MAY 2020

NORTH STAFFORDSHIRE LOCAL AIR QUALITY PLAN

UNAPPROVED OUTLINE BUSINESS CASE
APPENDIX 2 - Workplace Parking Levy Investigation

Staffordshire County Council

NEWCASTLE UNDER LYME BOROUGH COUNCIL

City of Stoke-on-Trent

SWECO

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1 Introduction

This technical report provides a high-level assessment of the traffic demand impacts of a potential Workplace Parking Levy (WPL) for the North Staffordshire Local Air Quality Plan (NSLAQP). The Transport Act 2000 provides the enabling legislation for local authorities outside London to introduce a charge on workplace parking. Such a scheme would make employers who currently provide free private parking for employees liable to an annual charge. Whilst this levy is initially paid by the employer, they have the option of passing the cost to the employee.

A WPL has been operational in Nottingham since 2012 and was introduced to help reduce traffic congestion with income from the WPL going towards improved public transport. The legislation that permits the establishment of a WPL allows for a broad set of rules in how a scheme is designed. A WPL for the NSLAQP could be designed to encourage staff to switch to compliant modes of transportation in line with the Ministerial Direction and potentially therefore help to lower nitrogen dioxide (NO_2) emissions in locations exceeding compliance limits.

This high-level assessment utilises the North Staffordshire Multi-Modal Model (NSMM) to identify the volume of incoming commuter trips to key employment areas, the amount of those trips that would terminate at private parking and the amount where a WPL is estimated to be passed to the employee. It also investigates using a study of available parking spaces as an alternate method of estimating work-place parking demand. The number of employees who may be required to pay a WPL is of importance as the key motivation in the consideration of a WPL is to encourage a reduction in the use of non-compliant vehicles and encourage the use of either compliant vehicles or a mode shift to public transport. Where a potential WPL cost is absorbed by the employer, these benefits are less likely of occur.

2 The Nottingham WPL

Nottingham was the first region in the UK to introduce a WPL scheme in Europe and it is still the only WPL in the United Kingdom. The Nottingham WPL was introduced in October 2011 with no charge and with charging commencing in April 2012. The extent of the scheme is within the Nottingham City Council administrative boundaries with the scheme designed to help alleviate congestion and fund public transport schemes. Employers are liable for the levy if they make available 11 or more parking spaces, these need not be marked out or in a designated parking area. Where a parking area is shared by multiple employers, each is responsible for paying the levy on vehicles related to their business. Exemptions are available for car park users such as customers, business visitors, display vehicles, fleet vehicles, delivery vehicles, blue badge holders and emergency services. WPL licenses are issued for 12 months and are issued on the maximum number of permitted vehicles, not necessarily the number of available spaces. Enforcement is conducted by site visits included the use of ANPR cameras; the local authority having legal rights to enter property to conduct compliance checks[1].

From April 2019, the levy was set to £415 per vehicle and rises annually with the RPI (Retail Price Index). Within the area covered by the WPL, 18% of employers have parking that is liable to the WPL due to the parking capacity, 42% of all workspace parking spaces are liable for the levy[2] and 80% of employers pass the levy on to their staff. The supply of liable parking spaces fell by 17.5% prior to the WPL being introduced and then levelled to 75% of pre-WPL levels[3]. Since 2012, over £44M of revenue has been raised, this is ring-fenced for transport initiatives such as a tram network extension and improvements to the main railway station.

The expectation is that the WPL on its own will only lead to a slight mode shift to public transport due to fees being set at a level that will be absorbed by employees rather than causing them to switch to public transport. Additional positive impact is likely by way of the reduction in available parking spaces and the levy being invested in making public transport more attractive[4]. Between 2013 and 2014, Nottingham saw an increase of 4.3% in bus and tram usage. Public transport is now used by more than 40% of commuters. Between July 2014 and 2015, Nottingham was the only core English city to show a reduction in journey time per vehicle-mile on locally managed roads in the AM peak period.

Nottingham, like other UK core cities has seen a rise in congestion levels and it's not been possible to observe the impact that the introduction of the WPL has had on congestion[5]. There is no evidence that the WPL has led to job losses, employment moving out of the region or putting off potential inwards investment.

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[1] Nottingham City Council. Workplace Parking Levy Employer Handbook. 2013, Retrieved from http://documents.nottinghamcity.gov.uk/download/1233

[2] Hallam, N. Workplace Parking Levy, Nottingham, UK. 2016, Retrieved from WWF: https://www.wwf.org.uk/sites/default/files/2016-12/nottingham%20case%20study%20-%20Workplace%20parking%20levy.pdf

[3] Nottingham City Council. Workplace Parking Levy (WPL) Evaluation Update, 2016

[4] Butcher, L. Roads: Workplace Parking Levy (WPL). 2012, Retrieved from House of Commons Library: http://researchbriefings.files.parliament.uk/documents/SN00628/SN00628.pdf

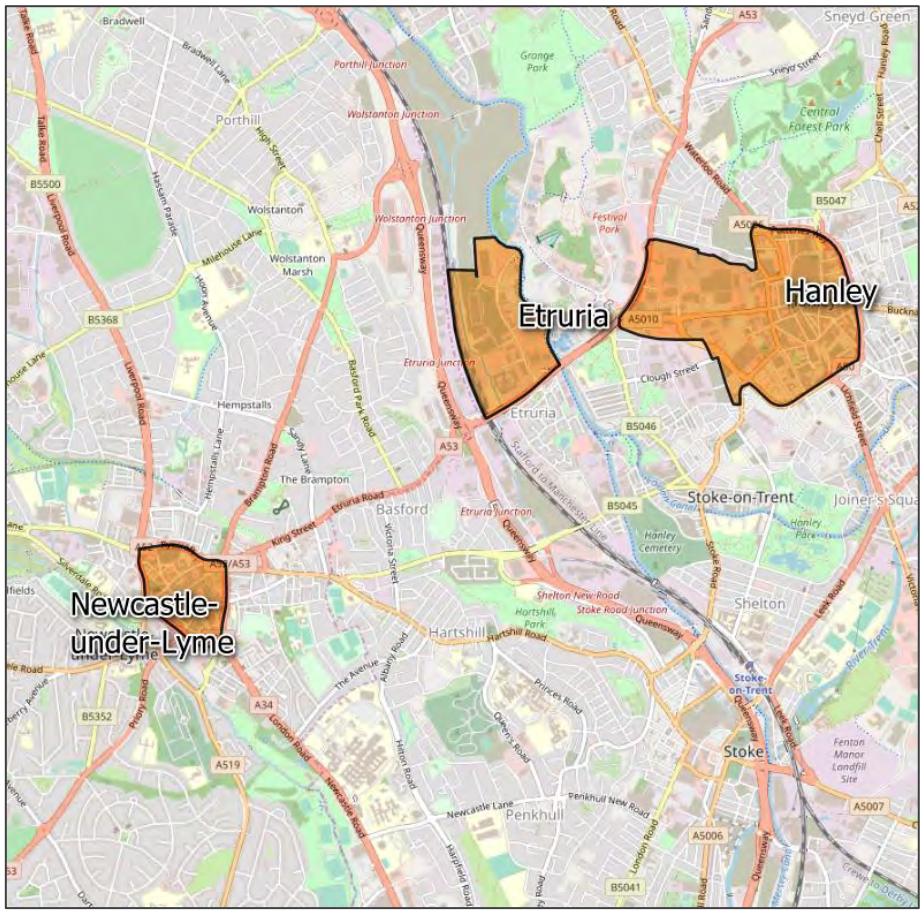
[5] Dale, S., Frost, M., Ison, S., Quddud, M., & Warren, P. Evaluating the impact of a workplace parking levy on local traffic congestion: The case of Nottingham UK. Transport Policy, 153-164. 2017

3 Methodology

3.1 Select-link analysis

Three potential WPL sites were identified around Hanley, Etruria and Newcastle-under-Lyme (Figure 3-1). The perimeters of these were chosen to include known key employment and parking sites.

Figure 3-1: Identified sites



The NSMM model was utilised to conduct a select-link analysis for each site. The select-link analysis included all links into the cordon areas for the two centres and was undertaken for each direction on the A53 to capture Etruria movements (selected links shown in green in Figure 3-2, Figure 3-3 and Figure 3-4). AM (0800 - 0900) flows were analysed as these are most appropriate for understanding commuting behaviour. A factor was applied to convert peak hour flow to the 0700-1000 AM commute period. Separate select-link analysis was conducted for both compliant car journeys and non-compliant car journeys yielding a pair of matrices for each site containing journey flows passing through each site cordon.

Figure 3-2: Cordon sites in Newcastle-under-Lyme

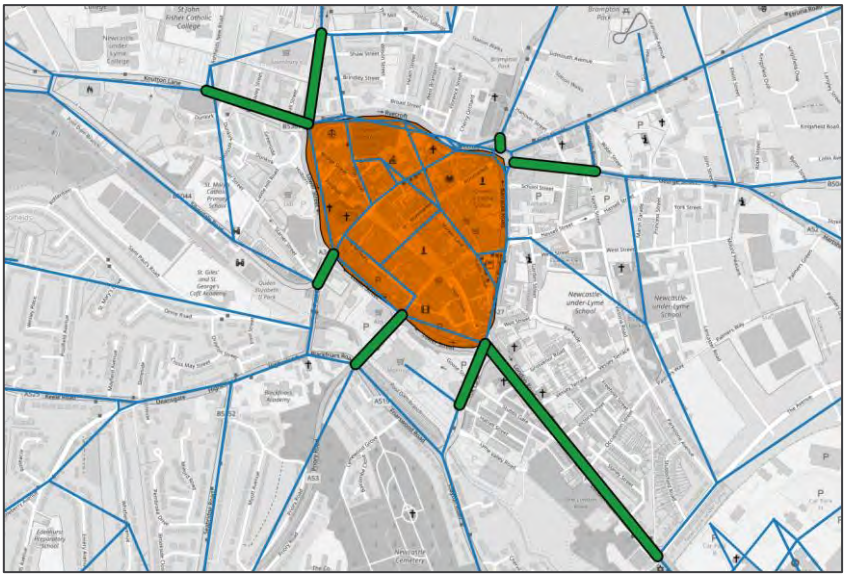


Figure 3-3: Cordon sites in Etruria

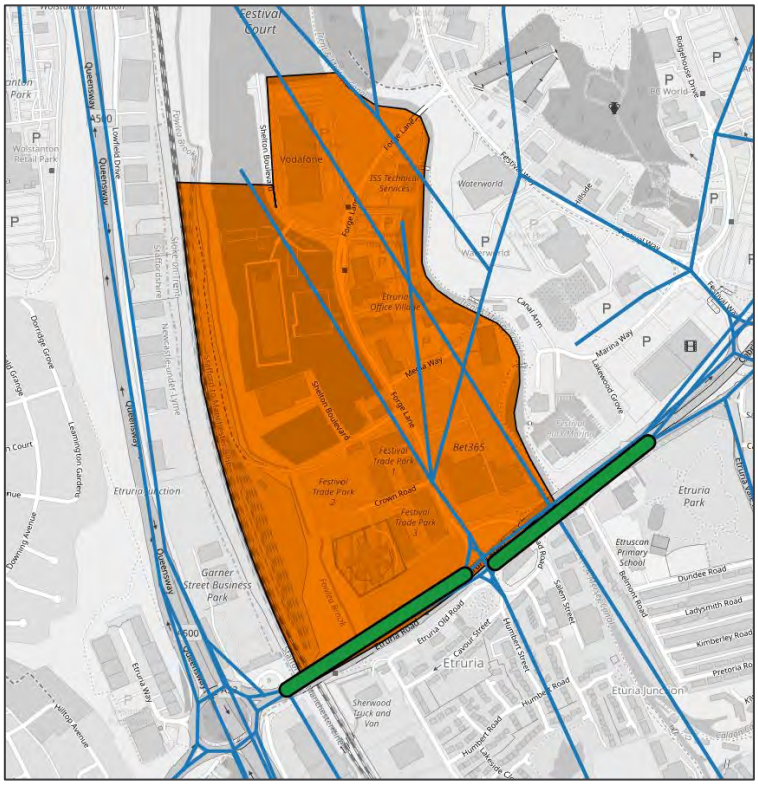
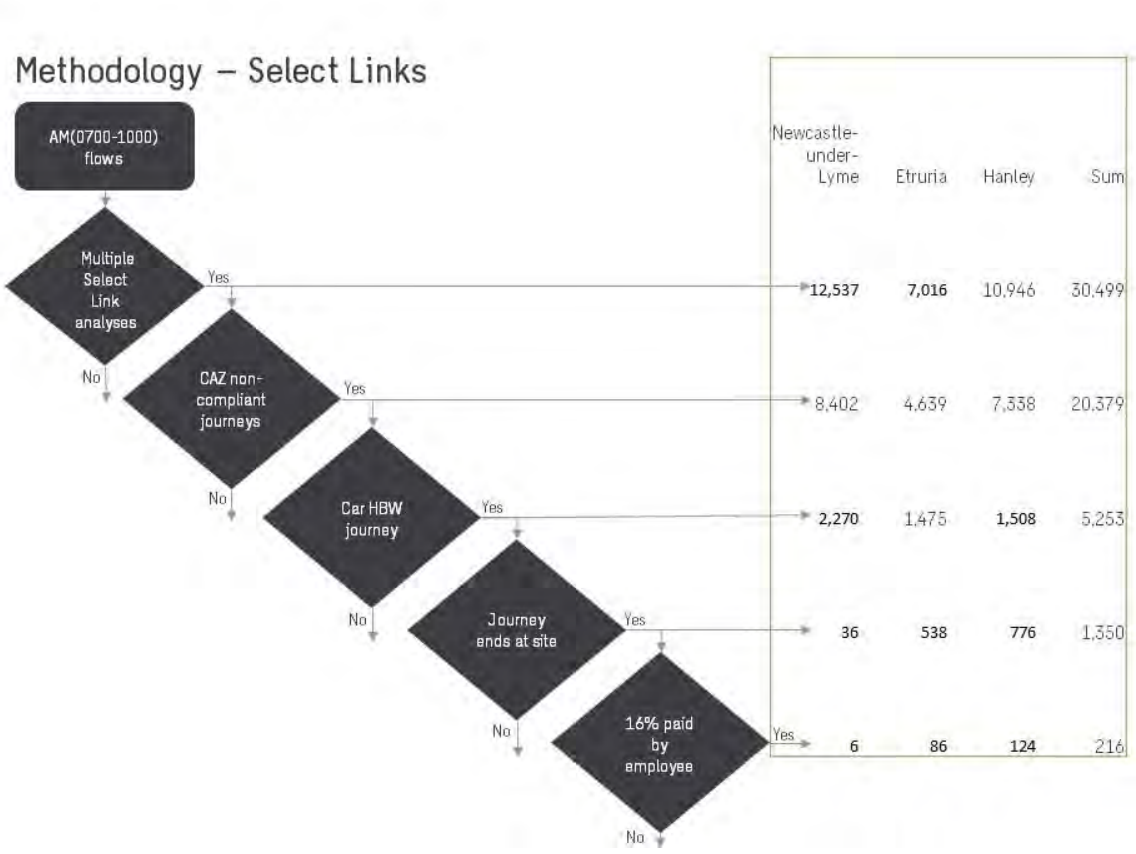


Figure 3-4: Cordon sites in Hanley

Figure 3-5 shows how the car demand matrices from each potential WPL site were derived to yield estimated amounts of employee-paid-WPL commuting journeys to the selected sites. Non-compliant Car Home-Based Work (HBW) journeys were extracted from all non-compliant car journeys by applying the proportion of HBW journeys for the relevant zones. These journeys for all three sites were collated and only the journeys terminating in each of the identified sites were considered for further analysis. These totals were further reduced to 16% based on the observation that in Nottingham, 42% of work-place parking spaces are liable to the levy whilst for 38% of liable spaces, employers pass the levy to their staff. Therefore for 16% of work-place parking spaces, the levy is paid by the employee.

The total number of incoming journeys potentially liable for a WPL per zone was calculated as a percentage of all incoming journeys.

Figure 3-5: WPL Demand analysis steps



3.2 Car parking capacity study

A count was made of public and private parking within each site. This was made using on-line parking information and analysis of aerial photographic data. "Public" carparks were defined as those where there is predominantly public access allowed for visitors and customers such as supermarket, pay-and-display and council car-parks. "Private" car-parks were defined as those associated with business where usage would have been likely to be liable under the Nottingham WPL regulations. Spaces obviously used for fleet and display vehicles were not counted (e.g. at police stations or car dealers). Where land was obviously used for car-parking though spaces were un-marked, an estimate was made based on the current usage from aerial photography. Extents of individual car-parks were estimated from observed boundary features such as walls and fences.

4 Results

4.1 Select-links analysis

Figure 4-1 shows incoming journeys liable for a potential WPL. This is expressed both as a percentage of total incoming car journeys and as absolute car journeys. The numbers are comparatively small and only make up a small proportion of all car journeys into the regions.

Figure 4-1: Incoming journeys liable to WPL

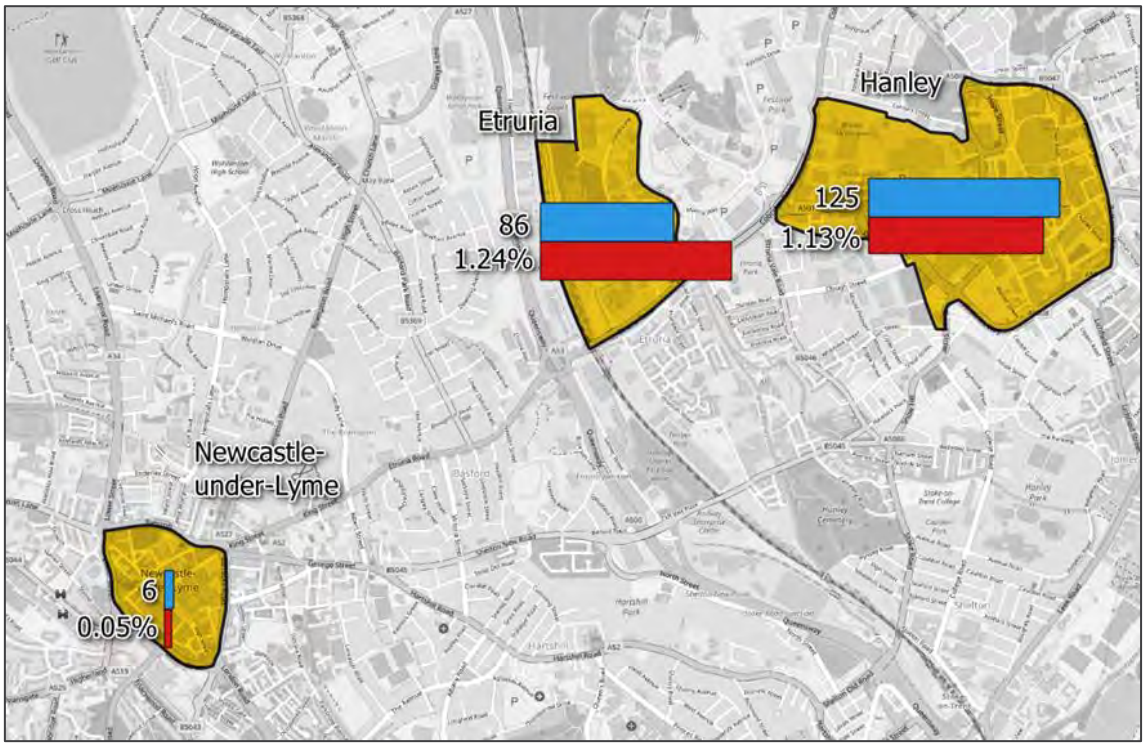
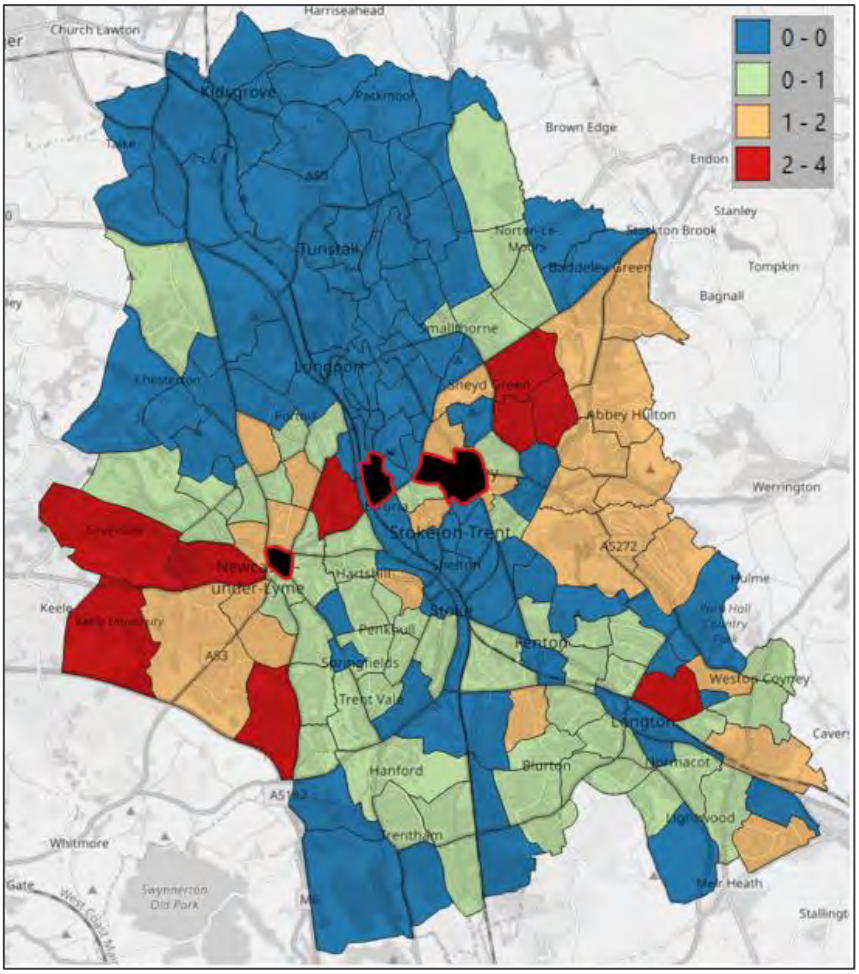


Figure 4-2 shows trips liable for a WPL per internal zone. Most journeys were generated from the areas of Keele, Silverdale, Westbury Park, Basford, Sneyd Green and Longton.

Figure 4-2: Source of incoming journeys liable to WPL per zone



4.2 Carparking capacity study

Table 4-1 shows the results of counting totals of public and private parking in Newcastle-under-Lyme, Etruria and Hanley. It can be clearly seen that there are very different patterns of parking availability across the three sites. Newcastle-under-Lyme and Hanley have a predominance of public parking whilst Etruria is exclusively private parking. The table shows an estimate for the potential number of spaces liable for a potential WPL.

Table 4-1: Results of carpark capacity study

	Newcastle-under-Lyme	Etruria	Hanley	Totals
Private Spaces	342	2958	1057	4357
Private Sites with >10 Spaces	12	23	34	34
Potential WPL Spaces	60	976	281	1317
Capacity reduction Following WPL	45	732	211	988
16% Spaces Paid by employee	7	117	34	158

The locations of these car parks are identified for Newcastle-under-Lyme, Hanley and Etruria in Figure 4-3, Figure 4-4 and Figure 4-5 respectively.

Figure 4-3: Potential WPL liable car parks in Newcastle-under-Lyme

Figure 4-4: Potential WPL liable car-parks in Hanley

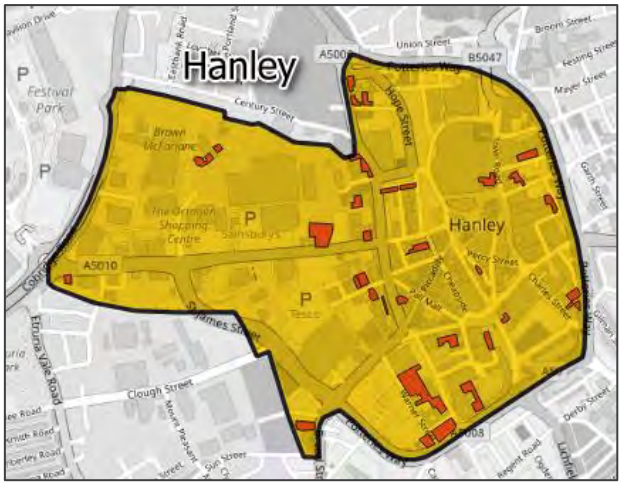
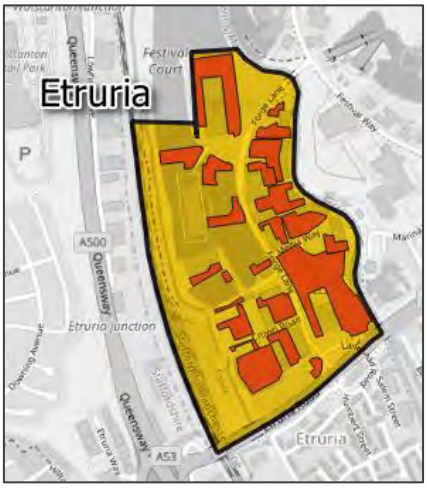


Figure 4-5: Potential WPL liable car-parks in Etruria



Not all these spaces may be utilised, and Nottingham saw a 25% reduction in available work-place parking following the introduction of the WPL.

If a reduction of 25% in capacity is assumed, along with a 16% level of employee payment, 158 spaces may be liable to a potential WPL and paid for by the employee.

To produce this estimate, several assumptions were made. These include,

- A potential WPL would be constructed along similar lines to the Nottingham model (charge per organisation on spaces used, exemptions for some user classes and small carparks < 10 spaces)
- Only private spaces would be liable for a WPL (some public spaces may also be liable if leased to a private company)
- Individual private car-parks are used exclusively by a single organisation (where these may be shared, the number of spaces per organisation may fall below where a potential WPL is required to be paid)
- All private car parks are used to capacity (If a car park is knowingly not used to capacity, an organisation may choose to acquire permission for fewer vehicles than they have spaces available)

5 Conclusion

This study has specifically investigated a potential WPL in North Staffordshire where the aim is to encourage a shift from non-compliant vehicles. This is different to the purpose of the Nottingham WPL which was to reduce congestion and promote a mode shift to public transport through additional investment. The other key difference is the difference in extents with the Nottingham WPL extending to the entire administrative area whilst the WPL proposed here only extents to key areas of work-place parking.

Both the results from the select-link analysis and car park study show independently that only a small percentage of AM peak car journeys would be impacted by a potential WPL where the cost is passed to the employee. Whilst Nottingham saw notable mode shift to public transport since the introduction of the WPL, this is linked to large investments in public transport infrastructure that was part-financed from the extensive WPL. The size of the WPL proposed here would be unlikely to fund similar improvements. It's therefore doubtful that such a measure would offer substantial reductions in NO_2 emissions through the reduction in non-compliant vehicle journeys.