CHARTER SQUARE 1C

TECHNICAL NOTE - PARKING PROVISION

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Velocity Transport Planning Ltd www.velocity-tp.com





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EXECUTIVE SUMMARY

- Velocity Transport Planning has been commissioned by the applicant, London Square Developments, to
 prepare a Technical Note providing further detail on parking and justification to support the proposed
 development of Charter Square Phase 1C (Planning Ref: 20/01112/FUL). This follows the production of
 a Transport Statement dated August 2020 submitted in support of the application and earlier revisions
 of this Technical Note.
- 2. The proposed development will provide 64 new homes. Owing to the site's spatial constraints, location within the town centre, within five minutes' walk of the railway station and with immediate access to buses from the High Street there is no parking proposed on the site itself. However, the applicant has identified an opportunity to provide 21 spaces for the proposed development of which 20 will be unsold spaces within the Phase 1A car park. Four of these spaces will be blue badge spaces of which one will be located on the new link road.
- 3. The applicant is supporting the low-car nature of the proposals by providing an enhanced level of sustainable travel initiatives to residents including five years' worth of free car club membership to first occupiers of each household. The first of two car club vehicles supporting the wider Charter Square site has recently been provided on Moormede Crescent, just a three-minute walk from the site. The applicant will also offer each household one year of free grocery delivery slots. The layout of each apartment has been reviewed specifically in response to the COVID-19 pandemic and the low-car nature of the proposals to ensure that there are areas sized for desks and additional power and networking sockets to support regular homeworking.
- 4. Providing parking on-site is particularly challenging owing to local constraints including the railway bridge and the unsafe junction of Mill Mead with High Street. Options to introduce a basement car park accessed from the Mill Mead via the New Link Road have been explored but the space required for a vehicle ramp or car lifts means the resultant car park capacity is very inefficient. The greatest issue with parking on-site however is that it would undermine the desire to pedestrianise Mill Mead and make this key local route unsafe for future residents and neighbours.
- 5. Recognising that parking is a sensitive topic locally, and that other residential developments in the area coming forward such as Eden Grove have the potential to add to local on-street parking stress, the applicant has revisited the 2017 parking beat surveys and commissioned a new parking survey covering a much wider area.
- 6. The results of the 2017 parking beat surveys demonstrate that there is a limited supply of uncontrolled on-street parking within 400m of the site. Of this, around 66% was occupied overnight at the time of the survey. The remaining parking supply consists of permit holder only parking and yellow lines and was well-utilised.
- 7. The unoccupied parking spaces within the study area have the capacity to accommodate unfettered demand from the equivalent of at least 4,399 flats before on-street parking stress reaches unacceptable levels. This is far in excess of the housing which could be delivered locally over the draft Local Plan 2020 to 2035 plan period.



- 8. In order to understand whether these results have changed, and what conditions existing within a much wider area, the applicant commissioned a new parking survey covering streets within 1,500m of the site in January 2021.
- 9. The new parking survey captured a significant proportion of the town and far more than the original survey. Whilst 'typical' travel patterns continue to be affected by the COVID-19 pandemic and associated national lockdown, the parking beat surveys took place overnight and as such are likely to be less affected. The specification of the survey was in line with the industry standard 'Lambeth Methodology'.
- 10. The results of the parking survey indicate that parking stress is relatively low within streets not subject to parking controls. The number of available spaces increases with the distance from the site, with very few spaces available within the immediate 200m radius of the site. This means that for residents of those apartments within Phase 1C without a parking space there would only be to park on-street providing they were prepared to regularly walk more than 200m to their car, which would act as a deterrent to car owners from purchasing an apartment in Phase 1C.
- 11. An occupancy survey of the car park within Phase 1A indicated that parking occupancy peaks at 56% which suggests that's many of the flats which own spaces do not own a car. A total of 20 of the 217 parking spaces within Phase 1A are unsold and the applicant is able to allocate these to residents within Phase 1C. This means that the proposed development can be provided with a total of 21 parking spaces comprising 17 standard spaces within phase 1A, three blue badge spaces within phase 1A and a single blue badge space proposed on the new link road. This results in a total proposed parking ratio of Phase 1C of 0.33 spaces per household. Phase 1A would be left with a total of 197 parking spaces, which would still comfortably accommodate the outturn parking demand from Phase 1A residents.
- 12. The applicant recognises that increasing the number of vehicles parked on-street can lead to local tensions, even where the parking stress itself does not reach unacceptable levels. To help address such concerns and mitigate the development's cumulative impact on parking when combined with other schemes coming forward locally, the applicant is offering to fund consultations into extending existing CPZs or to creating new CPZs to reduce the availability of uncontrolled parking and thereby reduce the opportunity for residents of Phase 1C to keep a car.
- 13. In summary, the applicant is committed to extending a number of initiatives including to residents of Phase 1C to support low-car-use lifestyles and enable them to shop and work locally, including:
 - § Occupiers of each unit will be entitled to receive five years' worth of free car club membership to Enterprise Car Club;
 - § Providing each household one year of free grocery delivery slots;
 - § Entering into a permit-free agreement with Spelthorne Borough Council to prevent residents from obtaining local CPZ permits;
 - § Offering £10,000 to fund consultations into extending existing CPZs or to create new CPZs as required;
 - § Providing high-quality cycle parking at a level which significantly exceeds the minimum required by policy;
 - § Fitting 13-amp charging sockets within the cycle stores to allow people to charge e-bikes and e-scooters;



- § Installing additional power and networking outlets within flats, an Openreach line and Hyperoptic fibre broadband, and further allocating space for home office desks within each flat for home working; and
- § Allocating 21 parking spaces within phase 1A and on the new link road for those households within Phase 1C which will have the greatest need for a parking spaces blue badge holders and larger households.



1 INTRODUCTION

- 1.1.1 This Technical Note has been prepared to provide further information and justification for the level of car parking provision at the proposed residential development of Charter Square 1C (Planning Ref.:20/01112/FUL). It has been updated since its original issue.
- 1.1.2 The proposed development will provide 64 new homes. In combination with the existing parking provision within Phase 1A there is a parking ratio across the two buildings of 0.67 spaces per unit. However, owing to the spatial constraints of the site, the site's location within the town centre, within five minutes' walk of the railway station and with immediate access to buses from the High Street there is no parking proposed within the site of Phase 1C. A total of 21 spaces are proposed with Phase 1C of which 20 will be allocated from unsold spaces within the existing Phase 1A car park.
- 1.1.3 The 20 spaces being allocated to Phase 1C within the existing Phase 1A car park are unsold and no longer required. The applicant proposes that a fourth blue badge parking space is provided on the New Link Road, the purpose of which is to provide a blue badge space with a much-reduced walking distance compared to those earmarked within the Phase 1A car park.
- 1.1.4 The remainder of this note is structured to provide context in the form of a review of prevailing policy, a review of the site's sustainable location, opportunities for on-site parking, the applicant's commitment to supporting sustainable development, a review of parking surveys collected in January 2021 and a review of the occupancy of the Phase 1A car park as surveyed in May 2021. The remaining sections are:

§	Section 2.0	Policy Context
§	Section 3.0	Opportunity to Provide On-Site Parking
§	Section 4.0	Sustainability
§	Section 5.0	2017 Parking Survey Summary
§	Section 6.0	2021 Parking Survey Analysis
§	Section 7.0	Public Car Parks
§	Section 8.0	Additional Blue Badge Parking
§	Section 9.0	Case Studies
§	Section 10.0	Phase 1A Car Park Occupancy and Release.

1.1.5 Where figures and drawings are presented within the body of this Note, full sized copies are also appended.



2 POLICY CONTEXT

2.1 NPPF (JUNE 2019)

2.1.1 Paragraph 105 of the NPPF states:

"If setting local parking standards for residential and non-residential development, policies should take into account:

- § The accessibility of the development;
- § The type, mix and use of development;
- § The availability of and opportunities for public transport;
- § Local car ownership levels; and
- § The need to ensure an adequate provision of spaces for charging plug-in and other ultralow emission vehicles."
- 2.1.2 In addition to this, paragraph 122 states that: "Planning policies and decisions should support development that makes efficient use of land, taking into account the availability and capacity of infrastructure and services both existing and proposed as well as their potential for further improvement and the scope to promote sustainable travel modes that limit future car use."

2.2 SPELTHORNE BOROUGH COUNCIL PARKING SPG (SEPTEMBER 2011)

- 2.2.1 Spelthorne's prevailing parking standards are set out in its 'Parking Standards' SPG which was adopted in 2011, prior to the publication of the NPPF and prior to Surrey County Council's prevailing standards which are discussed later.
- 2.2.2 The residential standards are minimums but are subject to certain exceptions. For residential developments, the following minimum standards apply.

Table 2.1 – Spelthorne Borough Council Parking Standards

Accommodation Type and Size	Car Parking Spaces per Dwelling
General Nee	eds Housing
One bedroom dwellings	1.25
Two bedroom dwellings	1.50
Three bedroom dwellings up to 80sqm GFA	2.00
Three bedroom dwellings above 80sqm GFA	2.25
Four bedroom dwellings or larger	2.50
Affordable	e Housing
One bedroom dwellings	1.00
Two bedroom dwellings	1.25
Three bedroom dwellings	1.75
Four bedroom dwellings	1.75



- 2.2.3 The SPG goes on to state that a reduction of parking requirements will normally only be allowed in the following situations:
 - Within the Borough's 4 town centres defined in the Core Strategy and Policies DPD where public transport accessibility is generally high. Any reduction will be assessed against the following relevant factors:
 - 1. Distance from public transport node i.e. main railway station, bus station, main bus stop;
 - 2. Frequency and quality of train service;
 - 3. Frequency and quality of bus service;
 - 4. Availability and quality of pedestrian and cycle routes;
 - 5. Range and quality of facilities supportive of residential within a reasonable walking distance (or well served by public transport) e.g. retail, leisure, educational, and possibly employment.
 - Units specifically designed for single person occupation.
 - Residential conversions where there are limited off-street parking opportunities e.g. floors of accommodation above shops.
 - In Conservation Areas, where the character of appearance of the Conservation Area would be harmed by the impact of parked cars.

2.3 SURREY COUNTY COUNCIL VEHICULAR AND CYCLE PARKING GUIDANCE (2018)

2.3.1 Surrey's parking guidance recommends a minimum of one space per dwelling in town centre locations. However, it recognises that:

"reduced of even nil provision may be appropriate in support of demand management and the most efficient use of land."

2.4 REVIEW OF PROPOSALS AGIANST PREVAILING POLICY

- 2.4.1 On the basis of the prevailing policy on parking standards the proposed parking provision at Charter Square Phase 1C is considered to be appropriate.
- 2.4.2 Although Spelthorne's SPG standards are minimums, exceptions are permitted where certain conditions are met as numbered 1 to 4 above. The proposed development meets these conditions as described below:
 - 1. Distance from public transport node i.e. main railway station, bus station, main bus stop The site is located 450m from the railway station (equivalent to a six minute walk), 300m from the main bus station (a four minute walk) and has bus stop J located immediately outside of it on High Street.
 - 2. Frequency and quality of train service direct rail services are available to Reading, London Waterloo, Weybridge and Windsor & Eaton Riverside. Up to seven trains per hour operate to London Waterloo at peak times.
 - 3. Frequency and quality of bus service There are a total of 19 bus services operating within a short walk of the site (either from bus stop J or the main bus station). These provide access to destinations across the wider region including Slough, Windsor, Feltham,



- Hounslow, Sunbury, Kingston, Twickenham, and Heathrow Airport. There are up 27 departures per hour during the peak hours.
- 4. Availability and quality of pedestrian and cycle routes The site is served well by pedestrian and cycle facilities including the recently installed shared footway / cycleway on High Street, the shared path which leads to the station (and is free of traffic) and the signal-controlled crossings to the west of the railway bridge which take people into the town centre and pedestrianised section of the High Street.
- 5. Range and quality of facilities supportive of residential within a reasonable walking distance (or well served by public transport) e.g. retail, leisure, educational, and possibly employment As detailed within the Transport Statement, the site is located close to a number of schools, next door to the town centre and within a short walk of a number of other local facilities such as GPs, pharmacies, supermarkets etc.
- 2.4.3 Being located within the town centre on a site constrained by its size, the proximity of the railway bridge and poor visibility from Mill Mead, the proposed development is considered to comply with both the NPPF and the Surrey's prevailing parking standard which recognise that reduced or nil parking provision may be appropriate to support demand management and the most efficient use of land.
- 2.4.4 The applicant is committing to a number of measures (which are discussed later and in the Transport Statement) such as five years' worth of free car club membership for residents to help support lifestyles which do not rely on private cars and thereby reduce the demand for parking.



OPPORTUNITIES TO PROVIDE ON-SITE PARKING

3.1 SITE CONSTRAINTS

- 3.1.1 The site itself is relatively constrained and opportunities to provide new parking within the red line are limited and come with significant costs. The specific site constraints which affect this are:
 - 1. The Network Rail Railway Bridge The railway bridge structure has the effect of limiting the visibility between anyone attempting to exit Mill Mead and those drivers travelling eastbound on the High Street. It also means that vehicles entering Mill Mead (or indeed any alternative vehicular access that might be created into the site from the High Street) are not visible to eastbound vehicles within the required stopping site distance for a 30mph road. As such, any vehicle entering Mill Mead or the site from High Street increases the risk of a collision with eastbound vehicles.
 - 2. Mill Mead For the reasons described above, Mill Mead's junction with High Street is not considered a safe and sustainable access for anything other than emergency vehicle access. Consequently, its junction with High Street must be permanently closed to vehicular traffic as soon as the New Link Road is open. This requirement is set out within the S106 Unilateral Undertaking attached to the planning consent for Phase 1A and was introduced at the request of Surrey County Council.
 - 3. Charter Square Phase 1B to the north and Phase 1A to the east The site is bound to the east and north by Phases 1A and 1B, respectively. There is no opportunity to connect to or create a new access through either of the sites.
 - 4. High Street Creating an alternative vehicular access to the site from the High Street would not be possible for the same reasons that Mill Mead is an unsafe access. In addition, a new access would create operational problems for bus top J, potentially causing obstructions for buses themselves and resulting in unacceptable levels of visibility for drivers exiting any such access when the bus is in situ.
- 3.1.2 Taking the above into account, the only possible means of providing vehicular access into the site would be via the northern end of Mill Mead with cars having to enter and exit from the New Link Road. The major drawback to this is the loss of Mill Mead as a traffic-free route which will be particularly important as a route to the station for residents of Phase 1B and any future development on the Renshaw Industrial Estate. It would also impact the playspace to the west of Mill Mead which London Square is introducing and as part of the Phase 1A development.
- 3.1.3 Nonetheless, we have considered how such an arrangement could be designed in order to establish whether it is of any practical merit. The footprint of the site is too small to be able to accommodate a ground-floor car park along with the necessary back of house facilities, waste storage and residential entrances. This means the only alternative is to consider a basement car park. To access a basement car park, two-way vehicular access would need to be provided via either a ramp or pair of vehicle lifts.



3.2 ACCESS VIA A VEHICLE RAMP

- 3.2.1 A vehicle ramp would need to be sufficiently long enough to drop to the car park deck and clear the ground floor slab and services zone. For the purposes of this exercise, we have assumed that the car park clearance itself would need to be 2.2m (industry standard minimum), allowed for a services zone of 300mm and a ground floor slab of 600mm. This means the total vertical distance the ramp has to clear is 3.1m, excluding any further variations caused by level changes across the site.
- 3.2.2 The IStructE document 'Design recommendations for multi-storey and underground car parks' (March 2011) recommends that car parks with a vertical rise of more than 3.0m should have a ramp gradient not greater than 1 in 10, or 1 in 12 if the ramp is curved. It also sets out design parameters such as ramp widths including offsets from structure. Taking these into account we have designed a notional two-way access ramp via Mill Mead as shown by Figure 3.1. The drawing is included at Appendix A.
- 3.2.3 This demonstrates that around half the site area would need to be occupied by the ramp structure. The space remaining within any basement would not be suitable to provide parking owing to the area required for a parking aisle (which needs to be 6.0m wide) and the area required to turn into and off the ramps.

Total range length is 17 am based on a 5.12

| Some | South |

INDICATIVE TWO-WAY RAMP ACCESS TO BASEMENT FROM MILL MEAD

Figure 3.1 – Indicative Vehicle Ramp Access to a Basement

LONDON SQUARE

CHARTER SQUARE 1C

3.3 ACCESS VIA A PAIR OF VEHICLE LIFTS

- 3.3.1 Turning to vehicle lifts. These are usually used in particularly constrained sites where a ramp would wipe out too much or all of the usable area. They're not particularly useful for high-volume and high-turnover car parks due to the cycle time but can be used effectively for small residential or workplace car parks. They do still have some drawbacks such as the need to provide at least two (such that one is available in the event of downtime or maintenance) and the need to provide waiting space for vehicles off the public highway and other thoroughfares. Taking these requirements into account we have designed a notional pair of car lifts accessed via Mill Mead to take cars down to a potential basement car park. This is shown by Figure 3.2. The drawing is included at Appendix A.
- 3.3.2 Although the area required by vehicle lifts is less than for a ramp, they still take up a considerable amount of space and neutralise much of the ground floor. As with the ramp option, a significant portion of any basement is still required for turning into and out of the lifts, a waiting area in front of the lifts and a parking aisle. The resulting car park would, as with the ramp option, be very inefficient, costly and only deliver a small handful of spaces, whilst compromising the residential entrances, commercial space and pedestrian-only nature of Mill Mead.

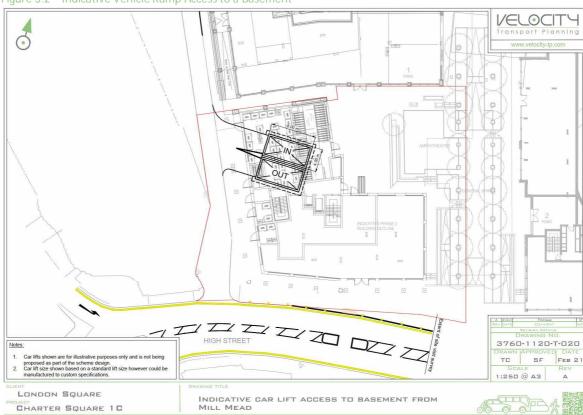


Figure 3.2 – Indicative Vehicle Ramp Access to a Basement

3.4 SUMMARY

3.4.1 As demonstrated above, providing on-site car parking is very challenging. A ground level car park would yield very few spaces once back of house and residential entry requirements are factored in. It would also not leave any meaningful space for surrounding public realm or employment spaces.



- 3.4.2 A basement car park would therefore be the only alternative option. However, the space required at ground and basement level to install either a two-way access ramp or a pair of vehicle lifts would still make this option impractical, achieving a very small number of spaces. This would result in a scheme which is contrary to paragraph 122 of the NPPF and Surrey County Council's parking standards which recognise the need to make the most efficient use of land.
- 3.4.3 Finally, and possibly the most significant drawback of any on-site car park would be the need to access it from Mill Mead via the New Link Road, undermining the design intent for Mill Mead to become a key pedestrian-friendly route to the station and thereby putting the safety of future users of the route at risk and cutting off the new play space from the wider Charter Square estate.



4 SUSTAINABILITY

4.1.1 As outlined within the Transport Statement accompanying the planning application, the applicant is committed to extending a number of initiatives including to residents of Phase 1C to support car-free and low-car lifestyles and enable them to shop and work locally. This aspiration is reflected of the NPPF which seeks to promote sustainable travel modes that limit future car use.

4.2 CYCLE PARKING

4.2.1 As detailed within the Transport Statement, the proposed development will deliver high-quality cycle parking for residents within secure and sheltered stores. The total proposed provision is 92 spaces which is significantly in excess of the minimum standards set out within Spelthorne's SPG.

The cycle stores will be equipped with 13 amp sockets to enable residents securely store and charge e-bikes.

4.3 CONTRIBUTION TOWARDS PEDESTRIAN NETWORK IMPROVEMENTS

4.3.1 The applicant supports the proposed contribution of £100,000 towards pedestrian facility improvements between the site, the railway station and the High Street. These will help maximise the potential for local journeys to be made on foot as well as adding to the attractiveness of the train as a means of making longer journeys.

4.4 FREE CAR CLUB MEMBERSHIP FOR FIVE YEARS

4.4.1 First occupying households in each unit will be entitled to receive five years' worth of free car club membership to Enterprise Car Club. This will enable residents to make use of the car club vehicles which are being installed within the town centre. The first of these has already been installed on Moormede Crescent and funded by the applicant as illustrated by Figure 4.1.



Figure 4.1: Enterprise Car Club Vehicle on Moormede Crescent



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4.5 FREE ONLINE GROCERY DELIVERY

4.5.1 The applicant will provide first occupying households with a free delivery pass for 12 months for online groceries to encourage them to shop without using a car and allow this to bed in. This will be made available for all major online supermarkets.

4.6 PERMIT-FREE AGREEMENT WITH SPELTHORNE BOROUGH COUNCIL

4.6.1 In line with Phases 1A and 1B the applicant proposes to enter into a legal agreement with Spelthorne Borough Council which will prevent all future residents of Phase 1C from obtaining a parking permit for any of the CPZs within the borough.

4.7 CONSULTATION INTO EXTENDING OR CREATING NEW CPZS

- 4.7.1 The parking survey results from both 2017 and 2021 demonstrate that whilst there is limited uncontrolled parking within the vicinity of the site, it is not fully utilised overnight and as such could present an opportunity for future residents of Phase 1C to keep a car on-street. It is these streets which are most susceptible to increases in parking demand.
- 4.7.2 The applicant recognises that Charter Square Phase 1C may result increased levels of parking stress in such circumstances. Whilst the parking stress levels reported in the surveys may not be so high as to be unacceptable the applicant recognises that additional parking demand can lead to local tensions and could also undermine the intent for Phase 1C to be an exemplar sustainable development. There are generally two forms of mitigation that can be considered to help mitigate this:
 - 1. Extending existing CPZs to cover uncontrolled streets; or
 - 2. Creating new CPZs to cover uncontrolled streets.
- 4.7.3 Both options have the effect of protecting the streets for use by permit holders only at certain times of the day or night. Visitors can still be catered for by allowing parking outside of the controlled hours or by issuing residents with a fixed number of short-stay / temporary visitor passes. All of this carries a cost to existing residents as the permits themselves need to be paid for (to cover the administrative cost of the CPZ) and there are usually limits placed on the number of permits issued per household. Therefore, consultation is essential in any plan to change or introduce new CPZs.
- 4.7.4 In recognition of this, the applicant proposes to fund consultations on extending existing CPZs or creating new CPZs as required up to a maximum of £10,000.



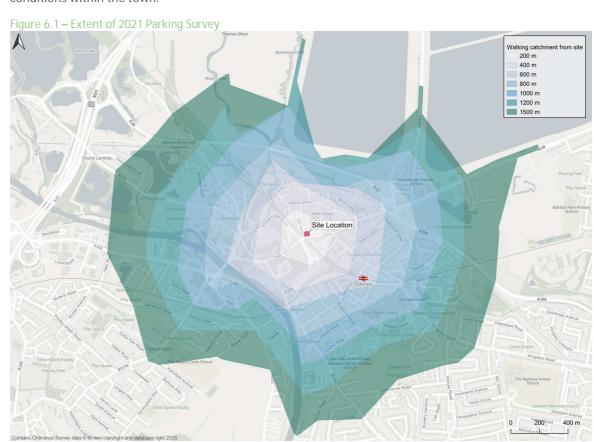
5 2017 PARKING SURVEY SUMMARY

- 5.1.1 During the course of preparing the planning application for Charter Square Phase 1A a parking beat survey was undertaken covering an area around 400m from the site. This is detailed within Section 3.7 of the Transport Statement. For reference, the results of the parking survey are summarised, and the full results are contained within Appendix B.
- 5.1.2 The significance of the 400m radius was twofold:
 - The industry standard 'Lambeth Methodology' for Parking Beat Surveys recommends that a study area of 200m walking distance from a residential development is studied as this is the furthest people are likely to walk between their front door and their car;
 - The survey methodology adopted for Charter Square doubled this distance to 400m in the interests of robustness. Where 400m from the site fell part-way along a road, the study area was extended to the end of the road or the next junction, in line with the Lambeth Methodology.
- 5.1.3 One count was undertaken between 00:30 and 05:30 on 26 September 2017. Another overnight count was undertaken between 00:30 and 05:30 on 27 September 2017 and hourly counts were undertaken from 07:00 to 20:00 on that day.
- 5.1.4 The parking survey confirmed that there were 107 unrestricted parking spaces available within the 400m study area, but the majority (441 spaces) of parking is restricted in the form of single yellow lines (SYLs) or permit holder bays.
- 5.1.5 The roads offering the majority of the unrestricted parking were Greenlands Road, Sidney Road and Rosefields Road of which only Sidney Road is within 400m walking distance from the site.
- 5.1.6 Sidney Road (capacity for 67 cars) is identified as being oversubscribed from 08:00 to 15:00 with up to 72 cars parked which is five cars above its capacity. Similarly, Rosefield Road (capacity for 58 cars) was identified as being at capacity or oversubscribed from 08:00 to 16:00 with up to 62 cars parked which is four cars above its capacity. Greenland Road (capacity for 30 cars) was identified as having between 29 and 30 cars parked between 08:00 and 15:00.
- 5.1.7 In summary, the results of the 2017 parking survey showed that there was a limited supply of uncontrolled parking close to the site. Although this was not fully occupied, the remaining capacity was relatively small, suggesting very little opportunity for future residents to keep a car locally.



6 2021 PARKING SURVEY ANALYSIS

6.1.1 A further parking beat survey was commissioned in 2021 to provide a more up to date picture of local parking conditions and to study a wider area. The survey radius was significantly extended compared to the 2017 survey as indicated by the diagram below, from 400m from the site to 1,500m. Although future residents would arguably not be prepared to walk as much as 1,500m from the site to their car, the extent of the study gives Spelthorne Borough Council a much fuller picture with regards to general parking conditions within the town.



- 6.1.2 The survey consisted of the following:
 - An inventory of all on-street parking conditions within the study area. For example, recoding whether a street has no parking restrictions, pay and display, residents' only parking or yellow lines and for what length, and the overall parking capacity of each street; and
 - A parking beat survey undertaken between the hours of 00:30 and 05:30 each night recording the number of cars parked within each road and within each section of parking such as a stretch of permit holder only bays. The results are compared to the capacity recorded in the inventory.



6.1.3 The parking beat survey itself was undertaken on two consecutive nights on 27 and 28 January 2021. The surveyed area is large and comprises varied types of restrictions for parking, the parking survey data is included at Appendix C. Table 6.1 lists the types of restrictions recorded as part of the street inventory for the parking beat survey and the overall occupancy observed each night of the survey. This data covers the entire survey area. A more detailed breakdown sorted by distance from the site is discussed later. It is worth noting that the survey also records illegal parking. For example, the number of vehicles parked illegally on double yellow lines and on bus stops.

Table 6.1 – Occupancy of On-Street Parking by Restriction

Restriction	Capacity	27/01/2021 00:30 -05:30	28/01/2021 00:30 – 05:30	% Max Occupancy
Bus Lane	12	0	0	0.0%
Bus Stop	92	2	2	2.2%
Car Club Bay	1	1	1	100.0%
Cycle Lane	1	0	0	0.0%
Disabled Bay	43	20	19	46.5%
Double Yellow	1769	37	42	2.4%
Dropped Kerb	2198	392	302	17.8%
Parking Bay	248	75	92	37.1%
Permit Holders Bay	288	235	234	81.6%
PRIVATE	5	4	4	80.0%
Road Works	21	0	0	0.0%
School Keep Clear	13	0	0	0.0%
Shared Use Bay	100	59	57	59.0%
Single Yellow	722	29	21	4.0%
Taxi Bay	8	0	3	37.5%
Too Narrow	715	16	10	2.2%
Unrestricted	4558	1790	1736	39.3%
Visitors Bay	2	1	1	50.0%
Zig-zag	99	0	0	0.0%

- 6.1.4 The table shows there were very few instances of illegal parking in the area with only about 2.4% of all Double Yellow Lines (DYLs) in the area used for parking overnight. There was also a small amount of illegal parking at bus stops.
- Almost a fifth of dropped kerbs (driveway accesses) were occupied by vehicles during the survey almost 400 cars in total. Parking across a driveway is illegal unless the property owner's consent has been given. Since we do not know whether this was the case during the survey it is reasonable to assume that these vehicles comprise some parked illegally, and some parked with the owner's consent (likely to be owners parking across their own driveway).



- 6.1.6 The inventory shows that the vast majority of kerb space within the study area comprises unrestricted parking 4,558 spaces. Of this, the maximum occupancy was 39.3%. This is to be expected given the extent of the study area most of this is well beyond the immediate vicinity of the site. The other significant components are single and double yellow lines. Only 4.0% of single yellow line kerb space was occupied during the study.
- 6.1.7 Without yet considering the distance of individual streets from the site, the survey demonstrates that the vast majority of kerbs are uncontrolled and can be used for parking. The occupancy of these kerbs was less than 50%. Parking stress is considered to occur above 80% occupancy where the number of available spaces is so low that it causes tensions between drivers and local residents. In this respect, there is very little evidence of parking stress with the exception of permit holder bays which were at 81.6% occupancy.
- These results of course cover a wide area, up to 1,500m from the site. Usually, a residential parking survey covers a radius of 200m from a site. This is in line with the industry standard 'Lambeth Methodology'. However, this radius is not suitable for all circumstances as people are often prepared to leave their car significantly more than 200m from their home, especially in areas outside of London where urban density and where people have a different perception of crime.
- 6.1.9 Due to the size of the parking survey (1,500m from the site), breaking it down in to walking distances from the site is a simple and accessible way to understand the detail of the results. Starting with the 200m radius described in the Lambeth Methodology and then extending further in 200 and 400m increments we have broken down the results the walking distances in Table 6.2.

Table 6.2 – Walk Time and Distance Bands

Walking Distance (m)	Walking Time (minutes)
0-200m	0-2.5
200-400m	2.5-5
400-800m	5-10
800-1200m	10-15
1200m+	15+

- 6.1.10 In looking at the parking survey results in this level of detail, the key areas of interest are:
 - The occupancy of resident only parking bays and shared use bays this is important as all of the resident only parking bays in the study area are not subject to restrictions overnight and these spaces are therefore available to anyone.
 - The occupancy of single yellow line kerb space again, this is important because single yellow line restrictions do not apply overnight and this kerb space is therefore available to anyone.
 - The occupancy of unrestricted kerb space this is important as this kerb space is available to anyone at all times.
- 6.2 AREA 1 WALKING DISTANCES: 0 200M
- 6.2.1 The area in the immediate vicinity of the site provides very little in the way of parking capacity. Table 6.3 shows the parking capacity and maximum occupancy recorded during the overnight surveys.



Table 6.3 – Parking Survey Results 0-200m from Site

Restriction	Capacity	27/01/2021 00:30 -05:30	28/01/2021 00:30 – 05:30	% Max Occupancy
Parking Bay	20	0	9	45.0%
Unrestricted	0	0	0	0.0%
SYL	22	0	0	0.0%

6.3 AREA 2 – WALKING DISTANCES 200 - 400M

6.3.1 This area is located between 2.5 and 5 minutes' walk from the site.

Table 6.3 – Parking Survey Results 200-400m from Site

Restriction	Capacity	27/01/2021 00:30 -05:30	28/01/2021 00:30 – 05:30	% Max Occupancy
Parking Bay	36	4	4	11.1%
Unrestricted	169	89	77	52.7%
SYL	248	3	2	1.2%
Residents Permit Bays	168	124	122	73.8%

- 6.3.2 Between 200 and 400m of the site there is some capacity for parking in unrestricted parking bays, but it is also possible to use the SYLs and other parking bays that are not restricted during the night. The unrestricted bays are the most useful as there is no restriction during the day or night. Within this band of the study area there is capacity for some 46 cars in unrestricted bays.
- 6.3.3 It is noted that the residents parking bays are well used and there is very minor usage of the SYLs suggesting that there is currently capacity for parking in the area. The area is within a reasonable walking distance and as such it is considered that residents of phase 1C could use the unrestricted parking available. Introducing parking restrictions here would discourage residents of Charter Square 1C from parking in the area.

6.4 AREA 3 – WALKING DISTANCES 400-800M

6.4.1 This area is located between 5 and 10 minutes' walk from the site.

Table 6.4 – Parking Survey Results 400-800m from Site

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Restriction	Capacity	27/01/2021 00:30 -05:30	28/01/2021 00:30 – 05:30	% Max Occupancy
Parking Bay	117	48	54	46.2%
Unrestricted	717	240	243	33.9%
SYL	224	17	11	7.6%
Residents Permit Bays	3	1	2	66.7%
Shared Use Bay	93	59	57	63.4%

6.4.2 There is substantial capacity for parking in unrestricted parking bays which could be used by residents of Charter Square 1C and the area is considered to be near enough for some residents to consider parking there overnight should they choose to own a car. Again. Extending existing CPZs or creating new CPZs could be a way to reduce the opportunity to park in this area.



6.5 AREA 4 – WALKING DISTANCES 800-1200M

6.5.1 This area is located between 10 and 15 minutes' walk from the site.

Table 6.5 – Parking Survey Results 800-1,200m from Site

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Restriction	Capacity	27/01/2021 00:30 -05:30	28/01/2021 00:30 – 05:30	% Max Occupancy
Parking Bay	17	1	0	5.9%
Unrestricted	1394	473	446	33.9%
SYL	167	3	3	1.8%
Residents Permit Bays	47	42	42	89.4%
Shared Use Bay	7	0	0	0.0%

6.5.2 There is significant capacity for parking using unrestricted parking bays. The area is however between 10 and 15 minutes' walk away from the site and it is considered unlikely that residents would be willing to walk this distance twice a day every day.

6.6 AREA 5 – WALKING DISTANCES 1200+

6.6.1 This area is located over 15 minutes' walk away.

Table 6.6 – Parking Survey Results beyond 1,200m from Site

Restriction	Capacity	27/01/2021 00:30 -05:30	28/01/2021 00:30 – 05:30	% Max Occupancy
Parking Bay	19	11	12	63.2%
Unrestricted	1143	375	337	32.8%
SYL	35	0	0	0.0%

There is significant availability of unrestricted parking in this area. Given the distance from the site (over a 15 minute walk) it is considered highly unlikely that residents of Charter Square 1C would choose to park this far away on a regular basis and as such it is concluded that parking restrictions are not required to discourage parking.

6.7 CUMULATIVE PARKING IMPACTS

- 6.7.1 Within the vicinity of the Charter Square Phase 1C site there are several sites which are the subject of live or consented applications which are yet to be occupied. The largest of these include the Renshaw Industrial Estate scheme and Berkeley's Eden Grove scheme on Fairfield Avenue and London Road.
- 6.7.2 The 2021 parking beat surveys indicate that there is a total overnight parking capacity for 5,939 cars. This comprises CPZ parking bays (where restrictions are not active overnight), shared use bays, single yellow lines and unrestricted kerb space. During the two overnight parking surveys beats undertaken in January 2021, the peak occupancy of these spaces was 37% and 36%. Parking stress (where residents find it difficult to find a parking space close to their home) is considered to occur when parking occupancy exceeds 85%.
- 6.7.3 On this basis, up to 2,859 spaces are available within the study area (a radius 1,500m of the Charter Square Phase 1C site). This is equal to 85% of total parking capacity less the peak occupancy observed during the survey.



- 6.7.4 Notwithstanding any future changes to CPZs that the Borough may wish to introduce, the existing unused parking capacity would indicate that a significant volume of additional parking demand could be added to the area before parking stress becomes an issue. This can be quantified by considering how the available capacity to a range of parking demand variables.
- 6.7.5 For example, the 2011 Census indicated that car ownership within the local output area (Spelthorne 004C) is 65% for flats and maisonettes. Most of this demand is unfettered in that residents within these properties can obtain CPZ parking permits. Translating this figure into unfettered parking demand would suggest that the available parking capacity within the study area could accommodate parking from the equivalent of 4,399 households, calculated as follows:
 - à X = 2,859 parking spaces available before parking stress becomes unacceptable
 - à Y = 0.65 2011 local car ownership data for flats and maisonettes
 - à X/Y = 4,399 household's worth of unfettered demand could be accommodated within the study area
- 6.7.6 This is an extremely robust calculation as it is assumes there is no CPZ restriction for new households, that no off-street allocated parking is provided for any new households, that no other supporting measures such as Travel Plans and car club incentives are provided. As such, in reality, the surrounding network could accommodate in excess of 4,399 additional households.

6.8 CONCLUSION

- 6.8.1 The results of the latest parking survey lead to a number of conclusions:
 - 1. Within the immediate vicinity of the site, up to a 200m walk, there is very little opportunity for parking. Most of the streets are subject to parking controls. The small amount of parking capacity that does exist was roughly 50% occupied.
 - 2. Between 200m and 400m of the site there is a significant amount of parking capacity in the form of single yellow lines and unrestricted parking. This is within a reasonable walk of the site and therefore could present an opportunity of residents of Phase 1C to keep a car without having a noticeable effect on parking stress. The resident only bays are very well utilised and close to the 80% threshold beyond which parking stress is likely to occur.
 - 3. Beyond 400m of the site the volume of uncontrolled parking capacity increases significantly but the occupancy remains relatively low. This parking would be available to residents of Phase 1C without a noticeable impact on parking stress. However, its distance from the site is likely to act as a deterrent to some.
 - 4. Overall, it is likely that any excess parking demand generated by Phase 1C could comfortably be accommodated within 400m of the site without having a noticeable impact on parking stress. It may therefore be appropriate to consider amending existing CPZs or creating new CPZs to cover those roads which are not currently subject to restrictions so as to dissuade Phase 1C residents from keeping a car. As described earlier, the applicant proposes a fund of £10,000 exc. VAT is made available to cover consultations into any such changes.
 - 5. Introducing parking controls on roads beyond 400m of the site may not be the most efficient use of resources as the proposals are unlikely to have an impact here given the available parking capacity nearby.



- 6. Compared to the 2017 parking survey, there appears to be more parking capacity within the equivalent study area. In other words, fewer cars were parked overnight in 2021 than in 2017.
- 7. The unoccupied parking spaces within the study area have the capacity to accommodate unfettered demand from the equivalent of at least 4,399 flats before on-street parking stress reaches unacceptable levels. This is far in excess of the housing which could be delivered locally over the draft Local Plan 2020 to 2035 plan period.
- To help understand where new parking restrictions could be focussed, a heat map has been prepared that graphically shows the overnight occupancy on each road within the surveyed area. The capacity and occupancy is based on overall parking usage of parking bays, unrestricted parking bays, permit holder bays, SYLs and shared use bays. Streets and roads that are green have less than 60% occupancy whilst those that are orange have 60-80% occupancy and red have over 80% occupancy and are therefore leading to parking stress.

Figure 6.2 – Heatmap Showing Occupancy of Streets



A review of the heatmap confirms that emphasis should be placed on providing parking restrictions within a 400m walking distance from the site and it is recommended that the focus is on the areas to the northeast, south and southeast of the site. These are considered to be more attractive to future residents due to easy access. Areas to the west of the site are more difficult to access due to rail lines, major roads and Thames river and residents are considered to be less likely to use those areas for parking.



7 PUBLIC CAR PARKS

- 7.1.1 An investigation into obtaining season tickets for the nearby Kingston Road car park has confirmed that these are only available for employees of local businesses and as such future residents of Charter Square phase 1C would not be eligible for season tickets. Figure 7.1 shows the location of all council operated car parks within Staines-Upon-Thames but season tickets for Elmsleigh MSCP, Tothill MSCP and Riverside Car Park are also only available for employees of local businesses.
- 7.1.2 Nonetheless, these town centre car parks do offer an opportunity for visitors to the site to park in a secure location which might otherwise be difficult during the day due to the local CPZ restrictions.
- 7.1.3 Given the proximity of some of the car parks to the site, the applicant would welcome the opportunity to discuss with SBC whether the season ticket scheme could be extended to residential users, either of the site or in general. It is probable that the existing car parks are not fully utilised at all times, particularly given the changes the COVID-19 pandemic has brought about to people's lives and the way they use town centres. Opening up the season ticket scheme to residential users may:
 - à Open up a new revenue stream to SBC;
 - à Make better use of the car parks themselves;
 - à Bring more activity to the town centre; and
 - à Take parking pressure off local streets.

Figure 7.1: Location of Council Operated Car Parks





8 ADDITIONAL BLUE BADGE PARKING

- 8.1.1 The proposed development includes the provision of three blue badge spaces located within the existing Phase 1A car park. These spaces are no longer required for Phase 1A and can be allocated to Phase 1C residents along with the 17 standard parking spaces discussed earlier.
- 8.1.2 Since the application was submitted, the applicant has sought to identify additional blue badge parking locations which would reduce the walk distance between the parking spaces and the residential entrances to Phase 1C. An opportunity has been identified within the New Link Road (to the rear of Phase 1B) to provide an on-street blue badge space.
- 8.1.3 This space would be in addition to the three identified within Phase 1A. The space can be marked out at 2.7m x 6.6m in line with the standard dimensions for on-street blue badge parking spaces defined by the Traffic Signs Regulations and General Directions Manual.
- 8.1.4 Swept path analysis has been used to demonstrate that providing such a bay would not adversely affect the safety or normal operation of the New Link Road which includes having service vehicles passing the bay when it is occupied. Figure 8.1 shows an extract of the swept path analysis and the proposed layout of the bay. A full-sized copy of the drawings is contained within Appendix D. Copies have also been provided to Surrey County Council under separate cover.



SWEPT PATH DF A 1 D.8M REFUSE
VEHICLE PASSING DISABLED BAY

Vehicle stopped on-street
lo service Phase 1C

SWEPT PATH DF A 1 DM RIGID VEHICLE
STOPPING BEHIND DISABLED BAY

AACKENT

Figure 8.1: Proposed Blue Badge Parking Space on New Link Road



9 CASE STUDIES

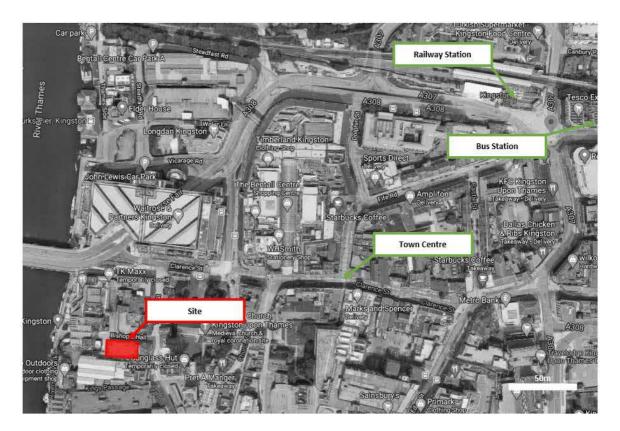
- 9.1.1 Residential developments which provide exclusively blue-badge on-site car parking or very low levels of standard parking are becoming commonplace across London, particularly in town centres and areas of high public transport accessibility. Access to local amenities, facilities, bus and rail connections means that residents who choose to live in such developments can do so easily without the need to have access to or own a car. In more recent years, this trend for car-free and low-car development has moved beyond Inner London and into Outer London and the home counties in locations which may not have the benefit of access to the London Underground network.
- 9.1.2 Car-free and low-car developments are no longer the preserve of London town-centres and GLA-referable schemes. As they begin to appear outside of London it is possible to characterise their defining characteristics:
 - à Access to Rail Generally within no more than a ten-minute walk of a railway station proving direct services to London and other major towns. Journey times typically no more than 40 minutes.
 - à Access to Buses Generally within a few minutes' walk of several bus stops with services providing access to a out of town locations such as supermarkets, hospitals, out of town retail and other centres of employment.
 - à Town Centre or Edge of Town Centre Location Located within a town centre or on its edge. Shops accessible within a few minutes' walk and substantial areas of pedestrian and cycle only space.
 - à New modes of mobility Local adoption of new modes of mobility such as car club provision, cycle hire, dockless cycle hire, e-bikes etc.
 - à High quality footway and cycleway provision Continuous footway provision throughout the local network supported by pedestrian crossing points catering for key desire lines and local routes to destinations such as rail stations and shops. Local cycleway provision
 - à Mostly one and two bedroom apartments Mostly one and two bedroom apartments with a higher proportion of younger professionals and fewer children compared to three and four bedroom homes. Occupiers will have social lives centred around activities which take place in town centre locations and London, accessible on foot, cycle or by public transport. Occupants generally more willing to adopt new modes of mobility than others.
 - à High proportion of first time buyers Typically first time buyers do not own or have access to a private car and are more willing to make use of adopt new modes of mobility to support their travel needs.



9.2 CASE STUDIES

Riverside Place, Kingston upon Thames

Promotor	Accumulate Capital and Rose Portfolio Ltd
Residential Accommodation	26 apartments
Residential Parking Ratio	Car-free
Planning Status	First occupations taking place



9.2.9 Riverside Place is located a short walk from the town centre and Bentalls Shopping Centre. The railway station is located around seven minutes' walk from the similar, similar to that of Charter Square Phase 1C. The scheme is entirely car-free and this was supported by officers on the basis of the site's location and access to public transport. The developer also entered into a permit-free agreement. First occupations are expected to take place this year.



Elizabeth House, Woking

Promotor	U+I Group
Residential Accommodation	94 apartments
Residential Parking Ratio	0.2 spaces per HH
Planning Status	On Site

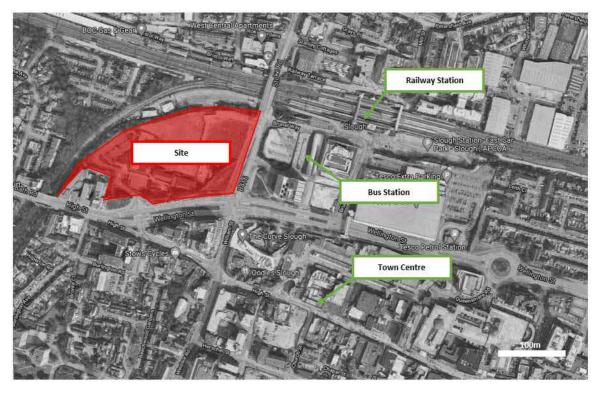


9.2.18 Elizabeth House is currently on-site. Located close to Woking railway station it will provide 94 apartments supported by allocated residents parking in the order of around 0.2 spaces per HH. The Victoria Square scheme which is currently on-site will re-provide town centre parking, which will also be available to Woking residents who wish to purchase a season ticket.



North West Quadrant, Slough

Promotor	Slough Urban Renewal	
Residential Accommodation	c 1,000 apartments	
Residential Parking Ratio	0.3 spaces per HH	
Planning Status	In determination, no objections on highways or parking grounds	

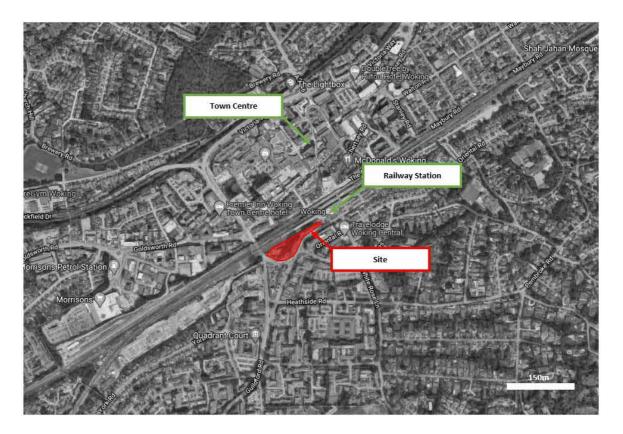


9.2.27 North West Quadrant, Slough is located on the edge of Slough town centre. Most of the site will be within approximately five minutes' walk of the station. Rail services from Slough are frequent with direct journey times into London Paddington from 25 minutes. When Elizabeth Line services commence service, frequencies will be further increased with similar journey times (27 minutes to London Paddington).



Centrium, Woking

Promotor	Barratt Southern Counties
Residential Accommodation	270 apartments
Residential Parking Ratio	0.7 spaces per HH
Planning Status	Fully occupied
Observed Parking Occupancy	31% uptake (overnight observation, April 2021)



9.2.38 Centrium has been fully occupied for well over ten years now. It houses 240 apartments supported by a surface level and undercroft parking area for residents. Parking was provided at a rate of 0.7 spaces per HH. On-site observations made during April 2021 indicated that 31% of spaces were occupied suggesting a majority of apartment occupiers do not need or wish to make use of the on-site parking facilities.



Victoria Square, Woking

Promotor	Victoria Square Woking Ltd
Residential Accommodation	429 apartments
Residential Parking Ratio	Car-free (use of town centre parking)
Planning Status	On-site



9.2.47 Victoria Square is effectively a town centre regeneration, consuming much of the town centre car parks and legacy shopping centre. Some of the town centre parking provision will be re-provided primarily for retail and town centre visitors. Some 429 apartments are being built and are currently on-site. These will not be supported by any allocated on-site parking for residents and this marks a step-change for Woking. Residents who do require parking will be able to purchase a season ticket and park in the new public car parks being constructed on the site.



10 PHASE 1A CAR PARK OCCUPANCY AND RELEASE

10.1 OCCUPANCY SURVEY

- 10.1.1 Phase 1A is now almost completely sold and occupied. Of the 260 apartments within the building, 255 have been sold. In order to understand the occupancy of the 217 space car park, surveys were undertaken during the day and overnight. A snapshot count of the car park's occupancy was undertaken on the following dates:
 - à Tuesday 11 May 2021 at 14:00 (daytime survey)
 - à Thursday 13 May 2021 at 01:00 (night-time survey)
- 10.1.2 The night-time survey is the most important as this is when the car park occupancy is likely to be at its highest. The time and methodology of the survey is consistent with the 'Lambeth Methodology for Parking Surveys' which is used industry wide. The results of the survey are summarised by Table 10.1.

Table 10.1 – Phase 1A Car Park Occupancy Results

	Tuesday 11 th May (Daytime	Thursday 13 th May (Night-time	
	Survey)	Survey)	
Time of Survey	14:00	01:00	
Car Park Capacity	217	217	
Occupancy (vehicles)	93	122	
Occupancy (rate)	43%	56%	
Available Spaces	124	95	

10.1.3 Given there are five unsold apartments within Phase 1A an adjustment has been made to the above results to recognise that occupancy could be slightly higher once the five apartments become sold. This adjustment is summarised in Table 10.2 where the respective occupancy data is increased proportionately. For example, the surveyed occupancy on Tuesday 11th May was 93 vehicles against 255 sold apartments. The 255 sold apartments is 98% of the total number of apartments which means the observed occupancy should be increased by a factor of 1.02 (1/98). This results in a revised occupancy of 95 vehicles on that day.

Table 10.2 – Phase 1A Car Park Occupancy Results Adjusted for Unsold Apartments

	Tuesday 11 th May (Daytime	Thursday 13 th May (Night-time	
	Survey)	Survey)	
Car Park Capacity	217	217	
Adjusted Occupancy (vehicles)	95	125	
Adjusted Occupancy (rate)	44%	58%	
Available Spaces	122	92	

- 10.1.4 During the course of undertaking the surveys a number of observations were made:
 - 1. A number of cars have evidently not been moved for a prolonged period of time, evidenced by the amount of dust that had gathered on them;
 - 2. There were a handful of motorcycles parked during both surveys but these were parked in areas separate to the marked-out parking bays; and



3. The general occupancy of the car park was considered to be typical according to the site concierges who met the survey personnel.

10.2 PHOTOS FROM OCCUPANCY SURVEY

During the course of the survey, photographs were taken to support the survey data and to evidence the observations above. A selection is shown below in Figures 10.1 onwards.



Figure 10.1: Car parked on level 1 of Phase 1A car park gathering dust

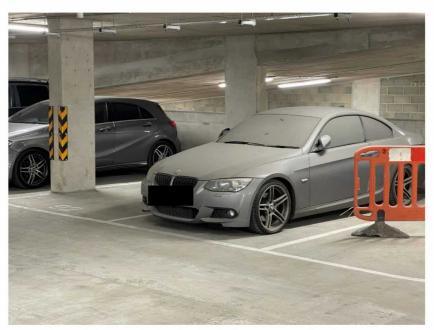


Figure 10.2: Car parked on level 2 of Phase 1A car park gathering dust



Figure 10.3: Typical view of Phase 1A car park showing few occupied spaces

10.3 RELEASE OF SPACES FROM PHASE 1A CAR PARK

- 10.3.1 Since the previous revision of this Technical Note the applicant has been able to confirm that a total of 20 unsold parking spaces within the Phase 1A car park can be released and allocated to apartments within the proposed development of Phase 1C. This includes three blue badge spaces within the car park which were already identified for use by Phase 1C blue badge holders.
- 10.3.2 The result of this allocation means that the total proposed parking provision at Phase 1C would be 21 spaces comprising 20 spaces within the Phase 1A car park and an additional blue badge space on the New Link Road already identified. This is the equivalent to a parking ratio of 0.32 spaces per household.
- 10.3.3 The reduction in parking spaces allocated to Phase 1A means that the total Phase 1A parking provision reduces from 217 spaces to 197. This is the equivalent to a parking ratio of 0.76 spaces per household. Although this is a reduction from the existing provision, the occupancy survey would indicate that overnight parking occupancy would still only reach 62% which suggests that many of the flats which own a space do not own a car.
- 10.3.4 The combined parking ratio across Phase 1A and 1C would be 0.67 spaces per household. A summary is provided by Table 10.3.

Table 10.3 - Proposed parking ratios across phases 1A and 1C

	Phase 1A	Phase 1C	Combined
Dwellings	260	64	326
Parking Spaces	197	21	218
Parking Ratio (per HH)	0.76	0.33	0.67



11 SUMMARY AND CONCLUSION

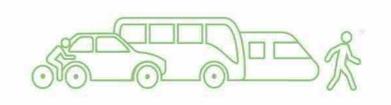
- 11.1.1 This Technical Note has been prepared by Velocity Transport Planning to provide further information on parking and justification for the proposed level of parking at Charter Square Phase 1C.
- 11.1.2 The proposed development will provide 64 new homes. Owing to the site's spatial constraints, its location within the town centre, within five minutes' walk of the railway station and with immediate access to buses from the High Street there is no parking proposed on site. A total of 20 spaces have been identified within the Phase 1A car park which are unsold and which will be allocated to Phase 1C residents. Three of these are blue badge spaces. A further blue badge space will be created on the new link road.
- 11.1.3 Providing parking on-site is challenging given the local constraints such as Mill Mead and the railway bridge. Although possible in theory, providing an on-site car park would yield very few spaces once a vehicle ramp or pair of car lifts has been installed. The greatest cost however would be having to allow regular traffic movements on Mill Mead from the New Link Road. Mill Mead is due to be closed to be vehicular traffic and will become an important local route for pedestrians accessing the town centre and station. It will also be used to access the plays space the applicant is installing as part of the wider Charter Square master plan. In this respect, introducing a car park on-site with access via Mill Mead would at best take away an important pedestrian facility, and at worst jeopardise peoples' safety.
- 11.1.4 The result of the latest parking survey conducted in January 2021 indicate there is sufficient on-street parking capacity between 200 and 400m of the site. The capacity would be sufficient to accommodate parking demand from Phase 1C without leading to unacceptable levels of parking stress. However, allowing this to occur might undermine the intention for Phase 1C to be a sustainable development. The applicant is therefore offering a fund of up to £10,000 to cover consultations into amending existing CPZs or creating new CPZs to reduce the availability of uncontrolled parking locally. The applicant will also enter into a permit-free agreement with Spelthorne Borough Council to prevent residents of Phase 1C from obtaining CPZ permits.
- 11.1.5 The unoccupied parking spaces within the study area have the capacity to accommodate unfettered demand from the equivalent of at least 4,399 flats before on-street parking stress reaches unacceptable levels. This is far in excess of the housing which could be delivered locally over the draft Local Plan 2020 to 2035 plan period.
- 11.1.6 To further support low-car lifestyles the applicant is extending a number of initiatives include five years' worth of free car club membership, free online grocery deliveries for a year, substantial on-site cycle parking which shall include outlets to charge e-bikes and fibre broadband to each apartment.
- 11.1.7 Case studies of other schemes within the Home Counties and Outer London Boroughs indicate that the adoption of a car-free or low-car approach to development is becoming more and more common. This is particularly the case in areas which share the same characteristics as Staines-upon-Thames such as being within 40 minutes of London by rail. In some examples, such as Victoria Square Woking, car-free development has been permitted but is supported by offering residents the opportunity to purchase season tickets for town centre public car parks something that could be considered for Charter Square Phase 1C. An overnight observation of one established scheme in Woking, with very high levels of parking provision, indicates that parking occupancy amounts to 31% of households.



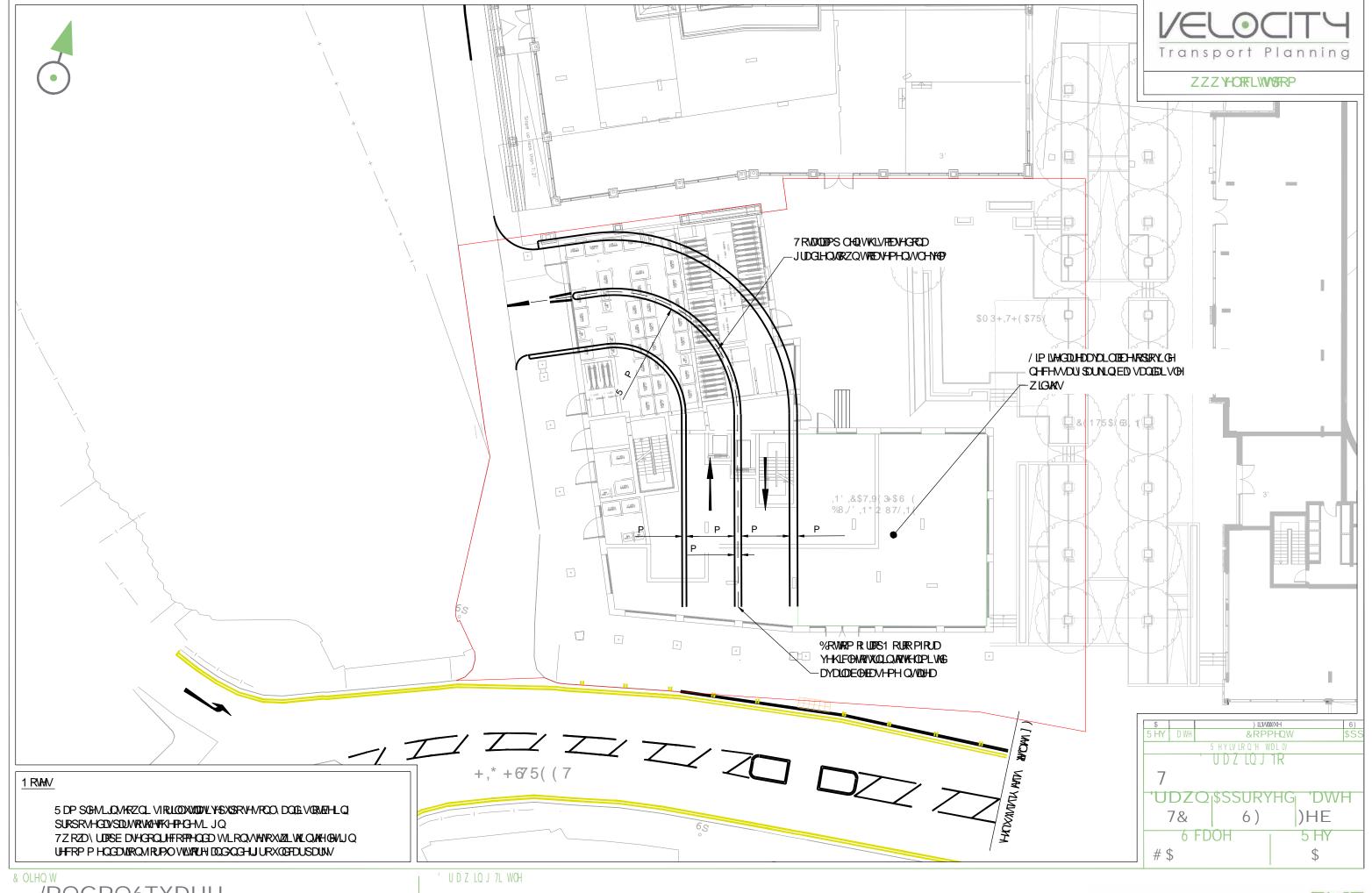
- 11.1.8 An occupancy survey of the car park within Phase 1A indicated that parking occupancy peaks at 56%. A total of 20 of the 217 parking spaces within Phase 1A are unsold and the applicant is able to allocate these to residents within Phase 1C. This means that the proposed development can be provided with a total of 21 parking spaces comprising 17 standard spaces within phase 1A, three blue badge spaces within phase 1A and a single blue badge space proposed on the new link road. This results in a total proposed parking ratio for Phase 1C of 0.33 spaces per household. Phase 1A would be left with a total of 197 parking spaces, which would still comfortably accommodate the outturn parking demand from Phase 1A residents.
- In conclusion, whilst the local on-street parking levels are not at a level which would lead to parking stress once Phase 1C is occupied, further CPZ controls could be introduced within 400m of the site to dissuade residents from keeping a car. This approach coupled with the initiatives the applicant is proposing to support low-car lifestyles and the allocation of 20 spaces from the Phase 1A car park is considered appropriate in policy terms and robust enough to adequately mitigate the risk of overspill parking impacts.







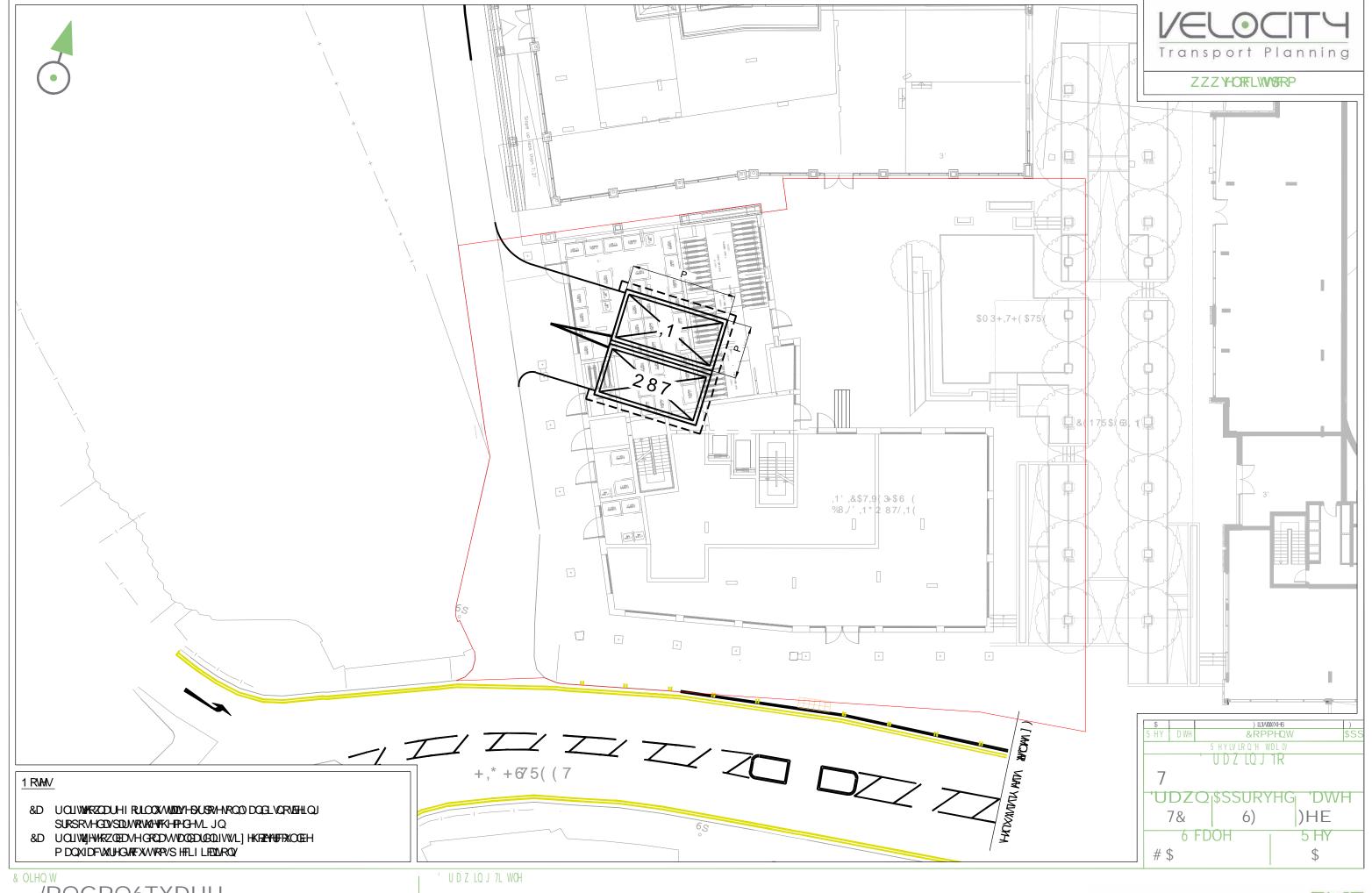




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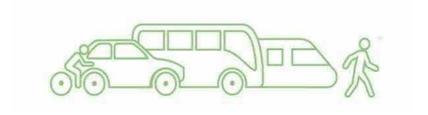
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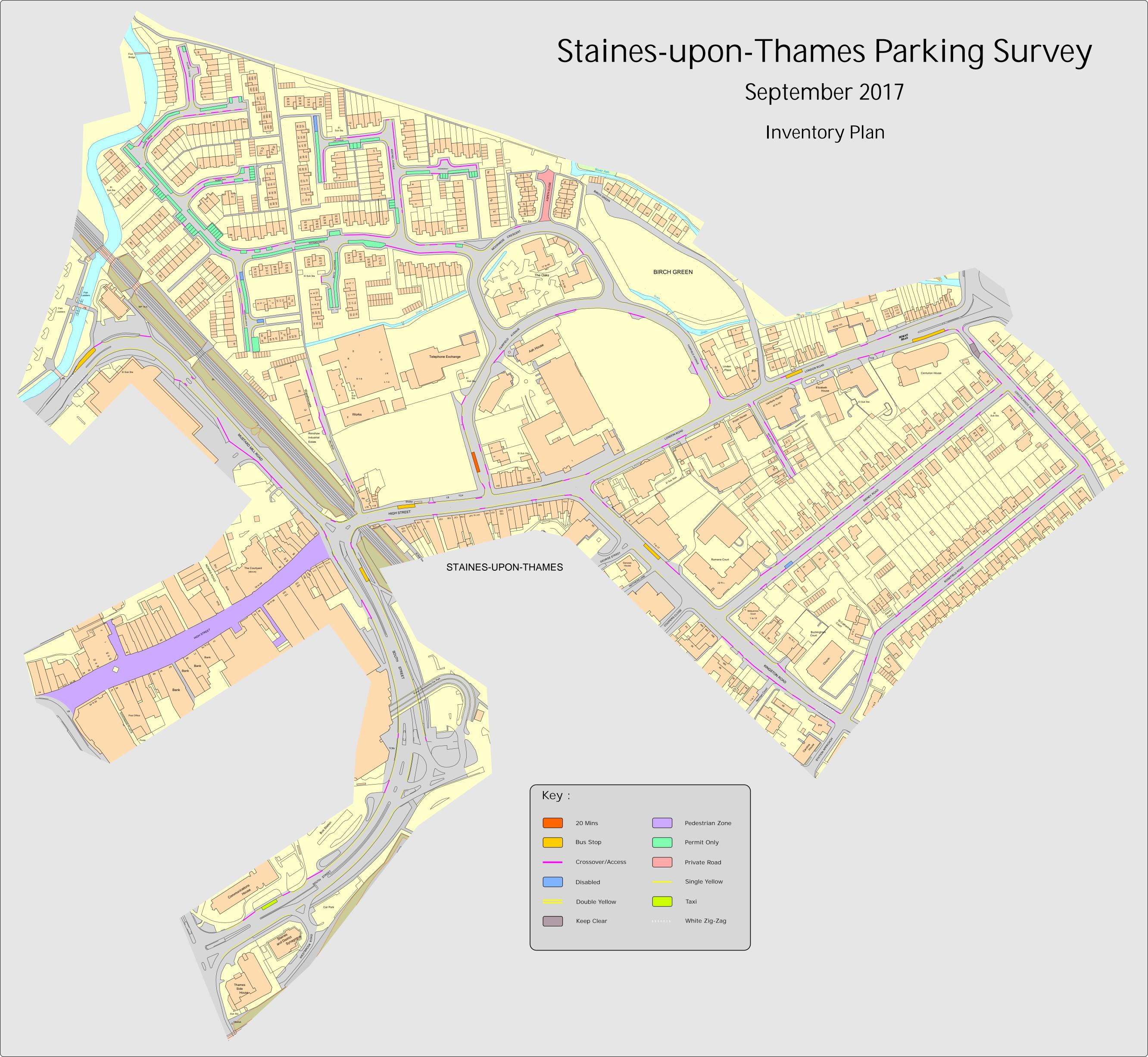










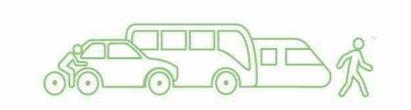


Parking Inventory

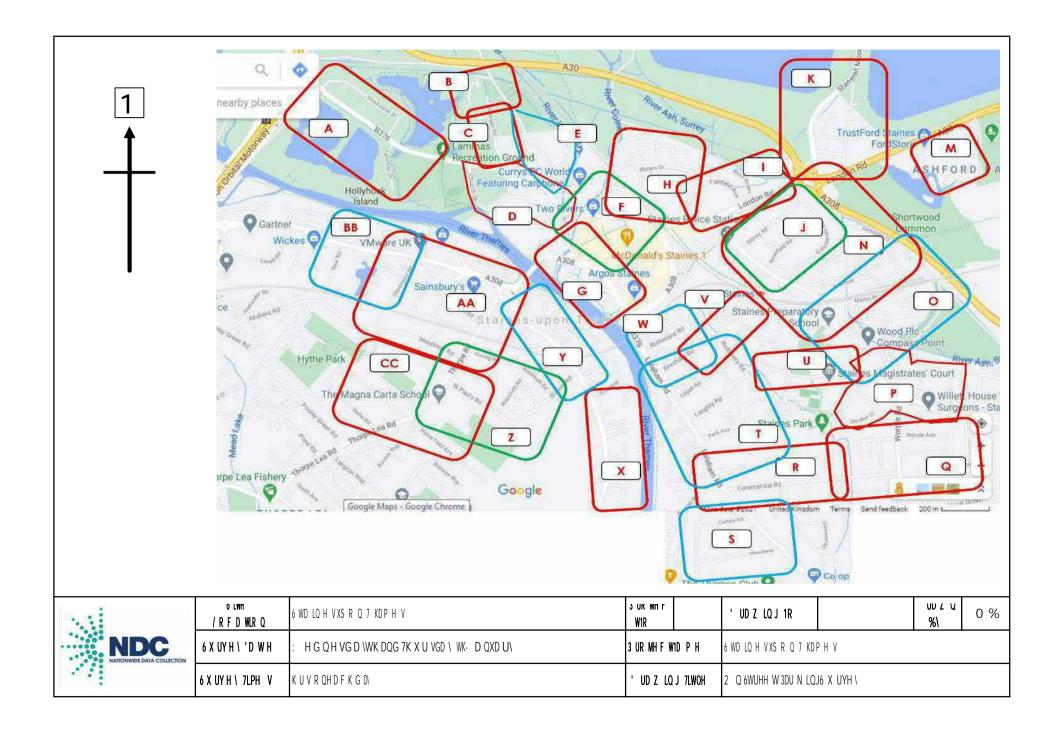
Parking Inv		tection in metres	5																																				
Standard Parki	ng Spac	tection in metres e Length in metres	5			26.09	9.17														V	Wednesd	day 27th	of Septe	ember 20	17													
		Parking Inventory				00:30 -	05:30	00:30 -	05:30		07:00		08:00		09:00		10:00		11:00		12	2:00	13	3:00	1	4:00	1	5:00		16:00		17:0	D	18:00		19:00		20:0	0
Road Name	Side	Section	Parking Type	Length (m)	Bays	Parked	Stress	Parked	Stress	Parked	Spaces	Parked	Spaces	Parked	Spaces	Stress	Spaces	Stress Parked	Spaces	Stress	Parked	Stress	Parked	spaces Stress	Parked	Spaces	Parked	Spaces	Parked	Spaces	Stress	Spaces	Stress	Spaces	Stress	Spaces	Stress	Parked	Stress
		High Street to Moormede Crescent	20 Mins Crossover/Access Double Yellow	17.6 25.3	3 -	0	4 0%	0	4 09	6 0 - 0	4 0	- 0 - 0	4 (- 0 - 0	4	0%	0 4 0 - 0 -	0%	0 4	0%	0	4 0%	0 0	4 09	- 0 - 0	4 09	0	4	0% C	4	0%	0 4 0 -	0%	0 4	0%	0 4 0 - 0 -	0%	0 4	0%
Fairfield Avenue	North	Moormede Crescent to Moormede Crescent	Single Yellow Single Yellow Crossover/Access	83.7 18	13	0 1	3 0% 4 0%	0		6 0 6 0	13 0'	% 0 % 0	13 (% 1 % 0	12	8% 0%	4 9 0 14	31% 0%	1 12 0 14	8% 0%	0	13 0% 14 0%	0	13 09 14 09	6 0	12 89 14 09	0	12	8% 1 0% 0	12	8% 0%	0 13 0 14	0%	0 13	0%	0 14	15% 0%	0 14	31%
Tail Held Averide		Moormede Crescent to London Road	Double Yellow Single Yellow	35.5 94	17	0 1	7 0%	0	17 09	- 0 6 1	16 6	- 0	16 6	- 0 % 0	17	0%	0 -	0%	0 -	0%	0	17 0%	0	17 09	- 0 6 0	17 09	0	17	- C	17	0%	0 17	0%	0 -	0%	0 -	0%	0 1	0%
	South	High Street to London Road	Crossover/Access Double Yellow Single Yellow	90.1 48 254.7	3 -	0 0 0 5	0 0%	0	48 49	- 0 - 0	50 0	- 0 - 0	50 (- 0 - 0	49	2%	0 - 1 - 2 48	4%	0 -	0%	0	50 0%	0	50 09	- 1 - 0	50 09	0	50	- C	49	2%	0 - 0 - 0 50	- 0%	0 -	- 0%	0 -	2%	0 -	3 4%
	East	No.44 Greenlands Road to London Road	Crossover/Access Double Yellow Keep Clear	66.9 2 11.4	2 -	0		0		- 0 - 0	-	- 0 - 0		- 0 - 0			0 -		0 - 0 - 0 -	#	0		0	-	- 0 - 0		0	-	- C		=	1 - 0 - 0 -		0 -		0 -	7	0 0	
Greenlands		Rosefield Road to Sidney Road	No Restriction Crossover/Access Double Yellow	82.2 14.3 18.7	3 -	2 1 0	0 17%	3 0	9 259	6 7 - 0	5 58	6 11 - 0	1 92	% 11 - 0	1	92% 1	0 -	92% 1	1 1	92%	11 0	1 92%	11 0	1 929	6 11 - 0	1 929	12 0	0 10	0% 9 - C	3	75%	6 6	50%	7 5	58%	4 8 0 -	33%	3 9	25%
Road	West	· · · · · · · · · · · · · · · · · · ·	No Restriction Crossover/Access	61.7 9.3		1 1	0 9%	0	10 99	6 7	4 64	- 0	1 91	% 10 - 0	1	91%	9 2	82% 1	1 0	100%	11	0 100%	11	0 1009	6 11 - 0	0 1009	11	0 10	0% 6	5	55%	4 7	36%	2 9	18%	3 8	27%	2 9	18%
		Sidney Road to London Road	Double Yellow Keep Clear No Restriction	12.5 39.3	5 - 3 7	0 5	2 71%	0	3 579	- 0 6 8	-1 114	- 0 - 0	-1 114	- 0 % 8	-1	114%	0 - 8 -1	114%	0 - 7 0	100%	0	-1 114%	0	-1 1149	- 0 6 7	0 1009	0	1 8	- C	1	86%	0 -	86%	0 -	71%	0 -	57%	0	71%
		Thames Street to Tilly's Lane Tilly's Lane to Norris Road Norris Road to Mustard Mill Road	Pedestrian Zone Pedestrian Zone Pedestrian Zone	75 98 106.5		0		0		- 0 - 2		- 0 - 0	=	- 0 - 2		=	0 -		0 -		0		0		- 0 - 0		0	1	- C		#	0 -		0 -	=	0 -	#	0	
	North	Mustard Mill Road to Mill Mead	Double Yellow Bus Stop	15 12.8	3 -	0		0		- 0 - 0		- 0 - 0		- 0 - 0			0 -		0 -		0		0		- 0 - 0		0		- C			0 -		0 -		0 -	\equiv	0 -	
High Street		Mill Mead to Fairfield Avenue	Crossover/Access Double Yellow Crossover/Access	9.7 88.1	1 -	0		0	1	- 0 - 0		- 0 - 0	=	- 0 - 0	=	=	0 -		0 -	-	0	1 1	0	-	- 0 - 0		0	-	- C			0 -		0 -	1	0 -	#	0 0	H
	South	Fairfield Avenue to London Road Thames Street to South Street	Double Yellow Pedestrian Zone	78.8 281.1		0		0	₽	- 0		- 0		. 0	-	=	0 -	\pm	0 -	=	0		0	\pm	- 0		0	1	- 0	H	=	0 -		0 -	+	0 -	#	0 -	
	South	South Street to Kingston Street Waters Drive to Hawksway	Double Yellow Crossover/Access	25.2 186 21.8	3 -	0		0		- 0 - 0		- 0 - 0		- 1 - 0			0 -		0 - 1 -		0		0		- 0 - 0		0		- C		=	0 -		0 -	1	0 -	1	0	
	East	Hawksway to Northern Extent	Double Yellow Crossover/Access Double Yellow	36.5 38.6 7.2	-	0		0	-	- 0 - 0		- 0 - 0		- 0 - 0		=	0 -		0 -	=	0	1 1	0	1	- 0 - 0		0		- 0		=	0 -		0 -	=	0 -	#	0	Ħ
Kestrel Avenue	West	Waters Drive to Lark Avenue	Crossover/Access Double Yellow Permit Only	47.6 22		0		0	. 1009	- 0 - 0		- 0 - 0		- 0 - 0	-	-	0 -	. 2004	0 -	60%	0	1 90%	0	1 000	- 0 - 0		0	- 1 0	- C	-		0 -	100%	0 -	100%	0 -	100%	0 -	100%
		Lark Avenue to Northern Extent	Crossover/Access Double Yellow	3	-	0		0	-	- 0 - 0	-	- 0 - 0	-	- 0 - 0	-	-	0 · 0 ·	-	0 -	-	0		0	-	- 0 - 0	-	0		- C	-	-	0 -	-	0 -	-	0 -	-	0	
Kingfisher Drive	East	Southern Extent to Waters Drive	Disabled Double Yellow Permit Only	45.1 44.3	1 - 1 -	1 11	2 0% 0 100%	0	1 919	6 0 - 0	2 U - 4 64	- 0 6 4	7 36	- 0 % 6	5	55%	0 2 0 - 6 5	55%	0 2 0 -	55%	0	7 36%	0	7 369	- 0 6 5	6 459	0	5 5	- 0 5% 6	5	55%	0 2 0 -	55%	0 - 7 4	64%	0 2 0 - 8 3	73%	0 2	2 0% 1 91%
Kingrisiici Dive	West	Southern Extent to Waters Drive	Crossover/Access Double Yellow Permit Only	21.7 39.9 22	2 4	0 0	0 100%	0 0 4	0 1009	- 0 - 0	0 100	- 0 - 0	2 50	- 0 - 0	- 2	50%	0 - 0 - 1 3	25%	0 - 0 - 2 2	50%	0	2 50%	0	2 509	- 0 - 0	3 259	0	3 2	- C	- 3	25%	0 - 0 - 3 1	75%	0 · 0 · 3 1	75%	0 -	100%	0 0	100%
		Rosefield Road to Sidney Road	Crossover/Access Double Yellow	53.5 24.5		0		0		- 0 - 0		- 0 - 0		- 0 - 1	-		0 -		0 -		0		0	5 179	- 0 - 0		0		- C	-	- 094	0 -		- 0	- 0%	- 0		0	
	East		Single Yellow White Ziq-Zaq Bus Stop	18		0		0	-	- 0 - 0	-	- 0 - 0	-	- 0	-	-	0 -	-	0 -	-	0		0	-	- 0 - 0	-	0	-	- C	-	-	0 -	-	0 -	-	0 -	-	0	
		Sidney Road to London Road	Crossover/Access Double Yellow No Restriction	39.8 31	6	0	3 50%	0	2 679	- 0	0 100	- 0	0 100	- 0	0	100%	0 -	100%	6 0	100%	0	0 100%	1 6	0 1009	- 0	0 1009	0	1 8	- C	- 0	100%	0 -	83%	0 -	83%		33%	0	50%
Kingston Road		Station Approach to Cooper Class	Single Yellow Crossover/Access No Restriction	36.9 87.9	7	0	7 0% 1 0%	0	7 09 0 1009	6 0 - 0	7 0' - 0 100'	6 0 - 0	7 C	% 0 - 0 % 1	7	0% - 100%	0 7 1 -	100%	0 7 0 -	100%	0	7 0%	0	7 09 - 0 1009	6 0 - 0	7 09 - 0 1009	0	6 1	4% C	7	100%	0 7 1 -	100%	0 7 1 -	0% - 100%	1 -	29%	1 1	29%
	West	Station Approach to Coopers Close	Single Yellow White Zig-Zag	53.8 18	8 8	0	8 0%	0	8 09	6 0 - 0	8 0	- 0	8 (% 0 - 0	8	0%	0 8	0%	0 8	0%	0	8 0%	0	8 09	6 0 - 0	8 09	0	8	0% C	8	0%	0 8	0%	0 8	0%		0%	0 8	0%
		Coopers Close to Matthews Lane Matthews Lane to George Street	Bus Lane Double Yellow Double Yellow	7.5	3 -	0	-	0		- 0 - 0		- 0 - 0		- 0	-		0 -		0 -		0		0		- 0 - 0		0		- C			0 -		0 -		0 -	圭	0	\equiv
		George Street to High Street	Crossover/Access Double Yellow Crossover/Access	3.7 54.7 37		0		0		- 0 - 0	-	- 0 - 0		- 0 - 0			0 -		0 -	_	0	1 1	0	-	- 0 - 0		0	-	- 0	-	-	0 -		0 -		0 -	#	0 0	
	North	Western Extent to Kestrel Avenue	Double Yellow Single Yellow Crossover/Access	12.2 28.7 29.2	-	0 1		2		- 0 - 2	-	- 0 - 1		- 0 - 0	=		0 -		0 -	=	0		0		- 0		0 1		- C		=	0 - 1 -		0 -	=	0 -	#	1	
Lark Avenue	South	Western Extent to Kestrel Avenue	Double Yellow Permit Only Single Yellow	43.8		0 8	1 89%	0 7	2 789	- 0 6 6	3 67	- 0	3 67	- 0	5	44%	0 - 4 5	44%	0 -	22%	0 4	5 44%	0 4	5 449	- 0 6 3	6 339	0 2	7 2	- C	- 8	11%	0 -	11%	0 - 3 6	33%	0 - 4 5	44%	7 :	78%
	West	Southern Extent to Northern Extent	Disabled Permit Only	17.2 45.2	9	3 8	0 100% 1 89%	3	0 1009	6 1	2 33	6 1 6 6	2 33	% 1 % 5	2	33% 56%	1 2	33% 44%	2 1	67% 44%	1 4	2 33%	1 4	2 339	6 1 6 6	2 339	1 4	2 3	3% 2 4% 5	1 4	67% 56%	2 1	67% 67%	1 2 7 2	33% 78%		67% 67%	2 1	67%
	No and	High Street to Fairfield Avenue Fairfield Avenue to Birch Green	Double Yellow Double Yellow Bus Stop	119.5 27.5	5 5	0	5 0%	0	5 09	- 0 6 0	5 0	- 0 6 0	5 (- 0 % 0	5	0%	0 5	0%	0 -	0%	0	5 0%	0	5 09	- 0 6 0	5 09	0	5	- 0 0% 0	5	0%	0 - 0 5	0%	0 5	0%	0 5	0%	0 !	0%
London Road	North	Birch Green to Staines Bypass	Crossover/Access Double Yellow Single Yellow	41.2 10 117.6	2 -	0 0	1 50%	0	9 599	- 0 - 0	15 32	- 0 - 0	14 3/	- 0 - 0	14	36%	0 - 0 - 9 13	41%	0 - 0 -	36%	0	13 41%	1 0	12 459	- 0 - 0	13 419	0	14 3	- 0 - 1	14	36%	0 - 0 - 7 15	32%	0 - 0 - 8 14	36%	0 - 0 - 7 15	32%	0 -	45%
	Country	Kingston Road to New Street	Crossover/Access Double Yellow	132.9		0		0		- 0		- 0		- 0			0 -		0 -		0	-	0		- 0 - 0		0		- C			0 -		0 -		0 -	\equiv	0	
	South	New Street to Greenlands Road	Bus Stop Crossover/Access Double Yellow	44.6 113.6	3 - 5 -	0		0		- 0 - 0	-	- 0 - 0		- 0 - 0	-		0 -		0 - 0 -		0		0		- 0 - 0		0		- C			0 -		0 -		0 -	#	0 0	
Mill Mead	East	High Street to Northern Extent	Crossover/Access Double Yellow Single Yellow	32.1 4 119.3		0		0	-	- 0 - 0	-	- 0 - 0	-	- 0 - 0	-	-	0 -		0 -	-	0		0	-	- 0 - 0	-	0	-	- 0 - 0	-		0 -		0 -		0 -	#	0 0	
	West	High Street to Northern Extent	Crossover/Access Double Yellow Single Yellow Double Yellow	55 5		0	1 0%	0	1 09	- 0 - 0	1 0	- 0 - 0	1 (- 0 - 0	1	0%	0 -	0%	0 - 0 - 0 1	0%	0	1 0%	0	1 09	- 0 - 0	1 09	0	1	- 0 - 0	1	0%	0 - 0 - 0 1	0%	0 · 0 · 0 1	0%	0 - 0 - 0 1	0%	0 0	0%
_		Fairfield Avenue to Waters Drive	No Restriction Single Yellow	45.6 23.2		0 6	3 67% 2 33%	0 6 0	3 679 3 09		1 89° 3 0°		2 78		2	78% 0%		89% 0%	0 9 0 0 3	100%	0 9 0	0 100% 3 0%	9	0 1009 3 09		3 679 3 09	8 0		- 0 9% 7 0% 0	2	78% 0%	0 - 8 1 1 2	89% 33%		89% 0%		67% 33%	0 6	67% 3 67% 2 33%
Moormede	North	Waters Drive to Aspen Close	Crossover/Access Double Yellow No Restriction	5.6 12.2 34.6	2 -	0	0 100%	0	0 1009	- 1 - 0	1 92	- 1 - 0		0 -	-	100%	0 -	100%	0 - 0 -	100%	0	0 100%	0 0	0 1004	- 0 - 0	0 1009	0 0	- 0 10	- 0 - 0 - 0%	-	100%	0 -	100%	0 -	67%	0 -	83%	0	100%
Crescent		Aspen Close to Fairfield Avenue	Double Yellow No Restriction Single Yellow	70 22.6	1 -	0 8	6 57% 3 0%	0 9	5 649		3 79	- 0 % 12	2 86	- 0 % 12	2	86% 1	0 -	93% 1	0 -	86%	0 12 0	2 86% 3 0%	0 12	2 869		2 869	0 13		- 0 3% 12 0% 0	2	86%	0 - 11 3 0 3	79%	0 -	71%	0 -	29%	0 7	7 50% 3 0%
	South	Fairfield Avenue to Fairfield Avenue	Crossover/Access Double Yellow	15.5 9.1	i -	0		0		- 0	38 0	- 0		- 0	-	-	0 -	- 00/	0 -	-	0		0	38 09	- 0	20 20	0	-	- C	-	-	0 -	-	0 -		0 -	=	0	-
	East	High Street to Pedestrian Crossing	Single Yellow Bus Stop Crossover/Access	204 22 25.1	38	0 0	8 U% 	0	- 09 -	- 0 - 0	38 0	- 0 - 0	38 (- 0 - 0	38	U% - -	0 -	U% -	0 - 0 -		0	38 0% 	0	38 09 -	- 0 - 0	38 09 -	0		- C			0 - 0 -		0 - 0 -	U% - -	0 - 0 -	0% -	0 38	
Mustard Mill Road			Double Yellow White Zig-Zag Crossover/Access	258.1 17.2 105.9	-	0		0	-	- 0 - 0	-	- 0 - 0		- 0 - 0		-	0 -		0 -		0	1 1	0	-	- 0 - 0		0	-	- 0 - 0	-		0 -		0 - 0 -		0 -		0 -	H
	West	High Street to Pedestrian Crossing	Double Yellow White Zig-Zag	191.3 18	3 -	0		0	-	- 0	-	- 0 - 0	-	- 0 - 0	-		0 -		0 -	-	0		0		- 0 - 0		0	-1-	- C		-	0 -		0 -		0 -	_	0 -	1

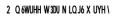
			Crossover/Access Double Yellow	51.8		0		0		0 .	-	0 -	- (-	- 0	1	0	1	0	-	0	0	0 -		0		0 -	-	0	0		0 -
	East	Southern Extent to London Road	No Restriction	1.4	1	0	1 0%	0	1 0%	1 (100%	0 -	0% (1 09	- 0 6 0	1 0%	0	1 0%	0 1	0%	0	0	0 1	0%	0	0%	0 -	0%	0 1 0%	1 1	100%	1 (
ew Street			Single Yellow	17.3	3	0	3 0%	0	3 0%	0 3	3 0%	0 3	0% 0	3 09	6 0	3 0%	0	3 0%	0 3	0%	0 3 0%	0 3 0%	3 (100%	1 2	2 33%	1 2	33%	0 3 0%	5 -:	167%	3 0
ew Street			Crossover/Access	25.9	-	0		0		0		0 -	- (-	- 0		0		0		0	0	0		0	-	0 -		0	0		0 -
	West	t Southern Extent to London Road	Double Yellow No Restriction	23.6	- 4	0	1 75%	0	1 75%	0 .	100%	2 1	75%	2 509	- 0	2 50%	0	1 75%	0 -	50%	2 2 50%	2 2 50%	0 -	50%	0	75%	2 1	75%	2 2 50%	0	1 0%	0 -
			Single Yellow	28.5	5	1	4 20%	1	4 20%	1 4	1 20%	1 4	20%	4 209	6 0	5 0%	1	4 20%	1 4	20%	0 5 0%	0 5 0%	0 5	0%	0 5	5 0%	1 4	20%	1 4 20%	0 !	5 0%	0 5
			Crossover/Access	42.6	-	0		0		0		0 -	- (- 0	-	0		0		0	0	0		0	-	0 -	-	0	0		0 -
	East	Waters Drive to Northern Extent	Double Yellow Permit Only	5.5	- 1	0	0 100%	0	0 100%	1 (100%	1 0	100%	0 1009	- 0	0 100%	0	1 0%	0 1	096	0	0	0 1	096	0	1 0%	0 - 1 0	100%	0	0	100%	0 -
lover Close			Single Yellow	10.4	1	0	1 0%	0	1 0%	0 1	1 0%	0 1	0% (1 00	6 0	1 0%	0	1 0%	0 1	0%	0 1 0%	0 1 0%	0 1	0%	0 '	0%	0 1	0%	0 1 0%	0	1 0%	0 1
			Crossover/Access	48	-	1		0		0	-	0 -	- (-	- 0		0		0 -	-	0	0	0	-	0		0 -	-	0	0		0
	West	Waters Drive to Northern Extent	Double Yellow Single Yellow	7.3	-	0		0		0 .		0 -	- (- 0		0		0 .	-	0	0	0 .	-	0		0 -	-	0	0		0 -
	+		Crossover/Access	30.5	-	0		0		0 0	+ +	0 0	. (- 0		0		0 0		0	0	0 0	+ +	0 (1 1	0 0	_	0 0 -	0 1		0 0
	East	Waters Drive to Eastern Extent	Double Yellow	13	-	0	-1 -	0		0		0 -	- (-	- 0		0	-1 -	0 -	1 -1	0	0	0 -	1 - 1	0	1 1	0 -	-	0	0		0 -
obin Way			Permit Only	41	9	9	0 100%	5	4 56%	5 4	56%	3 6	33%	7 229	6 2	7 22%	2	7 22%	3 6	33%	3 6 33%	4 5 44%	4 5	44%	4 5	44%	4 5	44%	5 4 56%	9	100%	9 0
	Moe	t Waters Drive to Eastern Extent	Crossover/Access Double Yellow	39.7	-	0		0		0		0 -	- (-	- 0		0		0		0	0	0	1 1	0		0 -		0	0		0 -
	WGS	Waters brive to castern extent	Permit Only	26.4 10.7	1	1	0 100%	1	0 100%	1 (100%	0 1	0% 1	0 1009	6 1	0 100%	1	0 100%	1 (100%	1 0 100%	1 0 100%	1 (100%	1 (100%	1 0	100%	1 0 100%	1 1	100%	1 (
			Crossover/Access	120.8	-	4		4		2	-	1 -	- 1	-	- 1		1		0		0	0	0	1	0	-	0 -		0	2		3
	Norti	h Kingston Road to Greenlands Road	Double Yellow	19	-	0		0		0		0 -	- (-	- 0		0		0	-	0	0	0	-	0		0 -	9.4%	0	0		0 -
osefield Road	-		No Restriction Crossover/Access	181 146.5		20	11 65%	14	1/ 45%	34 -3	3 110%	35 -4	113% 34	-3 1105	b 33 -	-2 106%	34	-3 110%	34 -3	110%	33 -2 106%	33 -2 106%	32 -1	103%	33 -2	106%	29 2	94%	29 2 94%	32 -	103%	24 7
	South	h Kingston Road to Greenlands Road	Double Yellow	16.5	-	0	1 1	0	+ -	0		0 -	- 0		- 0	1 1	0	1 1	0		0 -	0	0	1 1	0	1 1	0 -	_	0 -	0	1 1	0
	1	ļ ·	No Restriction	154.2		19	8 70%	16	11 59%	25 2	93%	26 1	96% 26	1 969	6 26	1 96%	27	0 100%	27 (100%	27 0 100%	28 -1 104%	26 1	96%	26	96%	25 2	93%	25 2 93%	24	89%	20 7
	North	h Kingston Road to Greenlands Road	Crossover/Access Double Yellow	113.4	\vdash \exists	0		4		1		3 -	- 7	\vdash	- 1	4	1	1	1	\vdash	1	0 -	0	$\vdash \vdash$	0	1 1	0 -		0 -	1	1	1
	NOTE	Managaran Nodu to Greenlands Nodu	No Restriction	194.1	34	23	11 68%	24	10 71%	31 3	91%	33 1	97% 33	1 979	6 35	-1 103%	35	1 103%	35 -1	103%	35 -1 103%	36 -2 106%	36 -2	106%	34 (100%	26 R	76%	25 9 74%	22 1	2 65%	20 14
idney Road			Crossover/Access	119.8	- 54	1		0	- 110	0		0 -	- (1 1	1	- 10076	2	- 10076	0	-	0	1 - 700%	0	-	1		1 -	-	0	0		0
	South	h Kingston Road to Greenlands Road	Disabled	7.3	- 1	1	0 100%	1	0 100%	1 (100%	1 0	100%	0 1009	6 1	0 100%	1	0 100%	1 (100%	1 0 100%	1 0 100%	1 (100%	1 (100%	1 0	100%	1 0 100%	1 (100%	1 0
		1 -	Double Yellow No Restriction	19.7 187.4	- 32	0 25	8 76%	24	9 73%	34 -1	1 103%	35 -2	106% 35	-2 1069	- 0	-2 106%	36	.3 109%	35 -2	106%	0 36 -3 109%	0 34 -1 103%	36 -3	109%	32	97%	0 - 27 6	82%	0	27	82%	0 - 25 8
	+	Thames Street to Westbrook Road	Double Yellow	70	-	0		0	- 13/0	0	10370	0 -	- (-2 1007	- 0	- 100%	0	- 107/0	0 -2	10070	0	0	0	10770	0	7770	0 -	02.0	0	0	- 0270	0 0
	East		Bus Stop	13	-	0		0		0		0 -	- (-	- 0		0		0 -		0	0	0 -		0		0 -	-	0	0		0 -
outh Street	Lust	Westbrook Road to High Street	Crossover/Access	32 309	-	0		0		0		0 -	- (-	- 0		0		0 -	-	0	0	0 -	-	0		0 -	-	0	0	-	0 -
outii street	-		Double Yellow Crossover/Access	95.1	- 1	0	+ +	0	+ :	0	1 1 -	0 -	- (1 1	- 0	1 1	0	1 1	0 .		0	0	0	+	0	1	0 -		0	0	1	0
	West	Thames Street to High Street	Crossover/Access Double Yellow	319.1	-	Ö		0		ő		0 -	- (-	- 0		0		0		0	0	0		Ö	-	0 -		0	0		Ö -
	4	·	Taxi	20	4	0	4 0%	0	4 0%	0 4	1 0%	0 4	0% (4 09	6 0	4 0%	0	4 0%	0 4	0%	0 4 0%	0 4 0%	0 4	0%	0 4	1 0%	0 4	0%	0 4 0%	0 -	1 0%	0 4
	East	Southern Extent to Waters Drive	Double Yellow Permit Only	10.6 52.3	10	7	2 70%	0	2 80%	0	2 90%	2 0	20%	0 200	- 0	7 30%	1	0 10%	2 0	20%	2 9 20%	2 8 20%	2 0	20%	2 0	20%	4 6	40%	8 2 80%	6	1 60%	7 -
wallow Close	Lust	Southern Extent to waters brive	Single Yellow	4	0	ó	0 -	0	0 -	0 0) -	0 0	- (0 20	- 0	0 -	Ó	0 -	0 0	20/0	0 0 -	0 0 -	0 0	2070	0 0) -	0 0	40.0	0 0 -	0 1) -	0 0
wallow close		İ	Crossover/Access	5.8	-	0		0		0	-	0 -	- (-	- 0		0		0	-	0	0	0	-	0		0 -	-	0	0		0
	West	Southern Extent to Waters Drive	Double Yellow Permit Only	41.6	- 2	0	0 1000	0	. 100%	0 -	470	0 -	- (1 470	- 0	1 470/	0	2 220/	0 -	220/	0	0	0 -	220/	0	470/	0 -	4.70/	0	0	470/	0 -
	+		Crossover/Access	65.6		0	. 100%	0	. 100%	0		0 -	- (1 0/3	- 0	. 0/76	0	- 3370	0 -	3370	0	0	0 4	3370	0	0/70	0 -	0776	0	0	0/76	0 0
		Western Extent to Robin Way	Double Yellow	50.7	-	0		0		0		0 -	- (-	- 0		0		0		0	0	0		0	-	0 -		0	0		0 .
		Western Extent to Robin way	Permit Only	32.4 12.2	6	5	1 83%	4	2 67%	6 (100%	4 2	67%	3 509	6 2	4 33%	2	4 33%	2 4	33%	1 5 17%	0 6 0%	0 6	0%	1 5	17%	2 4	33%	2 4 33%	3	50%	4 2
			Single Yellow	14-4	0	0	0 -	0	0 -	0 () -	0 0	- (0	- 0	0 -	0	0 -	0 (0 0 -	0 0 -	0 (++	0 (-	0 0		0 0 -	0 1		0 0
	Morti	h Robin Way to Kestrel Avenue	Crossover/Access Double Yellow	80.5 6.5	-	0	1 1	0		ő	1 1	0 -	- (1 1	- 0		0	1 1	0		0	0	0		0	1	0 -	_	0	0		Ö
	NOLL	RODIII Way to Restrei Avenue	Permit Only	103.3	25	22	3 88%	21	4 84%	19 6	76%	10 15	40% 8	17 329	6 9 1	16 36%	9	16 36%	8 17	32%	9 16 36%	9 16 36%	9 16	36%	12 13	48%	14 11	56%	13 12 52%	16	64%	18 7
			Single Yellow Crossover/Access	13	2	0	2 0%	0	2 0%	0 2	2 0%	0 2	0% 0	2 09	6 0	2 0%	0	2 0%	0 2	0%	0 2 0%	0 2 0%	0 2	0%	0 2	2 0%	0 2	0%	0 2 0%	0 :	2 0%	0 2
			Double Yellow	23.5	- 1	0	1 1	0	1 :	0		0 -	- (1 1	- 0	1 1	0	1 1	0		0	0	0	+	0	1 1	0 -		0	0		0
		Kestrel Avenue to Moormede Crescent	Permit Only	6	1	1	0 100%	1	0 100%	1 (100%	1 0	100%	1 09	6 0	1 0%	0	1 0%	0 1	0%	0 1 0%	0 1 0%	0 1	0%	0 1	0%	0 1	0%	1 0 100%	1 (100%	1 C
Vaters Drive	_		Single Yellow Crossover/Access	9.3	1	0	1 0%	0	1 0%	0 1	1 0%	0 1	0% 0	1 09	6 0	1 0%	0	1 0%	0 1	0%	0 1 0%	0 1 0%	0 1	0%	0 '	0%	0 1	0%	0 1 0%	0	1 0%	0 1
vaters prive			Double Yellow	11	-	0	1 1	0		0	1 1	0 -	- (1 1	- 0		0	1 1	0		0	0	0		0	1	0 -	_	0	0	1	0
		Western Extent to Plover Close	Permit Only	40		6	1 86%	6	1 86%	5 2	71%		29%	5 299		5 29%	2	5 29%	0 7	0%	2 5 29%	2 5 29%	2 5	29%	2 5	29%	3 4	43%	6 1 86%	6	86%	6 1
			Single Yellow	10.6	1	2	-1 200%	2	-1 200%	1 (100%	0 1	0% (1 09	6 0	1 0%	0	1 0%	0 1	0%	0 1 0%	0 1 0%	0 1	0%	0 1	1 0%	0 1	0%	0 1 0%	2	200%	2 -1
		Plover Close to Kingfisher Drive	Crossover/Access Double Yellow	20.8	1	0	1 1	0	1 -	0	} 	0 -	-1-7		. 0	1 -1	0	1 1	0	+ +	0 -	0 -	0	 	0	1	0 -	-1-	0	0	1 -1	0 -
	South		Permit Only	175.6	37	26	11 70%	25	12 68%	21 16	5 57%	16 21	43% 13	24 359	6 11 2	26 30%	12 :	25 32%	12 25	32%	12 25 32%	10 27 27%	9 28	24%	13 24	35%	14 23	38%	14 23 38%	18 1	49%	21 16
			Crossover/Access	2.2	_	0		0		0		0 -	- (-	- 0	-	0	-	0	-	0	0	0		0		0 -		0	0	-	0 -
		Kingfisher Drive to Swallow Close	Double Yellow Permit Only	61.5	- 11	11	0 1000/	10	1 91%	0	0197	0 -	- (4 450	- 0	4 64%	0	- FEW	0 -	E E 0/	0	4 7 249	0 -	279/	0	EE0/	0 -	4.40/	0 8 3 73%	0		0 - 10 1
			Crossover/Access	01.0	- ''	1	. 100%	0	. 9170	10	9170	0 -	- (0 433	- 0	4 0476	0	3 3376	0 :	33%	0	0	0 .	2/70	0 :	3376	0 -	0476	0 3 73%	1	0270	10
		Swallow Close to Moormede Crescent	Double Yellow	27.2	-	0		0		0	-	0 -	- (- 0		0		0 -	-	0	0	0	-	0		0 -	-	0	0	-	0 -
			Permit Only	32.5	8	7	1 88%	7	1 88%	8 (100%	2 6	25%	5 389	6 3	5 38%	2	6 25%	0 8	0%	0 8 0%	1 7 13%	1 7	13%	1 7	13%	2 6	25%	4 4 50%	6	75%	8 0
			20 Mins Bus Lane	20	4	0	4 0%	0	4 0%	0 4	1 0%	0 4	U% (4 09	0	4 0%	0	4 0%	0 4	0%	0 4 0%	0 4 0%	0 4	0%	0 4	0%	0 4	0%	0 4 0%	0 .	1 0%	0 4
			Bus Lane Bus Stop	25 110.8	-	0	1 1	0	1 -	0	1 1	0 -	. (. 0	1 1	0	1 1	0		0	0 -	0		0	1	0 -		0 -	0		0 -
			Crossover/Access	2102.2		10		11		7		7 -	- 1		- 10	1 1	7	1 1	4		7	6	5		5	1 1	5 -		6	9		10
			Disabled	39.8	6	4	2 67%	4	2 67%	2 4	1 33%	2 4	33%	4 339	6 2	4 33%	3	3 50%	2 4	33%	2 4 33%	2 4 33%	2 4	33%	3 3	3 50%	3 3	50%	2 4 33%	3	3 50%	3 3
			Double Yellow	2820.7	-	1		0		0		0 -			1		2		0		1	0	0		1		0 -		0	0		0 -
			Keep Clear	23.9	-	0		0		0		0 -	- (-	- 0		0		0	-	0	0	0	-	0		0 -	-	0	0		0 -
			No Restriction	1116.7	196	121	75 62%	115	81 59%	182 14	93% 1	91 5	97% 191	5 979	6 193	3 98%	198	-2 101%	197 -1	101% 1	97 -1 101%	193 3 98%	194 2	99%	181 15	92%	157 39	80% 1-	46 50 74%	135 6	69%	123 73
			Pedestrian Zone	560.6	-	0		0		2		1 -	- 3		- 0		0		0	-	0	0	0	-	0	1	0 -	-	0	0		0
			Permit Only	759.5		134		124	33 79%		2 73%		43% 62			96 39%	55 10		53 104		54 103 34%	52 105 33%	49 108	31%	61 96		75 82		90 67 57%	105 5		
			Single Yellow	1351.3	196	16 1	80 8%	20 1	76 10%	12 184		11 185	6% 11	185 69	6 16 18	30 8%	10 1	86 5%	10 186	5%	11 185 6%	10 186 5%	14 182		12 184	6%	11 185	6%	10 186 5%	21 17	11%	25 171
			Taxi White Zig-Zag	71.2	4	0	4 0%	0	4 0%	0 4	1 0%	0 4	0% (4 09	6 0	4 0%	0	4 0%	0 4	0%	0 4 0%	0 4 0%	0 4	0%	0 4	0%	0 4	0%	0 4 0%	0 -	1 0%	0 4
			writte zig-zag	/1.2	-	U	-1 -	U	1	U		U -	- (1 1	- 0	1 1	U	-1 -	U		U	U	U		U				U	U	1 .	













\$ UH D /R WUL 9 H K LF OH V 3D U NH G Y RO2 F FX

'D\ : HG 7KX

		- DQ- D	Q	
6 WUH H W	5 H WWULF WLR Q			& DSDFLW
%L UFK * UH HQ	\$ OOUHV WULFW LRQ V			
%L UFK * UH HQ ' R	X E O H <h oo="" r="" th="" z<=""><th></th><th></th><th></th></h>			
%L UFK * UH HQ ' U	R SS H G . H UE			
%L UFK * UH HQ	7R R 1D U URZ			
%L UFK * UH HQ 8 Q	U H VW ULFWH G			
\$ & K H UW V H \ /D Q H	\$ OOUHV WULFW LRQ V			
\$ & K H UW V H VD Q H %XV 6 W	R S			
\$ & K H UW V H \/ DQ H'RX E O	H < H O OR Z			
\$ & K H UW V H VDQ H U R S S	H G. H U E			
\$ & K H UW V H VD Q H 3D U N L	Q J %D\			
\$ & K H UW V H VD Q H 8Q U H V	W U LF WHG			
\$ & K H UW V H VD Q H =L J] D	J			
\$ F D F LD 5R D G	\$ OOUHV WULFW LRQ V			
\$ F D F LD 5R D G 8	Q U HV WULFW HG			
\$ 001 Q &O RV H	\$ OOUHV WULFW LRQ V			
\$ 001 Q &O RV H'	U RS S H G . HU E			
\$ 001 Q &O RV H	7R R 1D U URZ			
\$ 001 Q &O RV H8	Q U HV WULFW HG			
\$ QQLH %URR NHV &OR VH	\$ OOUHV WULFW LRQ V			
\$ Q Q LH %U RR N H V & OR VH 'U	R SS H ${\sf G}$. H ${\sf UE}$			
\$ Q Q LH %U RR N H V & OR VH 3 D	U N LQ J% D \			
\$ Q Q LH %U RR N H V & OR VH 8 Q	U H VW ULFWH G			
\$ X J X U&O RV H	\$ OOUHV WULFW LRQ V			
\$ X J X U&O RV H'	R X E O H< HO O RZ			
\$ X J X U&O RV H'	U RS S H G . HUE			
\$ X J X U&O RV H	7R R 1D U URZ			
\$ X J X U&O RV H8	Q U HV WULFW HG			
\$ YHQXH5RDG	\$ OOUHV WULFW LRQ V			
\$YHQXH5RDG'	RXEOH H00RZ			
\$YHQXH&DG'	URSSHG.HJE			
\$YHQXH5RDG8	QUH/WULFWHG			
\$YRQGD 0H\$ YHQXH	\$ OOUHV WULFW LRQ V			
\$YRQGD @\\$ /HQXH'	URSSHG.HJE			
\$YRQGD O ISYHQXH8	QUHWULFWHG			
%D URQ V:D \	\$ OOUHV WULFW LRQ V			
%D URQ V:D \ '	R X E O H <hoo th="" №<=""><th></th><th></th><th></th></hoo>			
%D URQ V:D \ '	U RSSHG. HUE			
%D URQ V:D \ 8	Q U HV WULFW HG			
%H H K LYH 5R D G	\$ OOUHV WULFW LRQ V			
%HHKLYH5RDG'	R X E O H< HOO RZ			

S D Q F \
: HG 7KX

/HOP

	/HQP

%H H K LYH 5R D G ' U RS S H G . HUE





9 H K LF OH V 3D U NH G Y RO2 F FX \$ UH D /R WUC

'D\ : HG 7KX

		- DQ- D	Q	
6 WUH H W	5 H WWULF WLR Q			& DSDFLW
%HHKLYH5RDG	7R R 1D U URZ			
%H H K LYH 5R D G 8	Q U HV WULFW HG			
% LOOH W5R D G	\$ OOUHV WULFW LRQ V			
% LOOH W5R D G '	U RS S H G . HU E			
% LOOH W5R D G	7R R 1D U URZ			
% LOOH W5R D G 8	Q U HV WULFW HG			
%LVK R S V:D \	\$ OOUHV WULFW LRQ V			
%LVK R S V:D \ '	U RSSHG. HUE			
%LVK R S V:D \ 8	Q U HV WULFW HG			
% R OH\ Q &O RV H	\$ OOUHV WULFW LRQ V			
% R OH\ Q &O RV H'	R X E O H< HO O RZ			
% R OH\ Q &O RV H'	U RSSHG. HUE			
% R OH\ Q &O RV H	7R R 1D U URZ			
% R OH\ Q &O RV H8	Q U HV WULFW HG			
%RZHV5RDG	\$ OOUHV WULFW LRQ V			
%RZ H V5R D G %	X V 6WRS			
%RZ HV5RDG'	L VDE O HG % DI			
%RZHV5RDG'	R X E O H HOO RZ			
%RZ HV5RDG'	U RSS H G. HUE			
%RZ H V5R D G 3	DUNLQ % DI			
%RZ H V5R D G 8	Q U HV WULFW HG			
%UHP HU5RDG	\$ OOUHV WULFW LRQ V			
%UHP HU5RDG'	U RSSHG. HUE			
%UHP HU5RDG8	Q U HV WULFW HG			
%ULG J H 6WUHH W	\$ OOUHV WULFW LRQ V			
%ULG J H 6WUHH W'	R X E O H< HO O RZ			
%ULG J H 6WUHH W'	U RS S H G . HUE			
%ULG J H 6WUHH W 8	Q U HV WULFW HG			
%URDGDFUH	\$ OOUHV WULFW LRQ V			
%URD G D F UH	' LVD E OHG %D\			
%URD G D F UH	' R X E OH <ho orz<="" th=""><th></th><th></th><th></th></ho>			
%URD G D F UH	' URSSHG.HUE			
%URD G D F UH	6LQ J OH <ho orz<="" th=""><th></th><th></th><th></th></ho>			
%URD G D F UH	8 QUHVWULF WHG			
%XG H E XU\5RD G	\$ OOUHV WULFW LRQ V			
%XGHEXU\5RDG'	L VDEOHG % DI			
%XGHEXU\5RDG'	R X E O H₹ HOO RZ			
%XGHEXU\5RDG'	U RSS H.G. HUE			
%XGHEXU\5RDG	7R R 1D U URZ			
%XGHEXU\5RDG8	Q U HVWULFWHG			
%XQG\ V:D \	\$ OOUHV WULFW LRQ V			

S	DQF\		
:	HG	7KX	





9 HKLFOHV3DUNHGYRO2FFX \$ UH D /R WUC

'D\ : HG

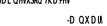
7KX

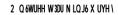
- DQ- D Q

5 H WWULF WLR Q 6 WUH H W & DSDFLW %XQG\ V:D \ ' U RSS H G. HUE %XQG\ V:D \ 8 Q U HVWULFWHG %X UJ H V:D \ \$ OOUHV WULFW LRQ V %X UJ H V:D \ ' L VDE O HG% D\ %X UJ H V:D \ ' R X E O H<HOO RZ %X UJ H V:D \ ' U RSSHG. HUE D U NLQJ % D\ %X UJ H V:D \ 3 %X UJ H V:D \ 8 Q U HV WULFW HG & D UO\ OH 5R D G \$ OOUHV WULFW LRQ V & D UO\ OH 5R D G ' U RS S H G . HU E & D UO\ OH 5R D G 8 Q U HV WULFW HG &KDQGRV 5RDG \$ OOUHV WULFW LRQ V & KDQGRV 5RDG' RXEOH H00RZ & KDQGRVRDG' URSSHG. HUE & KDQGRV 5RDG8 QUHVWLVAHG & K H UU\ 2U FK D U G \$ OOUHV WULFW LRQ V & K H UU\ 2U FK D U G' R X E O H< HO O RZ & K H UU\ 2U FK D U G' U RS S H G . HUE & K H UU\ 2U FK D U G6 L QJ O H< HO O RZ & K H UWVH \ /DQ H \$ OOUHV WULFW LRQ V & K H UWVH \ /D Q H % X V 6WRS & K H UWVH \ /D Q H ' R X E O H< HO O RZ & K H UWVH \ /D Q H ' U RS S H G . HUE & K H UWWH \ /D Q H 3 D U NL QJ % D\ & K H UWWH \ /D Q H 6 KDUHG8VH%D\ & K H UWVH \ /D Q H 8 Q U HV WULFW HG & KHVWQXWOD QRU&OR VH \$ OOUHV WULFW LRQ V & KHVWQXWOD QRU&OR VH'L V DEO H G%D \ R SS H G . H UE & K H VWO X WOD O R U &OR VH'U & KHVWQXWOD QRU&OR VH6L QJO H <H 00 R Z & K H VWQ X WOD Q R U &OR VH 8Q U H VW ULFWH G & K LOWH UQ &O RV H \$ OOUHV WULFW LRQ V U RS S H G . HU E & K LOWH UQ &O RV H' & K LOWH UQ &O RV H6 L QJ O H< HO O RZ & K X UF K 6WUHH W \$ OOUHV WULFW LRQ V & K X UF K 6WUHH W' L VDE O HG % D\ & K X UF K 6WUHH W' R X E O H< HO O RZ & K X UF K 6WUHH W' U RS S H G . HUE & K X UF K 6WUHH W 3 D U NL QJ % D\ & K X UF K 6WUHH W 3 H U PL W+RO G HU V %D\ & K X UF K 6WUHH W

35,9 \$ 7(

SDQFI : HG 7KX







\$ UH D /R WDC 9 H K LF OH V 3D U NH G Y RO2 F FX

'D\ : HG 7KX

- DQ- D Q

		- DQ- D	Q	
6 WUH H W	5 H WWULF WLR Q			& DSDF
& K X UF K 6WUHH W 6	KDUHG8VH%D\			
& K X UF K 6WUHH W 6	L QJ O H< HO O RZ			
& K X UF K 6WUHH W	7R R 1D U URZ			
& K X UF K 6WUHH W 8	Q U HV WULFW HG			
& ODUHPROW5RDG	\$ OOUHV WULFW LRQ V			
& ODUHPRQW5RDG'	R X E O H< HO O RZ			
& ODUHPRQW5RDG'	U RS S H G . HU E			
& OD UH P R Q W5R D G 8	Q U HV WULFW HG			
& RPPHUFLDO5RDG	\$ OOUHV WULFW LRQ V			
& RPPHUFLDO5RDG'	R X E O H< HO O RZ			
& RPPHUFLDO5RDG'	U RS S H G . HUE			
& RPPHUFLD 05RDG8	Q U HV WULFW HG			
& RRSHUV&ORVH	\$ OOUHV WULFW LRQ V			
& RRSHUV&ORVH	R X E O H< HO O RZ			
& RRSHUV&ORVH	U RS S H G . HUE			
& RRSHUV&ORVH	7R R 1D U URZ			
	Q U HV WULFW HG			
& R UQ Z D 00:D \	\$ OOUHV WULFW LRQ V			
& R UQ Z D 00:D \ '	U RS S H G . HUE			
& R UQ Z D 00:D \	7R R 1D U URZ			
& R UQ Z D 00:D \ 8	Q U HV WULFW HG			
& URVVZ D\V	\$ OOUHV WULFW LRQ V			
& URVVZ D\V	' R X E OH <ho orz<="" th=""><th></th><th></th><th></th></ho>			
	' URSSHG.HUE			
	8 Q UH WULF WHG			
XPEH UOD QG 6W UHH W	\$ OOUHV WULFW LRQ V			
X P E H UOD Q G 6WUHH W'	R X E O H< HO O RZ			
X P E H UOD Q G 6WUHH W'				
X P E H UOD Q G 6WUHH W 3	H U PL W+RO G HU V %D\			
X P E H UOD Q G 6WUHH W 8	Q U HV WULFW HG			
'ROSKLQ&RXUW	\$ OOUHV WULFW LRQ V			
	U RS S H G . HU E			
' R OS K LQ &R X U W8	Q U HV WULFW HG			
R OS K LQ &R X U W1RU W K	\$ OOUHV WULFW LRQ V			
R OS K LQ &R X U W1RU W K' U	R SS H G . H UE			
R OS K LQ &R X U W1RU W K8 Q	U H VW ULFWH G			
' UD N H \$Y H Q X H	\$ OOUHV WULFW LRQ V			
' UDNH \$Y H Q X H '	U RSSHG. HUE			
UDNH \$Y H Q X H 8	Q U HV WULFW HG			
'XQFDQ*DUGHQV	\$ OOUHV WULFW LRQ V			
1VOEDO*DIJ@IO\#	DVEOLUACE			ſ

\$ DQF\ : HG 7KX

	/HQP

'XQFDQ*DUGIQV' RXEOHHOORZ



-D QXDU 2 Q6WUHH W3DU N LQJ6 X UYH \

9 H K LF OH V 3D U NH G Y RO2 F FX \$ UH D /K WDC

'D\ : HG 7KX

- DQ- D Q

4 MILL LL W	5 H WWULF WLR Q	DQ D	Q	0 D C D F II
6 WH H W				& DSDFLI
'XQFDQ*DUGIQV' 'XQFDQ*DUGIQV	URSSHG.HJE 7RR1DU UZ			
'XQFDQ'DUGIQV8	QUHWULFWHG			
	\$ OOUHV WULFW LRQ V			
(G J H OOSR D G				
,	R X E O H× HO O RZ			
	U RS S H G . HU E			
()	Q U HV WULFW HG			
•	\$ 00UHV WULFW LRQ V			
,	R X E O H< HO O RZ			
	U RS S H G . HU E			
•	\$ OOUHV WULFW LRQ V			
•	R X E O H< HO O RZ			
(U RS S H G . HU E			
	L QJ O H< HO O RZ			
,	Q U HV WULFW HG			
	\$ OOUHV WULFW LRQ V			
,	R X E O H< HO O RZ			
•	U RS S H G . HU E			
) D LUILH OG \$Y H Q X H 3	D U NL QJ % D\			
) D LUI LH OG \$Y H Q X H 6	L QJ O H< HO O RZ			
•	\$ OOUHV WULFW LRQ V			
,	R X E O H< HO O RZ			
,	U RS S H G . HU E			
) D LUOD Z Q V&O RV H8	Q U HV WULFW HG			
) D UP &O RV H	\$ OOUHV WULFW LRQ V			
) D UP &O RV H	R X E O H< HO O RZ			
) D UP &O RV H'	U RS S H G . HU E			
) D UP &O RV H8	Q U HV WULFW HG			
) D UP 5R D G	\$ OOUHV WULFW LRQ V			
) D UP 5R D G '	L VDE O HG % DI			
) D UP 5R D G '	U RS S H G . HUE			
) D UP 5R D G 8	Q U HV WULFW HG			
) D UP H U V 5R D G	\$ OOUHV WULFW LRQ V			
) D UP H U V5R D G '	R X E O H< HO O RZ			
) D UP H U V5R D G '	U RS S H G . HU E			
) D UP H U V5R D G 6	K D U HG 8 VH %D \			
) D UQ H OOSR D G	\$ OOUHV WULFW LRQ V			
) D UQ H 005R D G $^{\prime}$	L VDE O HG % D\			
) D UQ H OO5R D G '	U RS S H G . HU E			
) D UQ H 005R D G 8	Q U HV WULFW HG			

\$ OOUHV WULFW LRQ V

: HG	7KX	
		/HQP

* HRUJH6WUHHW

S DQF\

: HG 7KX





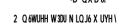
9 H K LF OH V 3D U NH G Y RO2 F FX \$ UH D /K WDC

'D\ : HG 7KX

		- DQ- D	Q			
6 WUH H W	5 H VWULF WLR Q			& D S D F LWI		/HQP
* H R UJ H 6W UHH W '	R X E O H< HO O RZ					
* HRUJH6WUHHW'	U RS S H G . HUE					
* H R UJ H 6W UHH W 3	D U NL QJ % D\					
* HRUJLDQ&ORVH	\$ OOUHV WULFW LRQ V					
* H R UJ LD Q &O RV H'	R X E O H< HO O RZ					
* H R UJ LD Q &O RV H'	U RS S H G . HU E					
* H R UJ LD Q &O RV H8	Q U HV WULFW HG					
* OHEH5RDG	\$ OOUHV WULFW LRQ V					
* OHEH5RDG'	R X E O H< HO O RZ					
* OHEH5RDG'	U RS S H G . HU E					
* OHEH5RDG8	Q U HV WULFW HG					
* OR X F H V WH U'U LYH	\$ OOUHV WULFW LRQ V					
* OR X F H V WH U'U LYH'	R X E O H< HO O RZ					
* OR X F H V WH U'U LYH'	U RS S H G . HU E					
* OR X F H V WH U'U LYH	7R R 1D U URZ					
* OR X F H V WH U'U LYH 8	Q U HV WULFW HG					
* R UG R Q &O RV H	\$ OOUHV WULFW LRQ V					
* R UG R Q &O RV H'	R X E O H< HO O RZ					
* R UG R Q &O RV H'	U RS S H G . HUE					
* R UG R Q &O RV H8	Q U HV WULFW HG					
* R ULQ J 5R D G	\$ OOUHV WULFW LRQ V					
* R ULQ J 5R D G '	R X E O H< HO O RZ					
* R ULQ J 5R D G '	U RS S H G . HUE					
* R ULQ J 5R D G	7R R 1D U URZ					
* R ULQ J 5R D G 8	Q U HV WULFW HG					
* UH H Q OD Q G V 5R D G	\$ OOUHV WULFW LRQ V					
	R X E O H< HO O RZ					
	U RS S H G . HU E					
* UH H Q OD Q G V 5R D G 5	R D G : RU N V					
* UH H Q OD Q G V 5R D G 8	Q U HV WULFW HG					
* UHVK D P 5RD G	\$ OOUHV WULFW LRQ V					
* UH VK D P 5R D G '	L VDE O HG% DI					
* UH VK D P 5R D G '	R X E O H< HOO №					
* UH VK D P 5R D G '	U RS S H G . HUE					
* UH VK D P 5R D G 3	D U NLQJ % D					
* UH VK D P 5R D G 6	FKRRO.HHS&OHDU					
* UH VK D P 5R D G 6	L QJ O H< HOO №					
* UH VK D P 5R D G 7	D[L%D\					
* UH VK D P 5R D G	7R R 1D U URZ					
* UHVK DP 5RDG8	Q U HV WULFW HG					

+ D OH 6WUHH W \$ 00UHV WULFW LRQ V







\$ UH D /R WDC 9 H K LF OH V 3D U NH G Y RO2 F FX

'D\ : HG 7KX

- D Q- D Q

		- DQ- D	Q	
6 WUH H W	5 H VWULF WLR Q			& D S D
+ D OH 6WUHH W'	R X E O H< HO O RZ			
+ D OH 6WUHH W'	U RS S H G . HUE			
	\$ OOUHV WULFW LRQ V			
+ D Z NV:D \ '	RXEOHHOORZ			
+ D Z NV:D \ '	U RSS H G. HUE			
+ D Z NV:D \ 3	HUPL WARO GHUV %D\			
+ D Z NV:D \ 6	LOJ O H; HOO RZ			
+ DZ NV:D \	7R R 1D U URZ			
+ LJ K 6WUHH W	7R R 1D U URZ \$ OOUHV WULFW LRQ V			
+ LJ K 6WUHH W'	R X E O H< HO O RZ			
+ LJ K 6WUHH W 8	Q U HV WULFW HG			
+ R P H VWH D G 5R D G	\$ OOUHV WULFW LRQ V			
+ R P H VWH D G 5R D G $^{\prime}$	U RS S H G . HUE			
	Q U HV WULFW HG			
\ WK H)L HO G\$ YH Q X H	\$ OOUHV WULFW LRQ V			
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\backslash WK H)L HO G\$ YH Q X H $^{\prime}$ U	R SS H ${\sf G}$. H ${\sf UE}$			
	U H WW ULFWH G			
+ \ WK H 3D U N5 RD G	\$ OOUHV WULFW LRQ V			
+ \ WK H 3D U N5 RD G ' L	V DEO H G%D \			
+ \ WK H 3D U N5 RD G ' R	X E O H <h oo="" r="" td="" z<=""><td></td><td></td><td></td></h>			
$_{+}$ \ WK H 3D U N5 RD G $^{\circ}$ U	R SS H G . H UE			
+ \ WK H 3D U N5 RD G 8 Q	U H VW ULFWH G			
+ \ WKH 5R D G	\$ OOUHV WULFW LRQ V			
+ \ WK H 5R D G '	R X E O H< HO O RZ			
+ \ WK H 5R D G '	U RS S H G . HU E			
+ \ WK H 5R D G 3	H U PL W+RO G HU V %D\			
+ \ WK H 5R D G 8	Q U HV WULFW HG			
,VOD Q G &O RV H	\$ OOUHV WULFW LRQ V			
,VOD Q G &O RV H'	R X E O H< HO O RZ			
,VOD Q G &O RV H'	U RS S H G . HUE			
,VOD Q G &O RV H	7R R 1D U URZ			
,VOD Q G &O RV H8	Q U HV WULFW HG			
-DP QDJDU&OR/H	\$ OOUHV WULFW LRQ V			
-DP QDJDUSOR(H'	URSSHG.HJE			
-DP QDJDU X ORTH8	QU H WUL F WHG			
-DP QDJDU X OR Y H8	QUHWULFWHG1RLQHV			
. H VWUH O\$Y HQXH	\$ OOUHV WULFW LRQ V			
. H VWUH O\$Y H Q X H '	R X E O H< HO O RZ			
. H VWUH O\$Y H Q X H '	U RS S H G . HUE			
. H VWUH O\$Y H Q X H 3	H U PL W+RO G HU V %D\			

S DQF\ : HG 7KX

	/HQP

SDQF\







9 H K LF OH V 3D U NH G Y RO2 F FX \$ UH D /R WUC

'D\ : HG 7KX

		- DQ- D	Q	
6 WUH H W	5 H WWULF WUR Q Q U HV WULFW HG			& DSDFLW
. H VWUH O\$Y H Q X H 8	Q U HV WULFW HG			
	\$ OOUHV WULFW LRQ V			
. LQ J ILVK H U'U LYH'	L VDE O HG % D\			
. LQ J ILVK H U'U LYH'	R X E O H< HO O RZ			
. LQ J ILVK H U'U LYH'	U RS S H G . HU E			
. LQ J ILVK H U'U LYH 3	H U PL W+RO G HU V %D\			
. LQ J ILVK H U'U LYH	7R R 1D U URZ			
. LQJ VWR Q5RDG	\$ OOUHV WULFW LRQ V			
. LQ J $$ WWR $$ Q $$ SR $$ D $$ G $$ % $$	X V /DQH			
. LQ J $$ WWR $$ Q $$ SR $$ D $$ G $$ % $$	X V 6WR S			
. LQ J $$ WWR $$ Q $$ SR $$ D $$ G $$ '	R X E O H< HO O RZ			
. LQ J WWR Q 5R D G $^{\prime}$	U RS S H G . HUE			
. LQ J $$ WWR $$ Q $$ 5R $$ D $$ G $$ 3	D U NL QJ % D\			
	L QJ O H< HO O RZ			
. LQ J WWR Q 5R D G 8	Q U HV WULFW HG			
. LQ J $$ WWR $$ Q $$ 5R $$ D $$ G $$ =	L J] DJ			
. QRZ OH*U HHQ	\$ OOUHV WULFW LRQ V			
. Q R Z OH * U HH Q $^{\prime}$	R X E O H< HO O RZ			
. Q R Z OH * U HH Q $^{\prime}$	U RS S H G . HU E			
. Q R Z OH *U HH Q 3	D U NL QJ % D\			
. Q R Z OH * U HH Q 6	L QJ O H< HO O RZ			
	Q U HV WULFW HG			
. QRZ OH3DUN\$YHQXH	\$ OOUHV WULFW LRQ V			
. Q R Z OH 3D U N\$ YH Q X H ' R	X E O H ∢H OO R Z			
. Q R Z OH 3D U N\$ YH Q X H ' U	R SS H G . H UE			
. Q R Z OH 3D U N\$ YH Q X H 8 Q	U H VW ULFWH G			
/DOHKDP 5RDG	\$ OOUHV WULFW LRQ V			
/ DOHKDP 5RDG %	X V 6 WR S			
/ DOHKDP 5RDG'	R X E O H< HO O RZ			
/ DOHKDP 5RDG'	U RS S H G . HU E			
/ DOHKDP 5RDG 5	R D G : RU N V			
/ DOHKDP 5RDG 6	L QJ O H< HO O RZ			
/ DOHKDP 5RDG8	Q U HV WULFW HG			
/ DOHKDP 5RDG =	L J] DJ			
/DPPDV&0RVH	\$ OOUHV WULFW LRQ V			
/D P P D V&O R/ H'	R X E O H: HOO RZ			
/D P P D V&O R/ H'				
/D P P D V&O R/ H8	Q U HVWULFWHG			
/DQJOH\5RDG	\$ OOUHV WULFW LRQ V			
/ D Q J OH \ 5R D G '	L VDE O HG % D\			
/ D Q J OH \ 5R D G '	R X E O H< HO O RZ			

: HG	7KX	
		/LIOD
		/HQP







\$ UH D /R WUC 9 H K LF OH V 3D U NH G Y RO2 F FX

'D\ : HG 7KX

- D Q- D Q

		DQ D	Q
6 WUH H W	5 H WWULF WLR Q		
/ D Q J OH \ 5R D G '			
/ D Q J OH \ 5R D G			
/ D Q J OH \ 5R D G 8	Q U HV WULFW HG		
/D UN\$Y HQXH	\$ OOUHV WULFW LRQ V		
	L VDE O HG% DI		
/D UN\$Y HQXH'	R X E O H< HOO RZ		
/D UN\$Y HQXH'	U RSSHG. HUE		
/D UN\$Y HQXH3	HUPL W+RO GHUV %D\		
/D UN\$Y HQXH6	LQJOH <hoor< td=""><td></td><td></td></hoor<>		
/D UN\$Y H Q X H	7R R 1D U URZ		
/ H D F UR IVV	\$ OOUHV WULFW LRQ V		
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/ H D F UR I W	7R R 1D U URZ		
/ H D F UR IW	8 Q UH VWULF WH G		
/H D F UR IW&O RV H	\$ OOUHV WULFW LRQ V		
/ H D F UR IW&O RV H'	R X E O H< HO O RZ		
/ H D F UR IW&O RV H'	U RS S H G . HUE		
/ H D F UR IW&O RV H3	D U NL QJ % D\		
/ H D F UR IW&O RV H	7R R 1D U URZ		
/ H D F UR IW&O RV H8	Q U HV WULFW HG		
0 DQRU30DFH	\$ OOUHV WULFW LRQ V		
O D Q R U3O DF H	7R R 1D U URZ		
0 D Q R U30 DF H 8	Q U HV WULFW HG		
O D\ILHOG*D UGHQV	\$ OOUHV WULFW LRQ V		
O D \ ILH OG *D U GH Q V '	U RS S H G . HU E		
O D \ ILH OG *D U GH Q V 8	Q U HV WULFW HG		
0 HDGRZ&RXUW	\$ OOUHV WULFW LRQ V		
0 HDGRZ&RXUW	RXEOHH00RZ		
0 HDGRZ&RXUW	URSSHG.HJE		
0 HDGRZ&RXUW	7RR1DU URZ		
0 HDGRZ&RXUW8	QU H WUL F WHG		
0 HDGRZ*DUGHQV	\$ OOUHV WULFW LRQ V		
0 HDGRZ*DUGIQV'	RXEOH H00RZ		
0 HDGRZ*DUGIQV'	URSSHG.HJE		
0 HDGRZ*DUGIQV8	QU H WUL F WHG		
0 HDGZD\&OR∀H	\$ OOUHV WULFW LRQ V		
0 HDGZD\&ORH	URSSHG.HJE		
0 HDGZD\&ORH8	QUHWULFWHG		

\$ OOUHV WULFW LRQ V

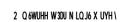
S D Q F \
: HG 7KX

/HQP

O LG Z D \ &O RV H1 RUW K

: HG 7KX







S UH D /R WDC 9 H K LF OH V 3D U NH G Y RO2 F FX

'D\ : HG 7KX

		- DQ- D	Q		 	
6 WUH H W	5 H WULF WLR Q			& DSDFLW	1	/HQP
O LG Z D \ &O RV H1 RUW K 'URS	S HG . H U E					
O LG Z D \ &O RV H1 RUW K 8QU H	V W UL F WHG					
O LG Z D \ &O RV H6 RXW K	\$ OOUHV WULFW LRQ V					
O LG Z D \ &O RV H6 RXWK ' UR S	S HG . H U E					
O LG Z D \ &O RV H6 RXWK 8 QU H	V W UL F WHG					
O LOOOH D G	\$ OOUHV WULFW LRQ V					
0 L000H D G '	R X E O H< HO O RZ					
0 L000H D G '	U RS S H G . HU E					
0 L000H D G 6	L QJ O H< HO O RZ					
O LOOOH D G	7R R 1D U URZ					
0 LOOH UV &O RV H	\$ OOUHV WULFW LRQ V					
O TOOH NA %O KA H,	U RS S H G . HU E					
O LOOH UV &O RV H 8	Q U HV WULFW HG					
0 RRU/DQH	\$ OOUHV WULFW LRQ V					
0 RRU/DQH'	L VDE O HG% D\					
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0 R R U/DQ H 6	LQJ O H <hoo rz<="" td=""><td></td><td></td><td></td><td></td><td></td></hoo>					
0 R R U/DQ H 8	Q U HV WULFW HG					
O RRUPHGH&UHVFHQW	\$ OOUHV WULFW LRQ V					
ORRUPHGH&UHVFHQW&	D U &OX E%D \					
ORRUPHGH&UHVFHQW'	R X E O H< HO O RZ					
ORRUPHGH&UHVFHQW'	U RS S H G . HUE					
ORRUPHGH&UHVFHQW6	L QJ O H< HO O RZ					
	Q U HV WULFW HG					
0 X UG R F K &O RV H	\$ OOUHV WULFW LRQ V					
0 X UG R F K &O RV H'	R X E O H< HO O RZ					
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0 X UG R F K &O RV H	7R R 1D U URZ					
0 X UG R F K &O RV H8	Q U HV WULFW HG					
O X VWD UG OL OOSRD G	\$ OOUHV WULFW LRQ V					
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1 H Z 5R D G '	R X E O H< HO O R					
1 H Z 5R D G '	U RS S H G . HUE					



2 Q6WUHH W3DU N LQJ6 X UYH \



\$ UH D /K WDC

9 H K LF OH V 3D U NH G Y RO2 F FX 7KX

'D\ : HG

- DQ- D Q 6 WUH H W 5 H WWULF WLR Q & DSDFLW 1 H Z 5R D G 8 Q U HV WULFW HG 1 H Z 6WUHH W \$ OOUHV WULFW LRQ V 1 H Z 6WUHH W' R X E O H< HOO RZ 1 H Z 6WUHH W' U RS S H G . HUE 1 H Z 6WUHH W 6 L QJ O H< HOO RZ 1 H Z 6WUHH W 7R R 1D U URZ Q U HV WULFW HG 1 H Z 6WUHH W 8 2 FWDYLD:D\ \$ OOUHV WULFW LRQ V 2 F WD Y LD :D \ ' U RS S H G . HU E 2 F WD Y LD :D \ 7R R 1D U URZ 2 F WD Y LD :D \ 8 Q U HV WULFW HG 3 D UN \$Y H Q X H \$ OOUHV WULFW LRQ V 3 D UN\$Y HQXH' R X E O H< HOO RZ 3 D UN\$Y HQXH' U RSSHG. HUE 3 D UN\$Y H Q X H 8 Q U HV WULFW HG 3 D UN VLG H 30 DF H \$ OOUHV WULFW LRQ V 3 D UNVLG H 30 DF H ' U RSSHG. HUE 3 D UNVLG H 30 DF H 7R R 1D U URZ 3 D UNVLG H 30 DF H 8 Q U HV WULFW HG \$ OOUHV WULFW LRQ V 3 H Q WR Q 5R D G 3 H Q WR Q 5R D G ' R X E O H< HO O RZ 3 H Q WR Q 5R D G ' U RS S H G . HU E Q U HV WULFW HG 3 H Q WR Q 5R D G 8 3 OR Y H U&O RV H \$ OOUHV WULFW LRQ V 3 OR Y H U&O RV H' R X E O H< HO O RZ 3 OR Y H U&O RV H' U RS S H G . HU E H U PL W+RO G HU V %D\ 3 OR Y H U&O RV H3 3 OR Y H U&O RV H6 L QJ O Hk HO O RZ 3 ULR U\ *U HH Q \$ OOUHV WULFW LRO V 3 ULR U\ *U HH Q ' R X E O H< HO O RZ 3 ULR U\ *U HH Q ' U RS S H G . HUE 3 ULR U\ *U HH Q 6 L QJ O H< HO O RZ 7R R 1D U URZ 3 ULR U\ *U HH Q 3 ULR U\ *U HH Q 8 Q U HV WULFW HG 3 URVS HF W30 DFH \$ OOUHV WULFW LRQ V 3 URVS H F W30 DF H ' R X E O H< HOO RZ 3 URVS HF W30 DFH' U RSSHG. HUE 3 URVS HF W30 DFH 8 Q U HV WULFW HG 5 D LOZ D \ 7HU UDF H \$ OOUHV WULFW LRQ V 5 D LOZ D \ 7H U UDF H ' R X E O H< HO O RZ

U RS S H G . HU E

SDQFl : HG 7KX

	/HQP

5 D LOZ D \ 7HU UDF H '



\$ UH D /R WDC 9 H K LF OH V 3D U NH G Y RO2 F FX

'D\ : HG 7KX

- DQ- D Q

6 WUH H W 5 H WWULF WLR Q & DSDFLW 5 D LOZ D \ 7HU UDF H 3 H U PL W+RO G HU V %D\ 5 D LOZ D \ 7H U UDF H 7R R 1D U URZ Q U HV WULFW HG 5 D LOZ D \ 7HU UDF H 8 5 D LOZ D \ 7HU UDF H 9 L VL WRU V% D\ 5 D OHLJ K&R X U W \$ OOUHV WULFW LRQ V 5 D OH LJ K &R X U W L VDE O HG % D\ 5 D OH LJ K &R X U W R X E O H< HO O RZ 5 D OH LJ K &R X U W U RS S H G . HU E 5 D OH LJ K &R X U W8 Q U HV WULFW HG \$ OOUHV WULFW LRQ V 5 LF K P R Q G 5R D G 5 LFKPRQG5RDG' R X E O H< HO O RZ 5 LF K P R Q G 5R D G ' U RS S H G . HU E L QJ O H< HO O RZ 5 LF K P R Q G 5R D G 6 5 LF K P R Q G 5R D G 7R R 1D U URZ 5 LF K P R Q G 5R D G 8 Q U HV WULFW HG 5 LY H U3D U N\$ YH Q X H \$ OOUHV WULFW LRQ V 5 LY H U3D U N\$ YH Q X H' R X E O H <H OO R Z 5 LY H U3D U N\$ YH Q X H ' U R SS H G . H UE 5 LY H U3D U N\$ YH Q X H 8 Q U H VW ULFWH G 5 R E LQ:D \ \$ OOUHV WULFW LRQ V 5 R E LQ:D \' R X E O H< HO O RZ 5 R E LQ :D \' U RS S H G . HU E H U PL W+RO G HU V %D\ 5 R E LQ :D \ 3 5R F KH WH U5RD G \$ OOUHV WULFW LRQ V 5 R F K H WH U5R D G' RXEOH HOORZ 5 R F K H WH U5R D G' U RSS H G. HUE DU NLQ % D 5 R F K H WH U5R D G 3 5 R F K H WH U5R D G 8 Q U HVWULFWHG 5 R R N H U\ 5R D G \$ OOUHV WULFW LRQ V 5 R R NH U\5R D G ' U RSS H G. HUE 5 R R NH U\5R D G 6 LQJ O H<HOO RZ 5 R R NH U\5R D G 8 Q U HV WULFW HG 5 R VH ILH OG5R D G \$ OOUHV WULFW LRQ V 5 R VH ILH OG5R D G ' R X E O H< HO O RZ 5 R VH ILH OG5R D G ' U RS S H G . HUE Q U HV WULFW HG 5 R VH ILH OG5R D G 8 5 X VN LQ5R D G \$ OOUHV WULFW LRQ V 5 X VNLQ 5R D G ' U RSS H G. HUE 5 X VNLQ 5R D G 8 Q U HV WULFW HG 6 K R UWZ R R G \$Y H Q X H \$ OOUHV WULFW LRQ V

R X E O H< HO O RZ

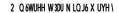
SDQFI		
· HG	7KY	

/HQP

6 K R UWZ R R G \$Y H Q X H '

: HG





7KX



6 WUH H W

6 K R UWZ R R G \$Y H Q X H '

6 K R UWZ R R G \$Y H Q X H 6 K R UWZ R R G \$Y H Q X H 8

6 LG Q H \ 5R D G

6 LG Q H \ 5R D G '

6 LG Q H \ 5R D G '

6 LG Q H \ 5R D G 8

6 LOY H UG D OH &R X U W

6 LOY H UG D OH &R X U W

6 LOY H UG D OH &R X U W 6 LOY H UG D OH &R X U W8

6 W3D X O V5 RD G

6 W3D X O V5RD G ' R

6 W3D X O V5RD G ' U

6 W3D X O V5RD G 6 W3D X O V5RD G 8 Q

6 WD LQ D V K &U HV F H Q W

6 WD LQ D VK &U HV FH Q W'

6 WD LQ D VK &U HV FH Q W'

6 WD LQ D VK &U HV FH Q W' 6 WD LQ D VK &U HV FH Q W 3

6 WD LQ D VK &U HV FH Q W 6

6 WD LQ D VK &U HV FH Q W 8

6 WD Q Z H OOOR R U 5RD G

6 WD Q Z H OO1H Z 5 RD G

6 WD Q Z H OOOR R U 5RD G ' U

6 WD Q Z H OO1H Z 5 RD G ' R

6 WD Q Z H OO1H Z 5 RD G ' U

6 WD Q Z H 001H Z 5 RD G 8 Q 6 Z D OOR Z &O RV H

6 Z D OOR Z &O RV H'

6 Z D OOR Z &O RV H'

6 Z D OOR Z &O RV H 3

6 Z D OOR Z &O RV H 6

6 Z D OOR Z &O RV H 6\ NHV'U LYH

6\ NH V'U LYH'

6\ NH V'U LYH 6\NH V'U L\H8

7KH)HUQHU\

7KH)HUQHU\'

L VDEOHG%D

9 H K LF OH V 3D U NH G Y RO2 F FX \$ UH D /K WDC 'D\ : HG 7KX

D	: HG	/ / / /		: HG	/KX	
	- DQ- D	Q				
5 H WWULF WLR Q			& D S D F LW			/HQP
U RS S H G . HU E						
7R R 1D U URZ						
Q U HV WULFW HG						
\$ OOUHV WULFW LRQ V						
R X E O H< HO O RZ		,				
U RS S H G . HU E						
Q U HV WULFW HG						
\$ OOUHV WULFW LRQ V						
U RS S H G . HU E						
7R R 1D U URZ						
Q U HV WULFW HG						
\$ OOUHV WULFW LRQ V						
X E O H <h oo="" r="" td="" z<=""><td></td><td></td><td></td><td></td><td></td><td></td></h>						
R SS H G . H UE						
7R R 1D U URZ						
U H VW ULFWH G						
\$ OOUHV WULFW LRQ V						
L VDE O HG % D\						
R X E O H< HO O RZ						
U RS S H G . HU E						
D U NL QJ % D\						
L QJ O H< HO O RZ						
Q U HV WULFW HG						
\$ OOUHV WULFW LRQ V						
R SS H G . H UE						
\$ OOUHV WULFW LRQ V						
X E O H <h oo="" r="" td="" z<=""><td></td><td></td><td></td><td></td><td></td><td></td></h>						
R SS H ${\sf G}$. H ${\sf UE}$						
U H WW ULFWH G						
\$ OOUHV WULFW LRQ V						
R X E O H< HO O RZ						
U RS S H G . HU E						
H U PL W+RO G HU V %D\						
L QJ O H< HO O RZ						
7R R 1D U URZ						
\$ OOUHV WULFW LRQ V						
U RSS H G. HUE						
7R R 1D U URZ						
Q U HVWULFWHG						
\$ OOUHV WULFW LRQ V						







9 H K LF OH V 3D U NH G Y RO2 F FX \$ UH D /R WUC

'D\ : HG 7KX

- DQ- D Q

6 WUH H W	5 H WWULF WLR Q		& DSDFLW
7KH)HUQHU\'	RXEOH HOORZ		
7KH)HUQHU\'	U RSS H.G. HUE		
7KH)HUQHU\	7R R 1D U URZ		
7KH)HUQHU\8	QUHV WULFWHG		
7K H +\ WKH	\$ OOUHV WULFW LRQ V		
7K H +\ WKH '	R X E O H HOO RZ		
7K H +\ WKH '	U RSS H G. HUE		
7K H +\ WKH 6	KD U HG8 VH%D\		
7K H +\ WKH	7R R 1D U URZ		
7K H +\ WKH 8	Q U HV WULFWHG		
7K H 6L GL QJ V	\$ OOUHV WULFW LRQ V		
7K H 6L GL QJ V '	U RSSHG. HUE		
7K H 6L GL QJ V 8	Q U HV WULFW HG		
7K R US H /HD 5 RDG	\$ OOUHV WULFW LRQ V		
7K R US H /HD 5 RDG % X	V 6 WRS		
7K R US H /HD 5 RDG ' R	X E O H ↔ OOR Z		
7K R US H /HD 5 RDG ' U	R SSHG. HUE		
7K R US H /HD 5 RDG 3 D	U N LQJ% D \		
7K R US H /HD 5 RDG 6 L	QJO H <hoor td="" z<=""><td></td><td></td></hoor>		
7K R US H /HD 5 RDG 8 Q	u h vwulfwa G		
7K R US H 5RD G	\$ OOUHV WULFW LRQ V		
7K R USH 5RD G %	X V 6WRS		
7K R USH 5RD G'	R X E O H HOO RZ		
7K R USH 5RD G'	U RSS H G. HUE		
7K R USH 5RD G 6	LOJ O H; HOO RZ		
7K R USH 5RD G 8	Q U HV WULFW HG		
7K R US H 5RD G =	LJ] DJ		
7LP VZ D\	\$ OOUHV WULFW LRQ V		
7LP VZ D\	'RXEOH <hoozr< td=""><td></td><td></td></hoozr<>		
7LP VZ D\	' URS S H G .H U E		
7LP VZ D\	7R R 1D U URZ		
7LP VZ D\	8 Q UH WULF WHG		
7X UQH UV&O RVH	\$ OOUHV WULFW LRQ V		
7X UQH UV&O RVH'	U RSSHG. HUE		
7X UQH UV&O RVH	7R R 1D U URZ		
7X UQH UV&O RVH8	Q U HV WULFW HG		
9 LF D UD J H 5R D G	\$ OOUHV WULFW LRQ V		
9 LF D UD J H 5R D G '	R X E O H< HO O RZ		
9 LF D UD J H 5R D G '	U RS S H G . HUE		
9 LF D UD J H 5R D G 6	L QJ O H< HO O RZ		
9 LF D UD J H 5R D G 8	Q U HV WULFW HG		

SDQFI : HG 7KX

: HG 7KX





-D QX D VI 2 Q 6WUHH W 3DU N LQ J6 X UYH I

\$ UH D /R WUC 9 H K LF OH V 3D U NH G Y RO2 F FX

'D\ : HG 7KX

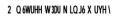
- DQ- D Q

		- DQ- D	Q			
6 WUH H W	5 H WWULF WLR Q			& DSDFLW	/⊢	HQP
9 LF WR ULD 5R D G	\$ OOUHV WULFW LRQ V					
9 LF WR ULD 5R D G '	R X E O H< HO O RZ					
9 LF WR ULD 5R D G '	U RS S H G . HU E					
9 LF WR ULD 5R D G 8	Q U HV WULFW HG					
: DSVKR WW5RD G	\$ OOUHV WULFW LRQ V					
: D S VK R WW5R D G $^{\prime}$	R X E O H₁ HOO RZ					
: D S VK R WW5R D G $^{\prime}$	U RSS H G. HUE					
: DSVKRWW5RDG	7R R 1D U URZ					
: DSVKRWW5RDG8	Q U HV WULFWHG					
: D WHUV'U LYH	\$ OOUHV WULFW LRQ V					
: D WH UV'U LYH '	R X E O H< HO O RZ					
: D WH UV'U LYH '	U RS S H G . HUE					
: D WH UV'U LYH 3	H U PL W+RO G HU V %D\					
: D WH UV'U LYH 6	L QJ O H< HO O RZ					
: D WH UV'U LYH 8	Q U HV WULFW HG					
: HQGRYHU3ODH	\$ OOUHV WULFW LRQ V					
: HQGRYHUXODH'	URSSHG.HJE					
: HQGRYHUXODH8	QU H WUL F WHG					
: HQGRYHU5RDG	\$ OOUHV WULFW LRQ V					
: HQGRYHUSRDG'	LVDEO166%D					
: HQGRYHUSRDG'	RXEOH H00RZ					
: HQGRYHUSRDG'	URSSHG.HJE					
: HQGRYHUSRDG	7RR1DU URZ					
: HQGRYHUSRDG8	QU H WUL F WHG					
: LWK H \ J D WH \$Y H Q X H	\$ OOUHV WULFW LRQ V					
: LMK H / J D WH \$Y H Q X H '	R X E O H< HO O RZ					
: LMK H / J D WH \$Y H Q X H '	U RS S H G . HU E					
: LWK H \ J D WH \$Y H Q X H 8	Q U HV WULFW HG					
: RUS OH \$Y HQXH	\$ OOUHV WULFW LRQ V					
: R US OH \$Y H Q X H '	L VDE O HG % D\					
: R US OH \$Y H Q X H '	R X E O H< HO O RZ					
: R US OH \$Y H Q X H '	U RS S H G . HU E					
: R US OH \$Y H Q X H 8	Q U HV WULFW HG					
: R US OH 5R D G	\$ OOUHV WULFW LRQ V					
: R US OH 5R D G '	R X E O H< HO O RZ					
: R US OH 5R D G '	U RS S H G . HU E					
: R US OH 5R D G 6	L QJ O H< HO O RZ					
: R US OH 5R D G 8	Q U HV WULFW HG					
: UD\ VE X U\ *D U GHQ V	\$ OOUHV WULFW LRQ V					
: UD \ VE X U\ *D U GH Q V '	R X E O H< HOO RZ					

: UD \ VE X U\ *D U GH Q V ' U RS S H G . HUE

: HG 7KX





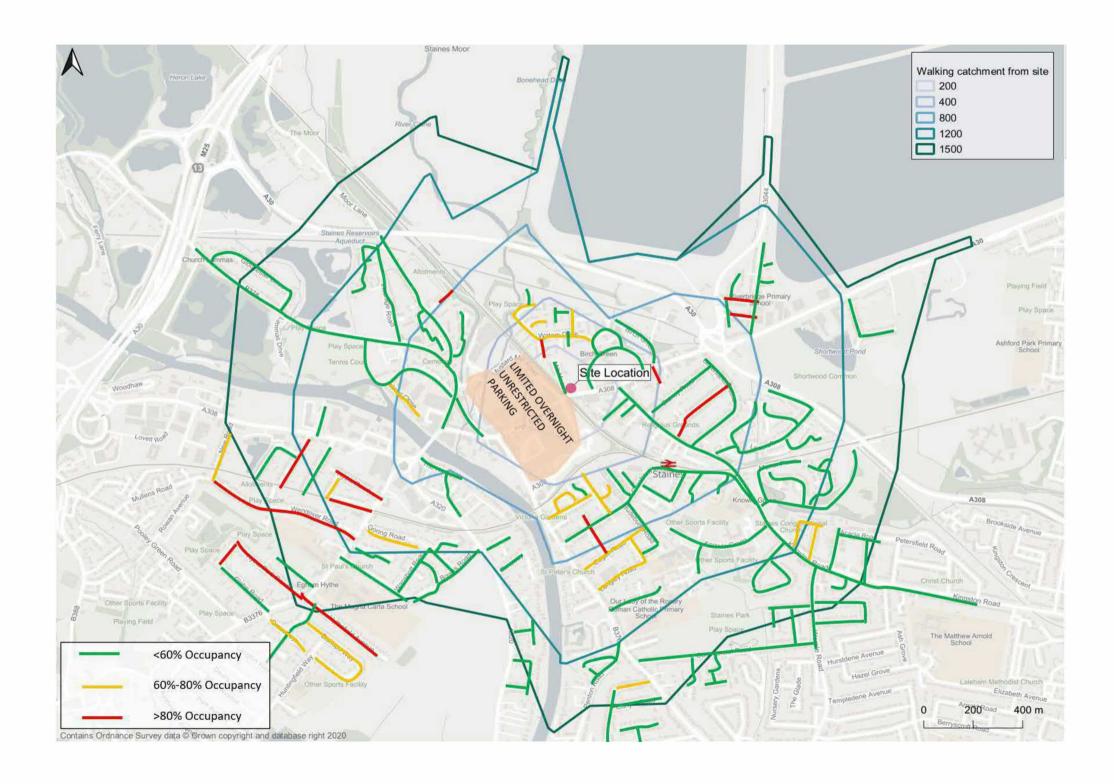


9 H K LF OH V 3D U NH G Y RO2 F FX \$ UH D /K WDC

'D\ : HG 7KX

		- DQ- D	Q		
6 WUH H W	5 H WWULF WLR Q			& DSDFLW	, , , , , , , , , , , , , , , , , , , ,
: UD \ VE X U\ *D U GH Q V 6	L QJ O H< HO O RZ				
: UD \ VE X U\ *D U GH Q V	7R R 1D U URZ				
: UD\ VE X U\ 5R D G	\$ OOUHV WULFW LRQ V				
: UD \ VE X U\ 5R D G $\%$	X V 6WR S				
: UD \ VE X U\ 5R D G &	\ FOH/DQH				
: UD \ VE X U\ $5R$ D G '	L VDE O HG% DI				
: UD \ VE X U\ $5R$ D G '	R X E O H< HOO RZ				
: UD \ VE X U\ $5R$ D G '	U RS S H G . HUE				
: UD \ VE X U\ 5R D G 3	D U NL QJ % D\				
: UD \ VE X U\ 5R D G 8	Q U HV WULFW HG				
: \ D WW5R D G	\$ OOUHV WULFW LRQ V				
: \ D WW5R D G '	R X E O H< HO O RZ				
: \ D WW5R D G '	U RS S H G . HUE				
: \ D WW5R D G	7R R 1D U URZ				
: \ D WW5R D G 8	Q U HV WULFW HG				
\$ OOWWUHH W V	%X V/DQ H				
\$ COWWUHH W V	%X V6WRS				
\$ OOWWUHH W V	& D U&O XE % D\				
\$ OOWWUHH W V	& \ F OH /D Q H				
\$ OOWWUHH W V	' LVD E OHG %D\				
\$ OOWWUHH W V	'R X E OH ∢H O ORZ				
\$ OOWWUHH W V	' URSSHG.HUE				
\$ COWWUHH W V	3 D UN LQ J %D\				
\$ OOWWUHH W V	3 H UP LW+R O GH U V%D\				
\$ OOWWUHH W V	35,9\$7(
\$ OOWWUHH W V	5RDG:R U N				
\$ OOWWUHH W V	6 F K R R O.H H S & OH DU				
\$ OOWWUHH W V	6 K D UH G 8V H% D\				
\$ OOWWUHH W V	6 LQ J OH ∢H O ORZ				
\$ OOWWUHH W V	7D [L%D \				
\$ OOWWUHH W V	7R R 1D U URZ				
\$ OOWWUHH W V	8 Q UH VWULF WHG				
\$ OOWWUHH W V	8 Q UH VWULF WHG 1R/ L QHV				
\$ OOWWUHH W V	9 LVLWR UV%D\				
\$ OOWWUHH W V	= LJ] DJ				

\$ OOWWUHH W V\$ O OUHWW ULFWL RQV



WWE/y At Wd Wd, E > z ^/ ^

