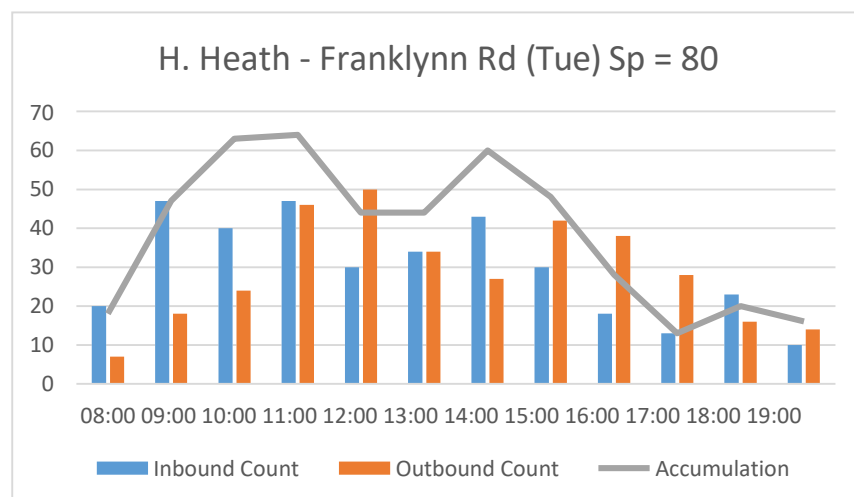
Beech Hurst serves the adjacent park and public house. There is some evidence of long-stay parking, probably from commuters working for nearby employers. As the car park gets close to 80% full, the regime may need to be re-evaluated. On Saturdays the occupancy pattern is reversed with a busy afternoon and evening, perhaps associated with park users and customers to the public house.

Figure 23: Muster Green



Muster Green is permit only (season tickets) Monday-Friday. At present, the number of season tickets is pegged to the number of spaces. The car park did not reach full capacity during the day although got close to 80% full around lunchtime. Stays seem to be a few hours at a time, with some overnight parking outside of restricted hours. The Saturday profile is more conventional in that it reflects retail opening hours.

Figure 24: Franklynn Rd



Franklynn Rd is busy throughout the day with medium stay lengths. There is a mix of pay and display and season ticket usage.

7.2 Future Demand

The growth rate for Haywards Heath within TEMPro seems reasonable given what is known about development and regeneration and has been applied to the current occupancy levels. Given the uncertainties around forecast modelling, they provide an appropriate estimate of the potential demand by the end of the strategy period.

Figure 25: Potential demand when TEMPro growth factors are applied, weekday.

	% Occupancy												2029
Site Name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Beech Hurst	45%	70%	84%	86%	96%	84%	73%	55%	42%	41%	41%	36%	
Orchards	34%	81%	107%	95%	91%	96%	106%	78%	41%	15%	9%	6%	
Hazelgrove	56%	90%	107%	100%	100%	97%	105%	81%	58%	19%	15%	16%	
Heath Road	68%	103%	108%	105%	104%	97%	85%	71%	52%	25%	24%	35%	
Haywards West	55%	105%	95%	97%	105%	95%	101%	93%	67%	36%	25%	25%	
Franklynn	25%	64%	86%	88%	60%	60%	82%	66%	38%	18%	27%	22%	
Muster Green Car Park	64%	72%	79%	68%	76%	72%	57%	57%	42%	23%	26%	53%	
Gower Road	63%	99%	99%	110%	78%	83%	89%	99%	99%	26%	0%	21%	
Haywards East	39%	92%	86%	95%	82%	86%	75%	88%	62%	41%	32%	58%	

The overall demand is currently high and looks set to increase over the course of the strategy. The emerging Haywards Heath Town Centre Masterplan seeks to improve the townscape and improve traffic circulation. The construction of a multi-level car park is mooted on the Hazelgrove and/ or the Orchards site to facilitate the planned improvements to the Orchards shopping centre.

Both Hazelgrove and the Orchards car parks seem to offer a reasonable opportunity for development. The issue with Hazelgrove is the smaller site size, as decked parking would be inefficient due to the space lost to circulation and ramps. If the building to the south of the site was removed, or designed into the new structure, that could make the site more viable. The Orchards, from a parking point of view, looks the simpler site to develop, with a size and shape that would make the construction of additional storeys possible. There are a number of options regarding site development, for example, an initial single 'deck' with strong foundations that would allow for additional decks to be added in the future. More information about decked car parks is provided in Appendix 1.

As discussed, the three smaller car parks to the south of South Road could be generating car trips and may be suitable for disposal; particularly if additional capacity can be provided at The Orchards or Hazelgrove. Haywards West seems fairly straightforward from a redevelopment point of view, although some consideration might need to be given to park users. Haywards East is also fairly straight forward; however, an in-situ sub-station could impact viability. Gower Road could be disposed of if HGV turning can be achieved, as the road running through the site is not adopted highway. Franklynn Road is busy and full according to the surveys. It looks to serve Sussex Road and is some distance from either Hazelgrove or the Orchards so should not necessarily be replaced by any development on those locations.

Any plan would require work considering the options to look at engineering, planning and business case feasibility. There are a number of options for construction method which will have impacts on cost and townscape (split level v flat slab - deck v permanent structure etc).

Site	Recommendation
Beech Hurst	This car park serves the nearby park and the public house. There is some evidence of all-day parking and the regime on this site should be kept under review.
The Orchards / Hazelgrove	It looks likely that demand across the town will increase. The Orchards and Hazelgrove are likely to be the main opportunities for an increase in capacity. Work needs to be undertaken to assess the feasibility of increasing supply through development, such as additional storeys.
Heath Rd	The car park provides long-stay parking and is busy at present.
Haywards West/ East & Gower Road	These small sites are very busy and potentially generating trips. Haywards East serves a small supermarket and the park, so provides the strongest case for retention.
Muster Green	There may be an argument for making this car park pay and display, although the individuals who currently enjoy good value guaranteed parking may resist change.
St Wilfrids	This is a highly constrained and very small site with limited potential for any change. It could come forward as part of a wider regeneration scheme.
(Clair Hall)	Although the car park was not in the scope for the study, if the site is proposed for regeneration, it would provide an opportunity to serve the northern part of the town centre and provide an income to the Council. As the Station car park is full on most workdays there appears to be demand for more parking in this area of town.
Haywards Heath	Demand is already high and set to grow. Any regeneration scheme should take this into account and seek opportunities to protect the overall level of parking , and subject to feasibility, for new and improved provision to support the vitality and health of the town centre.

8. Larger Village Car Parks

The 8 car parks in larger villages serving local centres vary greatly in terms of usage, function, location and size. There is currently no charge for any of them, although most have restrictions on max stays, including a max stay of 23hrs on a number of sites which is very difficult to effectively enforce and produce evidence for PCNs.

The Council's view of the role that these car parks should be playing in supporting these local centres needs to be considered. If they are to support the vitality of the retail and services within the centres then there is already a case to introduce maximum stays or charging, based on local situations, to improve management, cover maintenance costs and increase churn. In reality, a more nuanced approach is likely to be more appropriate as many also seem to support in-commuters to schools, surgeries and local services for example.

The occupancy of the larger village car parks is shown below.

Figure 26: Larger Villages, Current Occupancy

	% Occupancy												2019
Site Name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Cuckfield - Broad Street	50%	63%	68%	93%	88%	95%	93%	75%	63%	23%	23%	46%	
Hurst. Trinity Road	86%	83%	84%	81%	84%	87%	90%	51%	47%	42%	31%	61%	
Hurst. Brown Twins	95%	95%	98%	91%	100%	107%	95%	77%	77%	64%	66%	68%	
Hassocks - Orion	28%	55%	62%	73%	80%	78%	98%	65%	47%	47%	25%	27%	
Hassocks - Dale Avenue	81%	80%	80%	80%	77%	81%	84%	82%	77%	66%	68%	70%	
Lindfield - Tollgate	86%	77%	77%	60%	69%	89%	91%	86%	66%	46%	37%	46%	
Lindfield - Denmans Lane	75%	89%	93%	75%	82%	96%	93%	71%	75%	54%	61%	57%	
Ardingly - Street Lane	17%	21%	25%	42%	29%	25%	29%	17%	29%	33%	42%	33%	

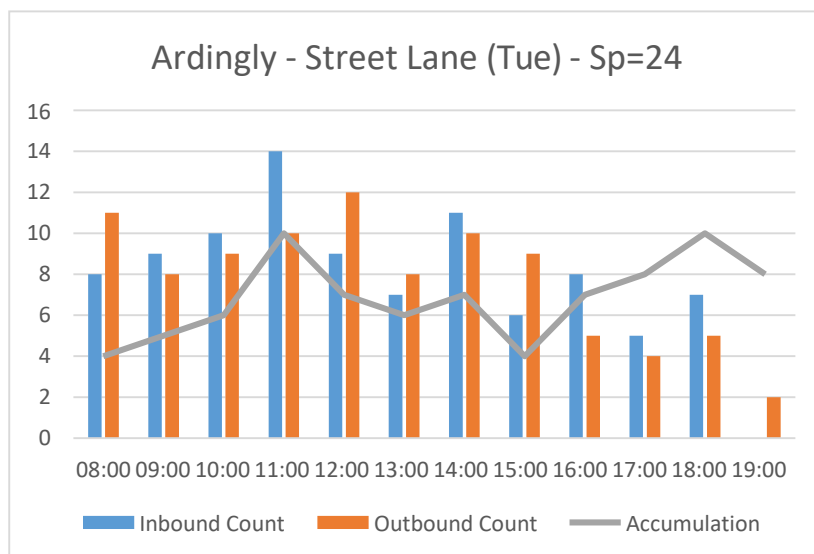
It needs to be kept in mind that TEMPro is a strategic model, that works at the MSOA level and not intended to predict individual sites. The figures do however give some indication of the sort of increase in demand that could be seen across the car parks. In all cases, an increase is forecast and this tips a number of the car parks over the 80% level or beyond 100%, strengthening the case for change.

Figure 27: Larger Villages, potential demand when TEMPro growth factors are applied

	% Occupancy												2029
Site Name	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Cuckfield - Broad Street	55%	69%	74%	102%	96%	104%	102%	82%	69%	25%	25%	51%	
Hurst. Trinity Road	94%	90%	92%	88%	92%	95%	98%	56%	51%	46%	33%	67%	
Hurst. Brown Twins	104%	104%	107%	99%	109%	116%	104%	84%	84%	69%	72%	74%	
Hassocks - Orion	31%	60%	68%	81%	88%	86%	108%	71%	51%	51%	27%	29%	
Hassocks - Dale Avenue	89%	88%	88%	88%	85%	89%	92%	91%	85%	73%	74%	77%	
Lindfield - Tollgate	94%	84%	84%	66%	75%	97%	100%	94%	72%	50%	41%	50%	
Lindfield - Denmans Lane	82%	98%	102%	82%	90%	106%	102%	78%	82%	59%	66%	63%	
Ardingly - Street Lane	18%	23%	27%	46%	32%	27%	32%	18%	32%	37%	46%	37%	

8.1 Ardingly

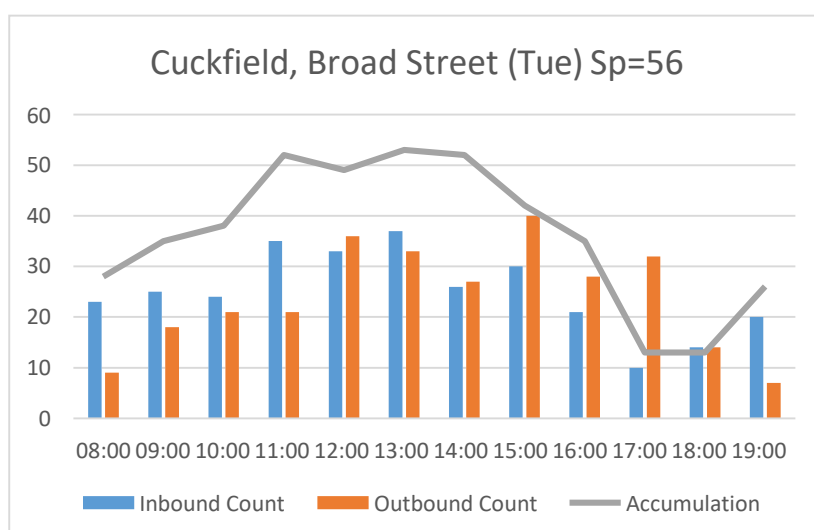
Ardingly, although not a tier 2 settlement has a single District-controlled car park in the centre of the village. The village offers a lower tier of shops and services including a baker, public house, café and hairdressing salon.

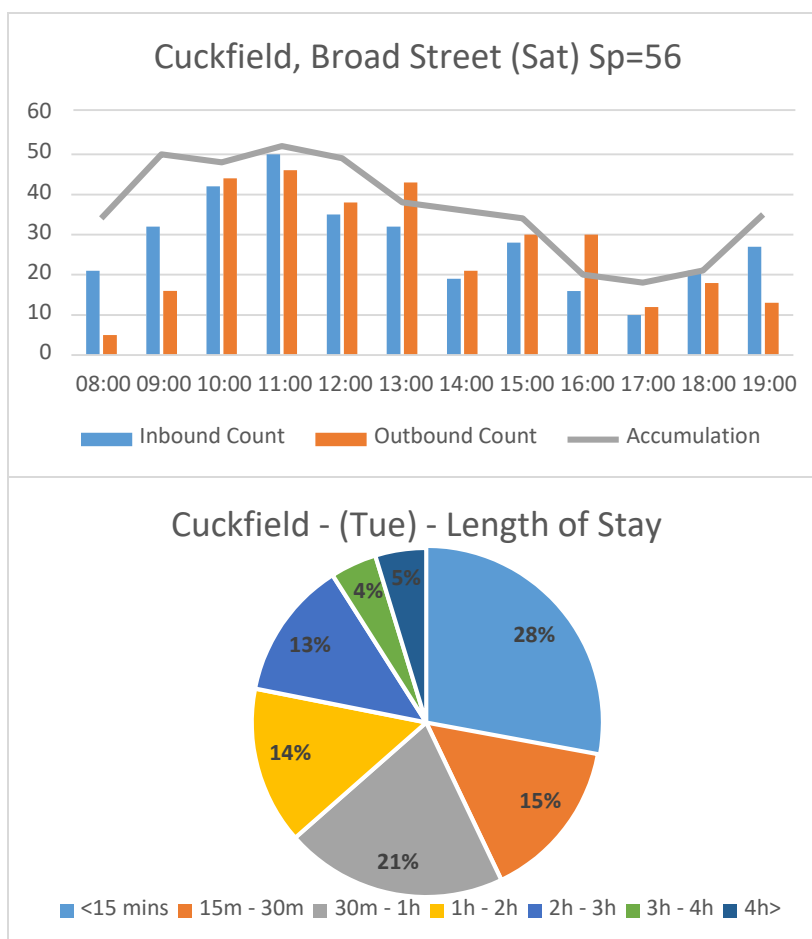


Street Lane is reasonably busy with an accumulation rate that suggests a mix of longer and shorter stays and overnight parking. There is unrestricted parking on-street around the site. There does not appear to be a strong case for any change to the regime in this case. The situation should be kept under review, with information from residents and ward councillors, and- if required- further surveys used to inform any change.

8.2 Cuckfield

Cuckfield is a vibrant larger village with a range of shops, services and smaller businesses. The survey cameras had a clear view of the car park, so there was no issue with the data when the footage was checked.



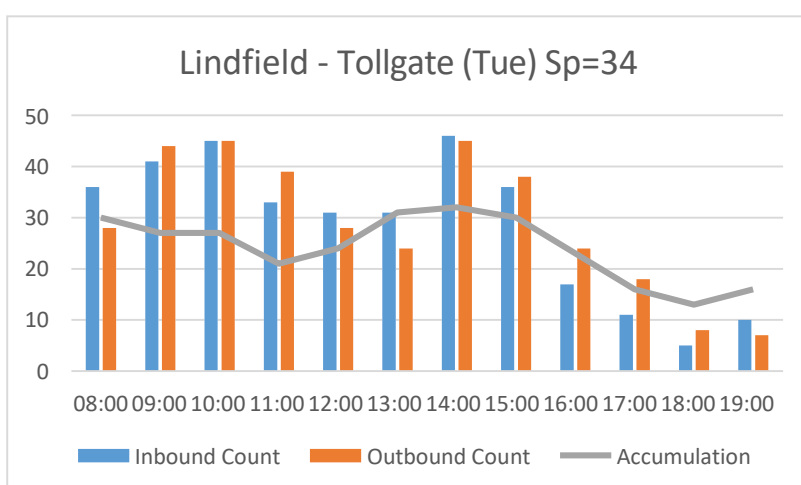


Broad Street Car Park is very busy and over 80%+ full for much of the day on weekdays and Saturdays. The high number of cars registering as staying for 15mins or less appears to be a mix of dropping off and people simply being unable to find a space and leaving the car park to find alternative parking. Whilst 3hrs+ is a small proportion, only 22 spaces allow this. Footage shows overnight parking and confirms that the long stay section is full by around 08:30, with capacity in short-stay until mid- morning.

8.3 Lindfield

Lindfield includes some comparative retail including boutiques, independent butchers, a wine merchant and antiques shop. It also includes the Lindfield Medical Centre which uses Tollgate as its car park.

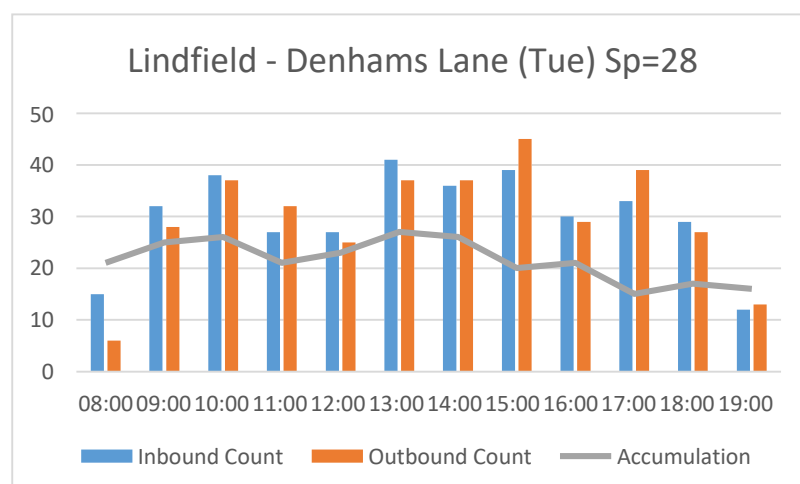
Figure 28: Tollgate



Tollgate includes an additional 4 spaces marked for 'Doctors' and 7 spaces marked as 'Reserved for Flats', split across 4 regular spaces and 3 in a bay. There are also 8 permits given to the Medical Centre which will reduce the capacity depending on usage. Tollgate is effectively full for most of the day. Accumulation rates

suggest shorter and 2-3 hr stays as well as some overnight parking. If the objective of the car park is to support the village centre, then there is a clear case for change but the role the car park plays in supporting the medical centre cannot be ignored. Staff at the medical centre could be encouraged, if they are staying there all day to park further away; for example, at the Wilderness car park which is about a 5-minute walk. The residents' parking spaces could also be made available to other users during the day. A reasonable tariff could be introduced to manage demand and encourage turnover.

Figure 29: Denhams Lane



Similarly to Tollgate, Denhams Lane is very busy for much of the day. Accumulation rates suggest a mix of stays and overnight parking. The simplest way to manage demand and encourage turnover would be to introduce a reasonable tariff given the vitality and quality of the offer in the village centre. The Wilderness car park offers an alternative for those who insist on not paying.

8.4 Hassocks

Hassocks has a train station on the London to Brighton mainline. The village also has a range of mainly convenience shops and services. The two car parks in the village are notable for being absolutely opposite in their usage patterns, with Orion having some of the shortest stays in the District and Avenue seemingly dominated by long-stay and overnight parking.

Figure 30: Orion

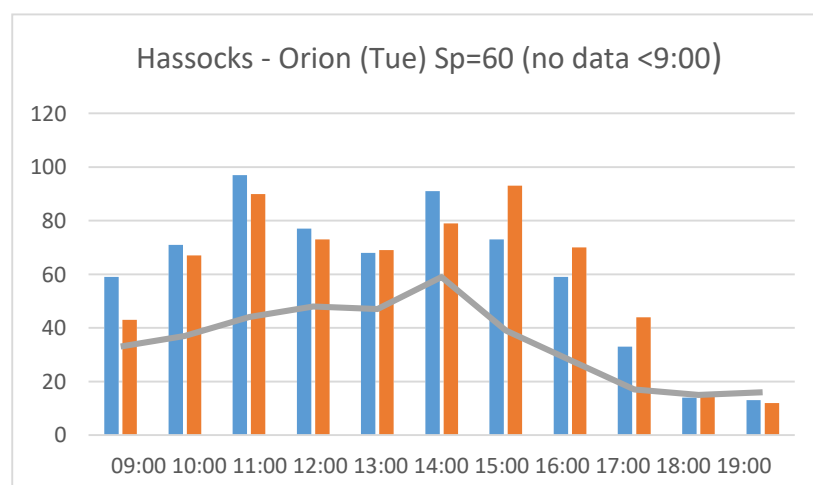


Figure 31: Orion, Length of Stay

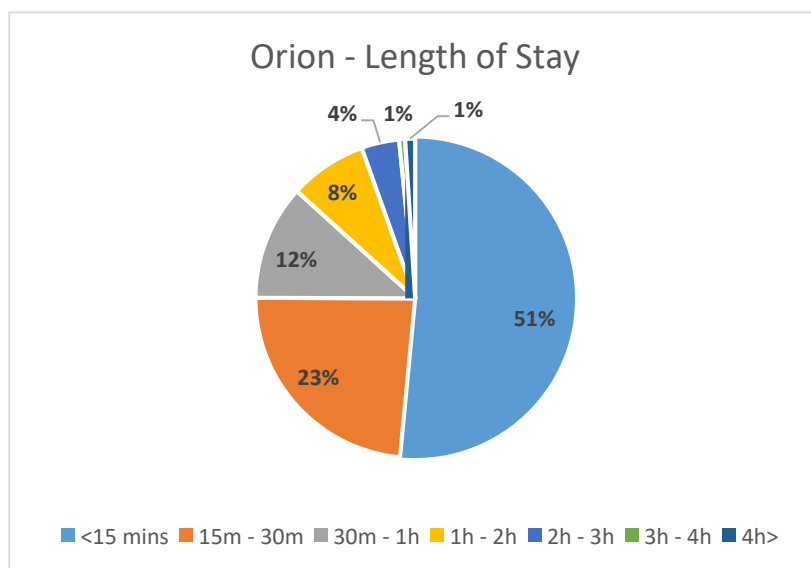
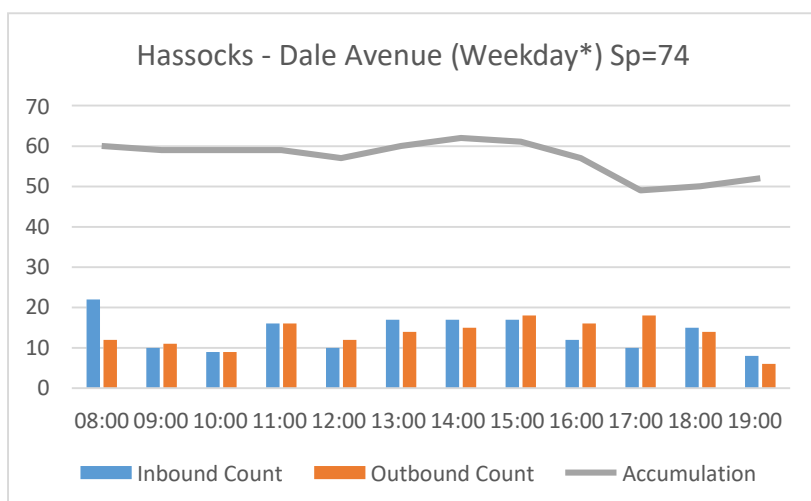


Figure 32: Dale Avenue

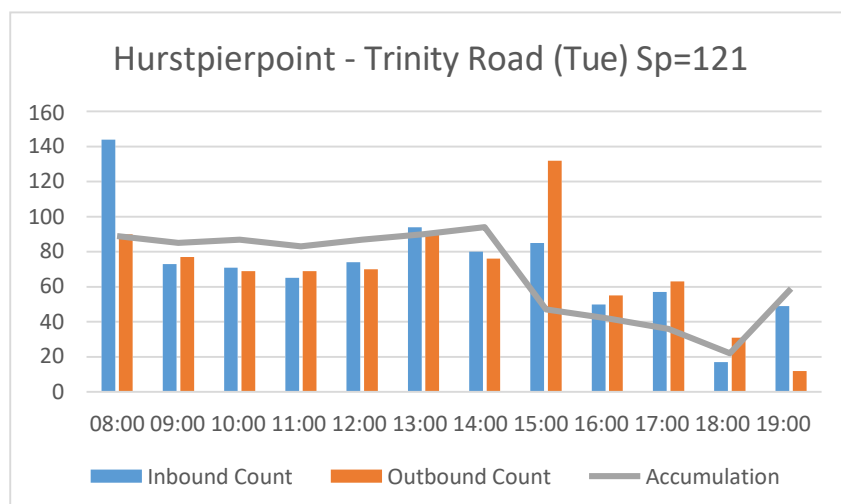


A further site visit took place in early February to confirm the survey results and this confirmed that Dale Avenue already included 60 cars at 08:00. Around 60% of them had frosted windows, suggesting they had been there overnight. What appeared to be railway commuters were observed parking and walking in the direction of the station. It seems likely that Dale Avenue is being used by residents and commuters, and the accumulation figures confirm long stays and very little churn. If the role of this car park is to support the village centre, then a change in the regime is required. The simplest way to do this would be to introduce charging for stays over a certain time limit, say over 3hrs as the current restriction (23hrs max stay) is practically unenforceable. In Orion, stays are short, this could relate to drop-off and pick-up as well as there being a route through the site. Disc parking is generally considered to be inconvenient for users, and again a reasonable charge could be introduced to manage churn and for better management given how full the car park gets at peaktimes.

8.5 Hurstpierpoint

The two car parks in Hurstpierpoint are very different in terms of their characteristics. Both were the subject of a further site visit in February and raw camera footage was reviewed to confirm the surveys.

Figure 33: Trinity Rd



Trinity Road usage shows a mix of long-stay and short-stay, with long-stay over 80% full from early in the morning. Observations confirmed that the short stay was heavily used as drop-off and pick-up for the school opposite with few cars parked between 08:00 – 09:00. Recommendations are hard to make, and any future changes would depend upon the role the Council wants the car park to play in the local area. If it is to support the village centre, then the simplest action would be to introduce appropriate charges to manage demand. However, given how important the car park looks to be in supporting the school, library and fire station this may also be a consideration. However, there would still be an argument for charging to improve management, cover maintenance costs and manage demand.

Figure 34: Brown Twins

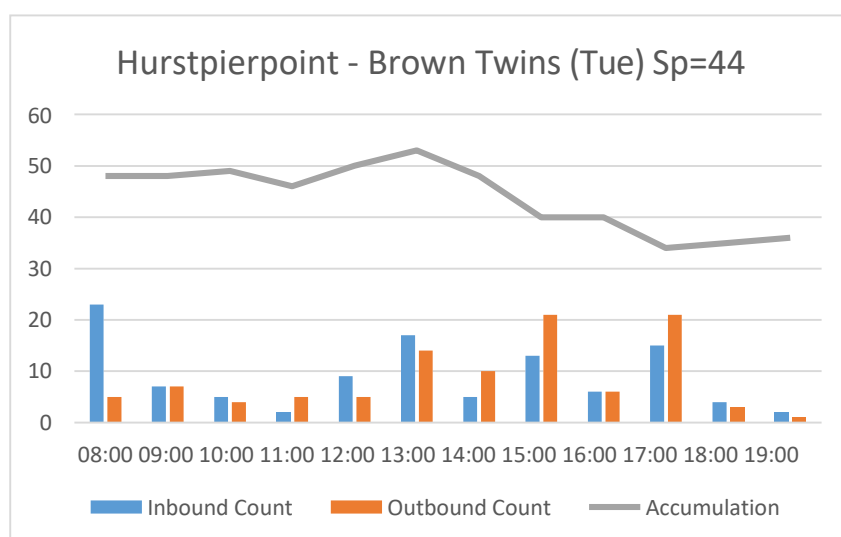
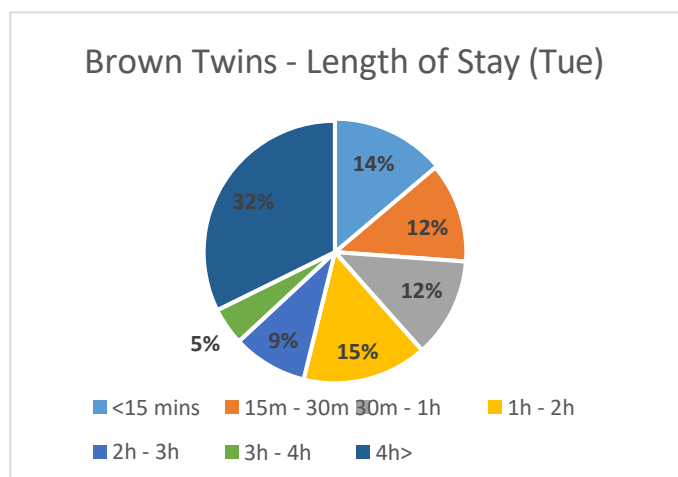


Figure 35: Brown Twins, Length of Stay



Brown twins has one of the lowest turnover rates of any car park in the District with what looks to be mainly residential parking. Given its proximity to the High Street shops, there is a clear case for change if its role is to support the high street. A max stay or reasonable charges would help to manage long and short stay demand.

8.6 Recommendations

The Council needs to consider what role it wants these sites to play, and a case-by-case basis approach would allow for flexibility. The data and surveys can only help in this decision-making process, and it will be for the Council to decide what regime is appropriate. Based on our experience elsewhere and national trends the simplest way of managing demand, increasing churn, and justifying maintenance and enforcement would be to introduce reasonable charging regimes.

Site	Recommendation
Cuckfield	Case for change appears strong given the fullness of car park and reasonably low churn. The simplest method would be to introduce charging for stays over a certain period
Hurstpierpoint	Both car parks are busy. Brown Twins has a very low turnover. If its role is to serve the High Street, there is a case for change to increase churn and space availability. Trinity Road may require a more nuanced approach, but managing parking demand and trying to satisfy the needs of different users could be done by introducing reasonable charging especially if there is an intensification of any nearby uses, for example, a school extension. Paper disc systems are inconvenient for new visitors to the area and require management.
Hassocks	Paper disc systems are inconvenient for new visitors to the area and require management, that said Orion is functioning well. Dale Avenue has low turnover and appears to be used primarily by commuters and residents as opposed to visitors to the village centre. A simple charging regime for longer stays would manage this.
Lindfield	The two small sites close to the village centre are very busy and demand could be managed through a reasonable charging regime. Longer stay customers could be encouraged to park in the Wilderness given the short walk to the village centre to free up space for short-stay visitors. The Wilderness is highly constrained and no obvious alternative use has presented itself.
Ardingly	The car park appears to function well, but the situation should be kept under review.
Larger Villages	Demand is different across and within the larger villages. There is a case to support village economies and from a maintenance and management point of view to introduce reasonable charging regimes and/or new restrictions on waiting lengths on a case-by-case basis.

9. Service Management

The Council's car parks are operated using pay and display on all sites where charges are made. All pay and display machines accept cashless payments by card with a contactless option.

As pay and display systems require payment on arrival, users are required to predict their length of stay. Many town and city retailers throughout the country have expressed concern regarding the inflexibility of this system and that it impacts visitor dwell times. For example, in 2017 the City of York Council and the York Business Improvement District (BID) commissioned customer research on parking preferences. One of the key findings was that 67% of respondents expressed a preference for "pay on exit" systems as they were not certain of their length of stay upon arrival.

The existing pay and display machines also provide limited data (effectively the time and amount of each payment). This limits the Council's ability to analyse usage and occupancy patterns on its car parks.

Another payment option at all the car parks is payment by phone (via MSDC's supplier MiPermit). Unlike some other providers, MiPermit does not require a user to register with the pay by phone provider. The payment of a small convenience fee in addition to the tariff due is levied on the customer. There is an option to receive reminder texts (alerting the customer when the parking session is about to expire) at an additional cost. The customer is also able to extend the parking period (subject to any length of stay restrictions) via an app.

There is currently minimal opportunity to connect car park users with local businesses due to the limitations of the current equipment and payment systems. New technology would allow Enforcement and Back Office functions to be delivered more intelligently and efficiently enabling management to focus resources where compliance levels are low.

Season tickets are available in some car parks, which allow parking Monday to Saturday, a space is effectively guaranteed with some moderate over-selling, which is monitored closely by MSDC.

On-line application for season tickets is available on the Council's website. Penalties incurred in car parks can be paid online via the website but virtual payment for season tickets is not currently possible.

The Council's website contains information on the car parks in the District including location, number of spaces, tariffs and opening hours although navigating the website to gather this information for each car park is not straightforward.

9.1 Enforcement and Compliance Management

An in-depth review of the current on-street compliance management system is being carried out by West Sussex County Council which will report in detail regarding the on-street and back-office performance of MSDC. There is limited value in repeating that ongoing work and there is a risk that the conclusions will conflict. Appendix 2 outlines some potential responses if the on-street CPE function is removed from MSDC. We have considered the off-street functions in this section, although disaggregating on and off-street operations is not an easy task.

The Phase 1 report outlines MSDC's responsibilities regarding the management of on and off-street parking compliance throughout the District. As well as the off-street car parks, there are approximately a total of:

- 112 charged- for on-street spaces
- 1122 free limited- waiting spaces;

- 785 residents' parking spaces;
- 171 shared residents' / charged spaces;
- 110 specific vehicle bays;
- Giving a total of 2,317 on-street parking spaces.

There are a total of 44 off-street car parks covered under off-street orders. A total of 4,381 off street PCNs were issued between 01/04/2018 and 31/03/2019 as taken from the Chipside back-office system. Of these:

- 3,249 were paid in full, with about 61% paid at a discount
- 902 were cancelled for the following reasons:
 - 18 issued in error;
 - 38 issued with mistakes and then re-issued correctly;
 - 842 were cancelled due to mitigating circumstances (for e.g. machines were inoperable, free limited waiting spaces, valid ticket, valid blue badge);
 - With the remainder written off for a variety of reasons for e.g. no DVLA trace, stolen car, bankruptcy and death.

The administration of the life-cycle of both on and off-street PCNs is undertaken by an in-house team of 4 FTE officers co-located in a single space. These officers are also responsible for permit administration, printing and posting of outgoing correspondence and telephone enquiries. There are 12 FTE equivalent CEO posts (with one current vacancy) alongside 2 seniors and an operations manager. CEOs are deployed 8am – 6pm Monday – Saturday. Sundays are currently worked on an occasional overtime basis, usually once a month. 3 teams working 4 days out of 6 over a 3-week rota pattern. MSDC aims to have 4 teams covering each town and then a north/south rural coverage. The CPZ in East Grinstead is the priority for enforcement. This is based on minimum deployment patterns and then uplifted to respond to reactive enforcement plus assistance with school crossing patrol programme.

The contract with WSCC is on a 70/30 on and off-street basis, so to calculate productivity rates the figure of 4.33 FTEs has been used. Due to the low numbers, it is considered more efficient to retain these elements of the service in-house rather than outsourcing.

The below statistics provide some indication of how the service is performing. The data has been collated primarily from information provided by the Chipside back office system and compared to our own benchmarking information retained from previous work with other council operators.

Table 13: Key service delivery benchmarks

PCN Statistical Benchmarks – Off Street Only	MSDC	Average
Discount recovery rates	61%	62%
Overall recovery rates	75%	75%
Compliance Levels	Not measured	85% - 90%
Cancelled CEO error	0.41%	0.5%
CEO productivity	1.4	0.8
Cancellation (not including write off) %	20%	14%
% of PCNs challenged	17%	21%
% Appeal to adjudicator (inc. on-street)	0.18%	0.24%
% Appeal cases lost (inc. on-street)	77%	56%

The discount recovery rates relate to the number of PCNs paid at the discounted rate, and suggests that PCNs were correctly issued. This is comparable to the average rate. The overall recovery rate is the sum of issued PCNs and the rate of payments v write-offs and cancellations for unusual circumstances (such as stolen cars, no DVLA trace and non-recoverable debt). This is comparable to the average. The CEO error rate includes only those issued in error, not those issued and then re-issued correctly. Again, this is comparable to the average.

The CEO productivity rate relates to PCNs issued, per CEO, per space over the year. The CEOs productivity rate for MSDC is high compared to other similar authorities; this can often indicate that the level of deployment is not sufficient, but in this case may relate to a reactively deployed team which knows it's territory well.

Shift patterns cover the core restriction hours and unusually the number deployed on a Saturday is of the same level as the busier days of the week. We regularly come across deployment models where the number of CEOs deployed on a Saturday is almost halved.

PCN cancellation rates include those cancelled citing mitigating circumstances such as being broken down or having a valid ticket or permit at the time of the PCN issue. The latter of these is high, with 249 cancellations for "having a valid disc" and a further 307 for "having a valid ticket". Disc parking is hard to enforce. It may well be that 'disc tampering' is taking place but that MSDC cannot provide sufficient evidence to prosecute, as visits to disc car parks are spaced too far apart to prove that a vehicle has overstayed and not left and returned. This reinforces the recommendation that disc parking is removed. With regards to having a valid ticket, discussions with MSDC reveal it is as simple as tickets falling off dashboards. As long as the customer can produce the ticket (and therefore demonstrate an intention to pay), the PCN is cancelled on first occasion.

The overall level of PCNs cancelled is only 17% which compares well to our information on the average level. Finally, the number of cases that went to the adjudicator is lower than average, but the number of cases lost is slightly higher, however as the numbers in absolute terms are only 26 for the whole year that is potentially just 1 or 2 single cases and so not statistically representative.

The table below illustrates common issues we find are experienced by parking teams in two tier authority areas and compares that with the MSDC position.

Table 14: Common issues of two-tier parking teams

	Common issues	MSDC Position
Strategic direction – no Parking Manager in Place	Either through a long-term vacancy, restructure, or abolishment of the post there is no Parking Manager to oversee and strategically lead the parking team. This can lead to a lack of strategic direction, poor staff management, inefficient services and symptoms such as high staff turnover and PCN cancellation rates.	MSDC has a Parking Manager in place with a sufficient level of authority and resources to strategically lead the team and the service. This will provide direction and ownership as the council deliver change going forward.
Team Resources and Resilience	Many smaller local authorities have cut parking teams which means maintaining resilience can be difficult. This is especially the case where a lack of investment in technology, systems and equipment has left the service labour intensive. In addition, the way in which the service resources are split can work ineffectively leading to a lack of ownership and no management capacity to put right.	The MSDC team is well resourced and benefits from a dedicated Parking Manager as well as very knowledgeable specialist team leaders. Resilience is built into the team set-up e.g. three back-office officers share duties which allow full coverage in normal office hours covering breaks and absences.
High staff turnover and long term vacancies	High staff turnover is symptomatic of poor strategic direction and team management. It is costly, both in recruitment and training costs, or worse still, vacancies aren't filled resulting in poor customer service, mistakes, and inefficiencies	The team is well resourced and virtually fully staffed
Lack of specialism with regards PCN, issues, appeals and cancellations	Specialised parking enforcement function such as PCN processing is a highly regulated process which requires a group of staff dealing with each distinct area of the processing function. Many	MSDC currently employs a senior officer with very good knowledge of the system and regulatory environment. MSDC may not be able to justify this resource in the

	smaller authorities 'get by' with one or two officers who have learnt but this leads to high PCN cancellation rates.	future if WSCC did not delegate the on-street enforcement functions to them and the Council may then have to pool resources with other authorities to retain compliant levels of expertise and provide resilience for the service.
High PCN cancellation rates	A high proportion of PCNs cancelled would suggest that there are issues with PCN issuing or the management of the penalty processing system. There are often problems between systems, for example, a computability issue between mobile payment providers and the Council's permit management software which would result in CEOs having to search for a vehicle's details in two data sources to establish whether the owner has paid to park.	PCN cancellation rates are a little higher than average but can be explained because of parking disc systems
Manual deployment of CEOs which is based on local knowledge or historical patterns as opposed to targeted action in areas of known non-compliance	CEO's are manually deployed according to a rota, and enforcement resources are not focused intelligently to locations where compliance rates are a known issue. Intelligent data-led enforcement would result in an increase in compliance coupled with a reduction in operational costs.	Current technology would not reasonably allow for the more intelligent deployment of CEOs. PCN issue rates are high and deployment is already reactive.

Recommendations are set out below. The relatively modest number relates to the clear strategic direction and adequate resources that the service currently enjoys.

Site	Recommendation
Team	MSDC can do very little in this regard until the outcome of the County's CPE review is known.
Strategic direction	MSDC may wish to consider setting up a delivery group to oversee and manage the changes recommended by the wider strategy. The Parking Manager will be crucial in implementing the strategy and improving performance and already appears to champion parking within the Council, with the support of members of the senior management team.
PCN cancellation rates	Moving from a disc parking management regime in those places that still use it would decrease cancellation rates. Utilising pay-on-exit and paperless ticketing would also reduce this, but the estate is not suited to these methods at present.

9.2 Equipment and Contracts

MSDC is responsible for providing the associated equipment and processes necessary to operate the service, including pay and display machines (and maintenance), cashless parking service, provision of permits, off street parking place orders, consultations, notice processing operation and the issuing and processing parking software.

The current contracts and requirements with MSDC are summarised below in Table 1 below.

Table 15 - Summary of parking service contracts

Contract	Requirements	Service Provider
Compliance Management	CEO employment/deployment, first-line machine maintenance	In-house under contract of WSCC
Cash Collection	Collect and transfer to centre	Jade Securities
P&D machine maintenance	Machine maintenance for pay and display machines	Flowbird (Parkeon)
IT Software	PCN processing/issuing, permit, on-line payment and challenge portal	Chipside
Cashless parking	Provision of cashless parking solution	Mi Permit (Chipside)
Notice Processing	Administering life cycle of PCN, responding to correspondence, appeal management, permit administration and scanning.	In-house
Enforcement Agents	Recovery of outstanding debts – corporate contract	Currently being re-let.

Compliance Management and Cancellation Policies are set by WSCC in line with the Traffic Management Act's recommendation that they are published.

The parking policy document should be associated, as a minimum, to the Parking Strategy, Transport Strategy and parking operational documents.

Annual report: one of the core elements of the government introducing the Traffic Management Act was to improve transparency and professionalism within parking services. Under statutory guidance, it is a strong recommendation that each council produces an annual report. MSDC does publish an annual report and received a PATROL award for its 17/18 annual report.

Processing of the PCNs life cycle is managed by an in-house team which reflects the general trend within the parking industry. Authorities have found that when outsourcing this element of the service the quality decreases which subsequently impacts on the authorities' reputation. Having an in-house operation can also safeguard its independence in order to provide a fair appeal process to the customer.

To assist with traffic management objectives on-street charges should be higher than those in the car parks. This is to encourage the customer to use the car parks rather than circling to try and find a space on street and causing congestion. Circling vehicles cause congestion, higher emission output and safety issues. This is currently the case in Mid Sussex, with on street charges being set by West Sussex County Council

Costs: It is extremely difficult to benchmark MSDC's costs against other authorities, as each authority report their financials differently i.e. re-charging policies, contract requirements and separation of service costs. Furthermore, the number of authorities that publish their parking accounts separately to their corporate accounts are limited.

The Phase 1 report sets out the technology employed. A summary table of common issues we often come across when working for District Councils are included below along with commentary on the current MSDC position.

	Common issues	MSDC Position
No Annual Parking Report Produced	Many Council's do not produce Annual Parking Reports.	MSDC produces Annual Reports in-line with PATROL guidelines and has been awarded a merit award in 2017
Complicated, ad-hoc or expired contracts	Ad-hoc or expired contracts are often used in place of a strategic approach to procurement.	MSDC benefits from WSCC contracts for back-office systems and has clear contractual arrangements with partners such as debt recovery and cash collection
Inconsistent payment methods across the estate	Equipment varies regarding payment methods allowed across the estate resulting in uneven and confusing customer experience.	P+D machines are consistent and allow the same payment methods across the estate.
Inconsistent pay-by-phone between on and off-street in two-tier authority areas	On-street and off-street pay-by-phone providers are different requiring two sets of service to be used by customers	Consistency between on and off-street through MiPermit between WSCC and MSDC parking
Inadequate equipment in car parks	Old and out-dated equipment provides poor customer service (e.g. by only allowing coin payments in exact change), breaks often costing money to repair and/or loss revenue, and provides poor management information.	All machines have been replaced in the last few years and allow for card and contactless payments. Going forward the investment strategy will need to consider if further improvements or changes should be made (e.g. less cash and alternative arrangements such as 'check-in check out')
Cash-only P+D parking or no card payment option	Some authorities still only allow cash payments. This is frustrating for customers as it means having to find exact change, and also discourages longer dwell times that would benefit local businesses, due to not having enough coins. Parking machines with known quantities of cash can also be a target for theft. Cash collection also incurs a cost.	All car parks allow cashless and contactless parking payments. The system anecdotally suffers from some connection issues, but as these rely on GPRS networks there is very little MSDC can do. Cash collection is well managed with a contract in place with a local company.
Separate systems to neighbouring authorities	Whilst not always a problem, going forward customers will expect a more joined-up approach to paying for parking through a preferred third party	Systems are the same as neighbouring authorities in the main, as a result of WSCC strategic direction
Hand held systems do not link to back-office	Hand held devices do not always connect with back office systems requiring manual export and import of data	Handhelds and back office systems are integrated.
Provide data to open data feeds	Data is hidden on web sites or behind mobile apps. In reality this means that is seen by a small number of customers.	Connected vehicles and apps are able to communicate in real time with systems that provide information on parking availability and price.

Whilst the good performance of MSDC's back-office and customer facing systems is undeniable, it has benefitted greatly from the strategic direction and procurement lead provided by WSCC. There are no recommendations at present subject to the on-street CPE review by WSCC.

10. Using technology to provide a Positive Parking Experience

A key objective of introducing new technology should be to improve the customer experience. This can be achieved by: -

Communication with motorists and influencing behaviour to help relieve congestion at peak periods

The data gathered from parking technology can be used to communicate with and inform motorists, influencing their behaviour to help relieve congestion at peak periods.

The use of connected vehicles and apps will enable direct communication of traffic and parking conditions. Effective use of this opportunity will enable drivers to make informed choices about whether to drive or use other forms of transport, when and where spaces are most likely to be available and the best route to use.

If the information is provided, integrated information systems will also have the potential to recommend alternative travel methods, encouraging the use of public transport for all or part of journeys based on a combination of speed, convenience, and price. For example, they could advise drivers to Haywards Heath that Hazelgrove car park is likely to be full and recommend the use of an alternative car park or arrival during less busy periods.

This information will help manage demand and ensure that where capacity is an issue, all spaces are used as efficiently as possible throughout the day.

Acceptance of a variety of payment methods

The use of electronic payment methods (including contactless at the parking facility and payment by an app) are already of increasing importance and are already in use in the district. Digitisation is essential to accommodate future car and transport advances. In terms of immediate benefits, it will make it easier to create time-based permits and special permits for specific functions, enabling the Council to tailor products to meet the needs of the communities it serves.

Creating convenient alternatives to cash is an essential pre-requisite for any parking operator that aims to reduce or remove cash payment. These include:

- **Providing contactless payment at all payment points.** Contactless payment is fast becoming the natural way to pay in large parts of the country⁸ and is a convenient way to pay.
- **Optimising the use of Permits and long term passes.** Purchased online, these permits and passes can be a very efficient way of accepting payment for visitors and regular users alike.
- **Payment by Phone or App.** The current contract with MiPermit allows users to pay for a fixed period with the option to extend this later, subject to length of stay restrictions. This model of contracting with a single mobile payment service will, however, be unsustainable in the long term and will need to be replaced by a multi-vendor platform that accepts payments from apps and vehicles without requiring the Council to enter into an exclusive contract with one provider. The platform would enable registered app or service providers to inform the system when one of their customers parks in a parking space. Vehicles and apps from out of the area will need to be able to make payments, therefore a system able to accept payments from a variety of 3rd party sources is required. A 'multi-vendor platform' is an online service that will enable any payment app to make a payment for parking, for example, a visitor driving a German connected car would be able to use this system to pay for their parking, even though they have never registered directly with MiPermit. This can be used in a variety of ways – for example a local store could also use the system to pay for a customer's parking as part of

⁸The British Retail Consortium's annual Payments Survey shows that in 2016 card payments accounted for 54% of all retail payment transactions. Contactless is also changing the way in which people pay small amounts – 9 out of 10 coffees were paid for by contactless in 2017.

an offer. A similar platform has already been established in a number of European cities. The Council should seek to join with other authorities in jointly procuring a ‘multi-vendor platform’.

Pay by licence plate.

This can be used in a number of ways;

- **At payment terminals** (aka pay and display machines⁹). Requiring customers to enter their licence plates number when paying removes the need for customers to return to their vehicles to place a ticket in the windscreen. It enables monitoring of parking places by mobile ANPR and provides data on length of stay and return rates. We understand that some of the existing pay and display machines have this capability, but it is not currently used. Whilst initially some car park users may be resistant to typing in numbers, we would expect this to only be a short term familiarity issues as these systems are widely used successfully elsewhere (increasingly so when linked to ANPR enforcement systems on privately operated car parks).
- **With Pay on Foot.** An ANPR system would assist with vehicle identification (for example with lost tickets, issues at exit etc) and with usage statistics.
- **Pay by app.** The licence plate is the vehicle identifier.
- **Permits and long term passes.** When combined with ANPR, customers can use these permits and passes seamlessly in pay on foot car parks; when combined with the new payment terminals these can be used in short term car parks. Other long term ticket types can also be created for specific types of user (e.g. commuter, tourist, rural residents, carers) to support other council policies.
- **Discounts and offers.** Payment by licence plate simplifies the process of offering discounts and validations, using an online system to manage the process of applying a discount to the parking session.

Pay for time used rather than pay on arrival.

As the current pay and display system requires payment on arrival, users are required to predict their length of stay. Many businesses express the concern that the inflexibility of this system impacts visitor dwell times. In 2017 The City of York Council and the local Business Improvement District commissioned customer research, one of the key findings of which was that 67% of respondents expressed a

preference for “pay on exit” systems as they were not certain of their length of stay upon arrival.

There are alternative to pay on arrival that have been successfully implemented elsewhere. The existing options available are: -

- **Pay on foot with barriers in larger or more strategically important car parks.** This method is not currently used in Mid Sussex as it is generally restricted to multi-storey car parks, however barriered systems (sometimes linked to ANPR) are becoming more commonly used by local authorities on larger surface car parks (including in Chester and Stoke-on-Trent). Pay on foot has the advantage that users have to pay to leave, reducing the need to patrol and issue PCNs (note that PCNs can still be relevant for those who park inappropriately, e.g. in disabled bays). As this is an engineered system, it can fail, therefore appropriate maintenance and support contracts will be required to manage any breakdowns. On larger surface car parks where adjoining properties have rights of access, RFID passes would have to be supplied to allow these rights to continue. Alternatively, if ANPR is installed, licence plate details for right-holders can be stored to provide access automatically.
- **Check in –Check out.** Can be installed as an ‘add-on’ function to payment terminals that accept card payment. Customers can use their credit/debit card to identify themselves on arrival, then return to the machine before departure. Using the same card enables the machine to calculate the fee, process payment and “check out” the vehicle. This removes the need for customers to estimate their stay length on arrival. A similar process can be used with pay by app. Whilst this approach has been

⁹ Note that the term ‘pay and display’ is not used as machines will not issue a ticket for windscreen display.

successfully piloted at a number of Councils across the UK including Newcastle, Lichfield and Basingstoke, we are aware that it was less successful in Waverley and was subsequently removed. Consultation feedback was negative towards this type of system.

Figure 31 below illustrates how the customer journey differs between pay and display and the options outlined above.

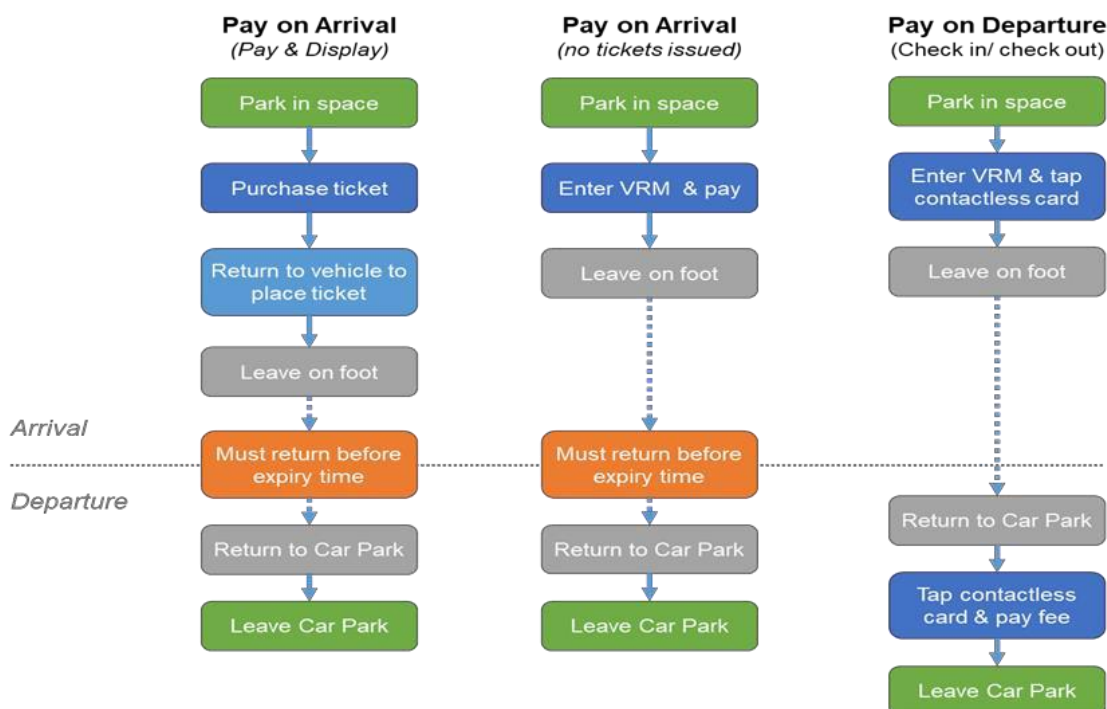


Figure 36 - Customer Journey for Parking Terminal Options

Case Study – Cheshire West and Chester Council

Cheshire West and Chester Council (CWCC) operates both on and off-street parking within its boundary. It had historically operated its off-street car park using pay and display with the exception of one car park in Chester which had pay and display on some floors and pay on exit on the remainder. Due to issues with the pay on exit system, CWCC considered options for its replacement and the potential to extend the system to other car parks in Chester. This was for a number of reasons including: -

- Improving compliance rates at off street car parks – enforcement resources had been prioritised to on-street to ensure statutory obligations were complied with
- To improve payment options. Existing machines accepted only coins and no change was given.
- To provide functionality for the introduction of concession arrangements with local businesses

A WPS Pay on Foot and ANPR (licence plate recognition) system was subsequently installed at 7 of its car parks in Chester and new pay and display machines at others, which now allow contactless payment and provide change for cash payment. Functionality includes: -

- Recognition of season ticket/pre-payment card holders with barriers raising automatically
- CWCC resident Blue Badge Holders park free for up to 4 hours using a chip system applied to the badge which the pay on foot system recognises.
- A system to manage free parking for specific users such as visitors to surgeries. A custom-built Ticket Entry Terminal in each entry lane enabling visitors to choose between concession parking and public

parking. If a concession ticket is chosen the system automatically analyses the parking status and provides visitors with a 'concession parking available' ticket (to be validated within the concession before exit) or informs them that concessions have reached the available limits and requires them to take a 'standard' public ticket.

- A web-based application that allows a business to pay towards or for its customers' parking.
- An intercom system linked to the Council's car park management office during operational hours. Outside these periods, issues are managed by the CWCC's main CCTV controlroom.
- A flexible WPS maintenance contract, supported by front line maintenance from CCWW officers if required.

Since installation, revenue has increased significantly with the capital costs being recouped within 12 months. The system has allowed CWCC to focus more resources on enforcing on-street parking contraventions to keep traffic moving in the city. As reasonable provision was made for customer support and equipment maintenance there have been no material issues with system reliability.

Other methods not currently allowable/ANPR Technology

Consultation feedback has also proposed the use of barrierless pay on exit systems which use Automatic Number Plate Recognition (ANPR) to enforce non-payment with penalty notices issued by post to users who don't make the appropriate payment.

ANPR technology is widely used for parking management in the private sector and by local authorities in other European countries. However, under current UK legislation and regulation, UK local authorities can only use ANPR in a limited manner. In particular, PCNs can only be issued after viewing vehicles for a statutory period and then placing a ticket on the windscreen. The restriction on the use of ANPR was seemingly based on the premise that enforcement by local authorities using ANPR was unduly harsh. Elsewhere cities across Europe and North America have successfully introduced digitised systems based on ANPR surveillance. The result has been increased compliance, reduced numbers of penalties issued and increased revenue from spontaneous payment of parking fees. UK authorities are now beginning to take advantage of the same technology within the constraints of the current parking legislation.

Over the period concerned by this report the increase in the number of connected cars will ensure that motorists have sufficient information and opportunities to park in a compliant manner. It is to be hoped that this along with measures being introduced in the Positive Parking Agenda will convince legislators to revisit this question and permit the appropriate use of technology to provide efficient identification and enforcement against non-compliant vehicles. As on-street parking management morphs into more sophisticated kerbside management this issue will become more important.

Where private operators manage car parks on behalf of local authorities, we understand that the same legislative restrictions would apply although that this has yet to be legally tested.

10.1 Intelligent and Efficient Parking Management

The base case report highlights that there is a lack of parking occupancy and usage data to assist the Council with understanding how its car parks are used.

It is essential that decisions relating to meeting current and future parking demand are balanced and data led, considering impacts on all groups and customers. Parking technology provides a significant opportunity to collect the necessary data, whilst also reducing parking management costs for the Council to achieve more with less.

Monitor parking bays.

Bays should be monitored according to their tendency to be misused, or to gather data in order to establish their availability in busy areas.

In Mid Sussex, we understand that Civil Enforcement Officers (CEOs) are deployed according to a number of factors including experience and community demand. They are required to seek out proof of payment via a number of sources including handheld machines and the pay and display ticket in the vehicle.

There are ways to make this more efficient by introducing new technology to collect data: -

- **Payment Terminals.** Car parks that are equipped with payment terminals can provide real time data on usage, especially if the terminals are configured for licence plate entry and/or check-in/check-out.
- **Occupation Sensors** Whilst payment terminal data will be adequate for many locations, busy or prime locations may in due course need a supplementary bay monitoring system (usually an ‘overhead’ camera based system or bay sensors if camera visibility is restricted by trees or other obstructions) that will provide more accurate data on space usage. Car parks can also be monitored by mobile ANPR systems (mounted in cars or scooters) giving snapshots on occupancy levels. The latter would be more cost effective if ANPR vehicles monitored on street parking too, spreading the cost across both on and off street services.
- **Pay on Foot with barriers.** If decked car parks are developed in the future that are suitable for barriered pay on foot systems, then these will provide accurate occupancy data. The addition of ANPR to these systems will add further data on patterns of use. Note however that Pay on Foot car parks with special bays (disabled, parent and child or EV charging bays) will need a secondary method of monitoring to ensure that these facilities are not being abused.

Reduce costs

Whilst new technology may require significant investment, the resulting systems will be more efficient and easier to operate for the reasons set out below.

- **Rationalise the parking machines required.** If machines no longer issue tickets then fewer machines may be required as customers do not have to return to their vehicles. Car park machines should also be positioned to make them convenient for customers entering or leaving the car park on foot.
- **Centrally manage parking systems.** Central systems can now manage tariffs remotely, including dynamic tariffs, loading new tariffs in advance and creating special tariffs for specific days. Equipment operating status can also be monitored centrally, enabling a quicker response to issues
- **Monitor the use of cash machines.** Removing mechanisms from machines with no demand for cash will reduce the requirement for onsite hardware (e.g. in commuter car parks), reducing the cost of maintenance and cash collection. Machines that only accept card payment are also less prone to theft and vandalism.
- **Adopt intelligent deployment.** Data gathered by the methods described above will build a detailed picture of parking across the District. This will enable the parking service to deploy mobile monitoring and CEO resources to increase compliance.

Integrate systems

If data from payment machines, permits, mobile payment apps, sensor technology and back office enforcement systems are integrated, in the wider context of travel in the District this will enable:

- traffic managers to effectively manage peak periods of visitor demand
- Multi-modal journey recommendations to be integrated into public transport strategies
- Data will also be able to inform future policies on issues such as parking demand and tariffs.

This data can be shared with County traffic managers to ensure an integrated approach to traffic management.

Data, Reporting and Business Intelligence

One of the key benefits of these solutions is that it will create a significant amount of data on the parking operation. This will not only support the creation of accurate revenue and transaction reports; it will also enable detailed analytics to be easily compiled, for example on the performance of specific car parks, the effect of tariff changes in a town, compliance levels at specific times of day, etc.

To achieve this level of information the solution will need to include business analytics software, properly configured to meet the needs of the parking operation, including the reports to support the intelligent deployment requirement described above. MSDC will then have the option to develop specialised business intelligence skills in house or employ outside specialists to answer specific queries as required.

10.2 Other benefits

Employing more integrated and effective technology will reduce the cost of enforcement, and also tend to increase compliance. In the short term this may result in a higher number of PCNs being issued as patrols become more efficient, however in the longer term the increased compliance will result in an increased revenue from parking fees.

10.3 Relieving congestion and improving technology

The need to reduce emissions and improve air quality is a key driver for the District. Whilst current policies do not advocate controlling access to any areas, other authorities (such as Bath and Oxfordshire) are considering low or zero emission zones as a radical way of reducing NO2 and improving air quality in their city centres.

The data gathered from parking technology can be used to communicate with and inform motorists, influencing their behaviour to help relieve congestion.

The use of connected vehicles and apps will enable direct communication of traffic and parking conditions. Effective use of this opportunity will enable drivers to make informed choices about whether to drive or use other forms of transport, when and where spaces are most likely to be available and the best route to use.

This information will help manage demand and ensure that where capacity is an issue, all spaces are used as efficiently as possible throughout the day.

Phone payment apps are also a practical way of offering reduced tariffs to encourage the use of low emission vehicles in the Borough. For example, RingGo offers an Emissions Based Parking (EBP) service using vehicle registrations, combined with information from the DVLA, to automatically vary parking tariffs, based on the emissions of the vehicle being parked.

10.4 Emerging Technologies

Some technologies, including some mentioned above, are still emerging and MSDC will benefit from awaiting the results on trials conducted by authorities taking a lead on emerging digital solutions, before progressing with implementation.

For example, Harrogate Borough Council and North Yorkshire County Council have commenced a trial of smart parking in Harrogate with Appyway. The project went live on 28 January and provides a smart parking system (encompassing bay occupancy identification/navigation and 'one click' minute-by-minute payment). Around 2,000 sensors have been placed around the spa town which are battery operated and communicate with mobile phones via blue tooth technology. After locating free spaces, the technology guides drivers to the space and then even allows them to begin paying their parking charge at the touch of a button.

The £275,000 cost to implement the service has been funded through the Innovation Competition Fund, an initiative developed in partnership by AppyParking and Visa. The fund was established to find locations in the UK to showcase the benefits that can be unlocked for local authorities and residents when intelligent mobility solutions are embraced. The borough council and county council have each invested approximately £45,000 in the trial to cover the analytical software, service support and product enhancements.

We understand that almost 10% of all paid parking sessions are currently conducted via the associated mobile app. A number of performance measures have been established to evaluate the project. Over 500 users responded to an email survey which found the following results:

- 39% stay longer in Harrogate Town as a result of not worrying about a pay and display (P&D) ticket expiring.
- 21% have saved time finding a car parking space – further work is required to translate this into CO2 saved.
- 66% of users say that using Appy alleviates stress normally associated with a P&D ticket expiring.
- 89% say that AppyWay is more convenient than using a P&D machine.

Apparently, sessions using the system are on average six minutes longer on-street and 23 minutes longer off-street than P&D payment sessions. Transaction costs have also reduced.

Whilst early indications are that smart parking is more convenient for the customer, increases dwell time in Harrogate Town Centre and enhances its offer, the viability of delivering a service elsewhere given the implementation costs still needs to be demonstrated once further details of the trial are available.

10.5 Technological Recommendations and Delivery Plan

A full digitised parking management concept will require investment and will need to be implemented in stages as existing contracts with suppliers expire and when affordable solutions are available to deliver the necessary occupancy data.

Parking Matters recommends that MSDC adopt a phased approach to upgrading the parking technology in line with any investment strategy to rationalise and develop the car park estate. In view of the way that parking management is structured between WSCC and MSDC it may be appropriate for a joint approach for the delivery of this investment to ensure a consistent approach throughout the county and ensure that the specification for new technology is consistent with existing for WSCC processes and procedures.

10.6 Phase 1

Phase 1 could be around the car park equipment being upgraded over time or replaced as existing machines reach the end of their operational life. Once the upgrades/replacements are complete, the functionality and data produced will bring immediate improvements to the customer experience, reduce the cost of damage and theft and provide real time data to assist with enforcement.

Table 16: Phase 1 Recommendations

Item	Benefit
1 Implement a programme of Parking Terminal replacement in the surface car parks	Enables Contactless payment at all car parks Replace existing machines with more robust technology
2 Configure new machines replacing P&D to require customers to enter Vehicle Registration Mark (VRM) with no ticket issue	Customers do not have to return to vehicle to display ticket Reduced maintenance as no tickets are issued. Real time data on VRMs made available

3	Ensure that data from all systems (machines, phone payment, back office) can be integrated)	Brings all parking data together to improve reporting and begins to inform demand management strategies and intelligent deployment. Reduces the cost of enforcement. Allows flexibility between systems e.g. a payment terminal transaction could be extended via the phone app)
4	Link the enforcement system to the integrated data	Increases compliance monitoring efficiency – identifying areas that may require closer monitoring and creating a flexible ‘intelligent’ deployment capability. Reduces the cost of enforcement.

10.7 Phase 2

The new technology procured in Phase 2 will enable MSDC to be ready for connected vehicles but will also support the introduction of targeted tariffs and innovations to improve the Council’s services to the community. Note however that technology for sensing occupancy and for ANPR is improving rapidly, so specific recommendations on the best products today would be out of date by the time Phase 2 is procured. Consideration should be given to procuring some of these improvements in partnership with the County Council for use throughout the County.

Table 17: Phase 2 recommendations

Item	Benefit
5 Install pay on foot systems (with integrated ANPR system) on larger car parks (including new decked facilities)	Easier pay on exit capability and improved compliance. The system will also deliver accurate occupancy information and usage data to inform transportation strategies.
6 Identify car parks that require sensor technology and install.	Accurate information on busy car parks will assist with predicting availability and add to the pool of data that assists with intelligent enforcement and demand management through tariffs.
7 Introduce parking availability platform	Publishes the real time availability in car parks for use by 3rd party apps/cars Reduces the number of vehicles searching for parking
8 Introduce parking payment platform	Removes the need for a contract between mobile phone/app provider and Council Enables multiple payment/mobile phone/app providers to pay for parking
9 <i>(Depending on free parking in future decked car parks)</i> Blue badge registration system (enabling Blue badge users to register their badges in return for free or reduced rate parking).	Reduces potential for fraud Increases enforcement efficiency (enables ANPR to identify that a vehicle has a badge associated with it)
10 System for assisting those with no access to credit/debit cards	If the removal of cash payment is contemplated, then this should be implemented (usually an RFID card used in a similar way to a meter key or Oyster card).

Appendix 3 provides some information on current suppliers for technology solutions.

Appendix 1 - Decking Systems

“Decking” systems are generally based upon a steel frame. There are several specialist decking suppliers including Fast Park, Another Level, Top Deck, as well as suppliers such as Bourne Parking and Duplipark UK who supply decks as well as multi-storey car parks.

Suppliers’ costs vary significantly between £7k to £13k per space (the respective cost is generally reflected in the quality of the product). Decking systems can be installed over existing surface car parks while maintaining up to 75% of the existing capacity during works. Car park decks don’t usually have foundations (in the case of single deck systems only) or lifts. The construction of a deck over an existing car park often requires the existing parking layout to be amended to facilitate the deck structure and ramp and allow a reasonable circulation throughout the whole car park. The design life of these decking systems is claimed to be 25+ years, however they will require regular maintenance to achieve this.

In practical terms, disabled access is limited to the surface level in the absence of lifts, however providing a reasonable number of accessible bays are allocated then there will be no issues complying with statutory regulations.

The only real benefit of this type of system is the speed of erection as a permanent traditional structural design would provide better value in the longer term. The construction period for a traditional deck is longer than for a temporary deck, in particular, because of the need for the construction of permanent foundations. However, where parking spaces can be an issue, such as in the towns in Mid Sussex, speed of construction and the potential to maintain some capacity, these systems may be a preferable solution.

The performance specification prepared for any procurement process should define an appropriate design life and level of quality, to ensure that the completed temporary structures will be fit for purpose and maintenance requirements will not be too onerous.

Some decking suppliers will lease their systems for short term periods.

10.8 Issues with Decking

There are issues that must be considered as part of any review as to whether decking will be an appropriate solution.

- Before any works can progress a temporary or full planning consent (as appropriate for each proposal) will be required. This could result in delays if certain proposals are deemed to be contentious. The procurement process for the supply and installation of the decking systems must also be factored in. The Council’s requirements will have to be formalised via an ITT and advertised in accordance with the Council’s procurement policies. If the sites are tendered separately the costs for individual sites will fall below OJEU thresholds. Subject to the advice of the Council’s procurement officers, this method should reduce procurement risk and risk of challenge.
- Where decking is to be installed over existing car parks, a degree of preparation will be required to the existing surface layouts including removal of trees, kerbs, buildings and other physical obstructions. As the deck structure will interfere with the existing access ways, layouts will have to be redesigned and existing surface markings will have to be burnt off and reapplied.
- For permanent installations, the design quality will have to be higher with attractive cladding and clear span parking layouts to both comply with the likely planning requirements and to ensure that completed structures are user friendly and in accordance with modern requirements. The clear span design itself will increase the system costs by c£1k per space, however cheaper options with regular columns at the front of parking bays make parking difficult for some users and would impact existing usage. For sensitive areas such as East Grinstead we would expect a higher specification facility with appropriate cladding to help protect the character of the surrounding areas.

- Any additional provision of disabled spaces at the decked sites must be provided at ground level if no lifts have been allowed for. Consequently, the number of ground-floor spaces on the existing car parks will be reduced to accommodate the wider disabled bays.
- The consequence of the previous two bullets is that to increase capacity by 100 spaces, we would expect decking accommodating c120 spaces would be needed.
- Additional pay and display machines will be required where decks are to be installed over existing car parks. As stated previously the installation of a barriered pay on foot system would be preferable to improve compliance and provide more reliable occupancy data.

10.9 Revenue Generation

Any proposal to provide additional decked spaces to cater for peak demand should recognise that even where car parks are currently extremely well utilised during peak periods it is very unlikely that all additional spaces will generate a level of revenue per space equal to that currently generated by the existing spaces. This is because the new spaces will initially only be used at peak periods and will, therefore, generate a lower yield per space than those at surface level that will be occupied for longer periods. There is also the possibility that some of the revenue generated by the provision of additional spaces will not represent new income for the Council but will simply be existing revenue relocated from less popular Council car parks.

Assuming a maximum economic life of any new structure of 30 years and a construction cost of c£13k per space (including fees), we estimate that additional gross revenue (net of VAT) of c£1,250 per space would need to be generated to viably deliver a decking system.

10.10 Decking Viability Conclusions

As revenues per space (excluding permit income) are currently a maximum of c£2,600 per space p.a the development of additional spaces could be financially viable. Increasing tariffs and season ticket prices in the short term would assist with funding development further and could be justified by existing demand levels and if some of the additional surplus produced is used to improve parking provision. In any event a detailed business case would be required before any decision could be made.

Appendix 2 - Potential Response to WSCC CPE review

Depending on the outcome of the review the team at MSDC will change. As a medium sized District it will be hard to justify the current level of CEO's and office staff if they are only managing the off-street estate. One option that has been considered in other places is combining the roles of CEOs and some larger cities such as Bristol combine the roles of some CEOs with other services.

Below is an extract from the Statutory Guidance published by the Department of Transport with regards to combining the Civil Enforcement and Environmental Officers roles.

'The relevant legislation (i.e. Section 76, Traffic Management Act 2004 and Section 63A, Road Traffic Regulation Act 1984) does not expressly prohibit civil enforcement officers and parking attendants respectively from carrying out functions other than those which are related to traffic management. As such, local authorities wishing to appoint officers to carry out traffic management duties in addition to, for example, environmental enforcement duties must ensure that neither of their responsibilities are compromised as a result of the integration of duties. Income from penalties issued under each regime should be kept separate.

A civil enforcement officer may be authorised by an enforcement authority to carry out functions under more than one Act. For example, a civil enforcement officer may be authorised under the Traffic Management Act 2004 for the purposes of carrying out parking enforcement duties, and that same civil enforcement officer may also be authorised under environmental legislation for the purposes of carrying out environmental enforcement duties such as, issuing fixed penalty notices for littering or dog fouling. In such circumstances, local authorities must ensure that enforcement officers carrying out dual functions have the appropriate training and wear a uniform or badge when carrying out their functions.

A dual function role is likely to be more challenging as officers will be expected to understand the potentially serious consequences of non-compliance under the different sets of legislation. For instance, if a motorist thinks a parking penalty charge notice was unjustifiably issued, he/she may appeal against the penalty charge to a parking adjudicator (i.e. via a civil regime). If they do not pay the penalty charge, then it may be recovered as a civil debt. There is no formal appeal mechanism against a fixed penalty notice issued for an environmental offence. If an alleged offender disputes the alleged offence and/or does not pay the fixed penalty, then the enforcement authority should bring criminal enforcement proceedings for the original offence in a Magistrate's Court (i.e. via a criminal regime), which could result in a criminal conviction and a fine of up to £2500. More importantly, recipients of penalty charge notices or fixed penalty notices from dual function enforcement officers need to be made aware and understand the capacity in which the officer is acting at any given time. It is therefore important that local authorities ensure that officers carrying out dual functions acquire the necessary levels of skills, training and professionalism for carrying out both functions, and are properly supervised on the job.

Local authorities combining their traffic management enforcement activities with other enforcement activities should ensure their combined operations are run efficiently, effectively and economically. A single and more effective enforcement regime may generate further benefits to the wider community such as, for example, a reduction in traffic congestion and a cleaner neighbourhood by combining traffic management and environmental enforcement, as well as efficiency gains for local authorities. It is strongly recommended that two tier local authorities have a good working relationship and continue to maintain a dialogue where enforcement operations are combined.'

The majority of authorities still keep the CEO and Environmental Officer role separate (there are limited examples of where these roles have been combined). Officers that are deployed to carry out dual functions can confuse the public as the reasons for enforcement are very different as well as the legislation and consequences of the notices.

The Officer (as indicated in the above statement) must make sure that the recipients of the notice is advised under which capacity they are working, issue the correct notice type via the IT software solution and provide the correct advice for the notice type.

The roles are also quite different in their approach. A CEO rarely interacts with the driver of the vehicle they have issued a PCN too, whereas Environmental Officers, in the majority of cases, are required to request personal details from the Offender. Different skills are required for each role. The majority of CEOs employed will be reluctant to take on the environmental role as there is a higher risk of conflict and not all will have the skill set to manage these situations.

There is also the risk with dual roles that officers will prioritise the 'easier' tasks of the role which will have an adverse impact on the other elements required of the role.

It is, however, becoming more common for the teams to be managed under the same portfolio. This enables better communication, resources to be shared to improve resilience, (especially in smaller teams) while still ensuring priority tasks for both roles are being managed effectively.

Communication between team members of identified 'offences' can improve the efficiency of the team i.e. whilst patrolling and an offence is observed can be reported to the nearest officer that can deal with the offence. Also, within the team there would be the potential to identify Officers that do have the skills to be able to complete both roles and could be trained accordingly, however deployed for one function only at a time.

Managing both roles under the same portfolio may generate further benefits to the wider community with cleaner street and improved traffic management.

Appendix 3 - Technology Suppliers

In each sector of the market there are a number of manufacturers that can supply suitable products and can integrate into a Common System. However, the system and each component must be properly specified in order to ensure that they meet MSDC requirements and are committed to the interfaces etc that are required to interoperate successfully.

Information has only been given on those items identified as phase 1. Technology in phase 2 is changing all the time and prices are likely to reduce as competition increases.

Parking Terminals

A number of the usual terminal manufacturers can offer the features described above. These include

- Cale (<https://www.caleaccess.com/en-gb/>)
- Metric (<http://www.metricgroup.co.uk/>)
- Parkare (<http://www.cameparkare.com/uk/>)
- Parkeon (now Flowbird) (<http://www.parkeon.co.uk/>)

(note that Cale and Parkeon announced their merger in November 2017 but continue to offer two separate product ranges)

A number of other providers will offer similar features but are less well established in the UK. These include IPS (<http://ipsgroupinc.co.uk>) and American manufacturer and WSA (<http://www.wsa-electronic.de/en/>) from Germany.

Pay on Foot

A number of pay on foot manufacturers offer variations on the traditional ticket based model and will be able to integrate their system to enable centrally issued permits to be used in the car park or allow access by ANPR only. Suitable manufacturers include:

- Scheidt & Bachmann (<https://www.scheidt-bachmann.co.uk/en/>)
- APT Skidata (<https://www.swarco.com/apt/Products-Services/Parking-Solutions/APT-Skidata-Pay-on-foot>)
- WPS (<https://wpsparking.com/en/>)
- Hub (<https://www.hubparking.co.uk/>)
- Designa (<https://uk.designa.com/>)
- Conduent (<https://www.conduent.com/solution/transportation-solutions/parking-management-systems/>)
- Newpark Solutions (<http://www.newparksolutions.com/>)

Common System & Business Intelligence

A number of technology suppliers offer products that will form a common system, including many that offer other parking products (including Imperial and Conduent) however it is very early in the development of these systems and only Parkmobile offers a system that is currently in use (in the City of Paris). The joint Authority initiative is working with the Dutch National Parking Register to use its experience in creating a system that can be used by multiple authorities.

The new technology procured in Phase 2 will enable WDC to be ready for connected and autonomous vehicles but will also support the introduction of targeted tariffs and innovations to improve the Council's services to the community. Note however that technology for sensing occupancy and for ANPR is improving rapidly, so specific recommendations on the best products today would be out of date by the time that phase 2 is procured.

Appendix 4: EV Charging Stations in Car Parks

As there are so few electric cars on the road, and with the technological improvements to come, it is impossible at this stage to predict the likely demand for charging in specific parking situations. In addition, there is very little data on how and where EV users will want to charge their vehicles, for example local shoppers may only want to charge their EVs at home and would not use a town centre car park as a charging point. Whilst the London Mayor's office demands that 20% of all new spaces in a development should have charging points, there is unlikely to be a demand for this level of charging in MSDC car parks for many years.

Charging types

There are currently 3 broad types of charging station currently in use:

- **Rapid** are the fastest type, able to charge an EV to 80% in 20-40 minutes depending on battery capacity and starting state of charge. These are mostly installed in motorway service areas or similar facilities.
- **Fast** chargers are the most common in car parks and are available in two power capabilities (7kW and 22kW). These are able to charge a compatible EV in 3-5 hours, or in 1-2 hours if both vehicle and charger are compatible with the higher power.
- **Slow** charging units are rated at 3kW. Charging times vary on unit speed and vehicle.
- As the technology develops other charger types will appear.

Power requirements

Whilst a small number of slow chargers will not affect most car park power supplies, larger numbers of slow chargers or fast/rapid chargers may require the car park supply to be upgraded, often at a significant cost. Limitations in the power distribution network may preclude large number of higher power chargers.

Electric Vehicle Charging Recommendations

The lack of usage data, together with the continuing development of charging technology, suggests that modest investment in car park charging stations is the best course of action but that the underlying capacity of the electricity supply should be established.

Further investigation is required into the best types to install. When specifying a charger it will be important to identify how it will be used; in a car park it is used for short term parking it may be important to install higher power fast chargers in order to enable a customer to obtain a useful charge, whereas in commuter car parks, a larger number of slow chargers may be more useful as they are cheaper and will be connected to one vehicle all day.

MSDC should consider a separate EV charging strategy and work with other authorities to produce this. The number of charging points should be under review and consider increasing the number available when required up to the limit of the available supply.

Glossary

ANPR	Automatic Number Plate Recognition	a technology that uses optical character recognition on images (usually a CCTV camera) to read vehicle registration plates
APDS	The Alliance for Parking Data Standards	A not for profit body that Develops, promotes, manages and maintains a uniform global standard to allow organisations to share parking data across platforms worldwide.
AVP	Automated or Autonomous Valet Parking	A system able to take control of a vehicle and to drive it from the drop-off zone to the parking space and from the parking space to the pick-up zone
BI	Business Intelligence	A set of technologies, methods and processes that transform raw data into meaningful and useful information used to enable more effective strategic, tactical, and operational insights and decision-making
BPA	British Parking Association	A not for profit organisation, representing, promoting and influencing the parking and traffic management profession throughout the UK and Europe
CEO	Civil Enforcement Officer	A person employed to enforce parking, traffic and other restrictions and laws in England & Wales.
CIHT	Chartered Institution of Highways & Transportation	A not for profit body that represents and qualifies professionals who plan, design, build, manage and operate transport and infrastructure.
CPE	Civil Parking Enforcement	‘Decriminalised’ parking enforcement carried out by councils rather than the Police under The Road Traffic Act 1991
DfT	Department for Transport	
ELT	Extract, Load, Transform	A data integration process for transferring raw data from a source server to a data warehouse on a target server and then preparing the information for downstream uses
EV	Electric Vehicles	Wholly electric or hybrid vehicles which are capable of being plugged in order to recharge batteries for electrically powered movement
GDPR	The General Data Protection Regulation	Regulation (EU) 2016/679 - a regulation in EU law on data protection and privacy for all individuals within the European Union (EU) and the European Economic Area (EEA).
	Intelligent deployment	The use of Business Intelligence methods to maximise CEO effectiveness. CEOs are deployed to locations based on the likelihood that vehicles are parked in contravention, based on previously gathered data
LTP	Local Transport Plan	Document produced by Transport Authorities which sets out policy and investment priorities. A material consideration when deciding Planning Applications
	Mobile Monitoring	The use of ANPR mounted on vehicles to monitor large numbers of vehicles in a short period of time.
MSCP	Multi-Storey Car Park	
P&D	Pay and display	A parking system in which a motorist buys a temporary permit from a machine and displays it in the window of the vehicle
PCN	Penalty Charge Notice	A fixed penalty notice issued by a CEO, backed with powers to obtain payment by civil action

PML	Parking Matters Ltd	
RFID	Radio-frequency identification	A system using electromagnetic fields to automatically identify and track tags attached to objects. The tags contain electronically-stored information. Oyster cards and contactless credit/debit cards are examples of this type of system
SAE	Society of Automotive Engineers	A U.S.-based, globally active professional association and standards developing organization for engineering professionals in various industries. Principal emphasis is placed on transport industries such as automotive, aerospace, and commercial vehicles
SMMT	The Society of Motor Manufacturers & Traders	A trade association that supports and promotes the interests of the UK automotive industry at home and abroad. Working closely with member companies, SMMT acts as the voice of the motor industry, promoting its position to government, stakeholders and the media.
UWE	University of the West of England	
VRM	Vehicle Registration Mark	The mandatory alphanumeric registration mark of a vehicle, displayed on a vehicle registration plate
WSCC	West Sussex County Council	The local Highways Authority