

TRANSPORT FINDINGS

City Centre Car Parking Provision in Liverpool

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Findings

This paper presents an inventory of car parking provision in the city centre of Liverpool, UK. Using a systematic approach which determines car-parking spaces through publicly available data, manual counts of satellite imagery and inference to determine maximal potential capacity, site visits, and, and planning records, the study identified 34,585 parking spaces in Liverpool City Centre. This is analysed in terms of public parking, commercial parking (e.g. staff/customer-only), and resident parking. Using census data, the study suggests that Liverpool city centre has ample supply and, perhaps, a modest over supply of car parking spaces to meet potential demand.

1. QUESTIONS

With the overarching objective of establishing the provision of car parking in Liverpool City Centre, and developing an approach which others may follow in other places, this study addresses the following questions.

1. How many parking spaces (i.e. where one might legally park a car) exist in Liverpool City Centre?
2. How many of those parking spaces are available to the general public?
3. How many non-public parking spaces exist (e.g. Staff/customer/Resident Only)
4. How does the supply of parking spaces relate to the potential demand of users?

2. METHODS

This investigation into car parking in Liverpool is inspired by the methods used by Scharnhorst (2018) in his study of US cities. Though not an explicit replication of that study, the similarities are strong, and present a repeatable approach for others taking a similar inventory thus building a broader sense of parking provision in, and across, different urban areas.

To create an inventory of car parking in Liverpool, the study uses a systematic approach which was conducted as follows.

2.1. Establishing a study area.

The site was premised upon Liverpool's 'Controlled Zone' (CZ) which is subject to heightened parking restrictions and represents, effectively, the city centre. This is the land bounded by Upper Parliament Street (South), Grove Street (East), Leeds Street/Islington (North), and the River Mersey (West). In addition, to capture provision which is proximate to the CZ a buffer of one 'city block' was used.

2.2. Systematically inventorying car parking provision

To begin, a database was established. Each entry included: A unique identifier, location description, type (e.g. surface, multistorey, street), number of spaces., and a categorisation based on usage. The categories were:

- Public (i.e. available to all)
- Commercial (Staff Only)
- Commercial (Customer/Visitor Only)
- Resident Only

The database was populated through the following steps. First, public car parks (parking lots) were identified using available data (e.g. Liverpool City Council and commercial websites).

Second, a systematic review of streets in the CZ was conducted. Using Google Maps' satellite and street imagery, this worked clockwise round the study area manually identifying:

1. Further off-street parking not included in publicly available data. This included public parking, and private parking (e.g. staff/residents/customers only). Satellite imagery identified the car park, and street imagery verified this and identified any conditions via signage). Parking spaces were counted manually. Where no bay markings were identified, I counted the cars present, and inferred the maximum remaining potential capacity using cars on the imagery as a size reference point (e.g. completing rows).

Where spaces were part of internal structures, planning records (e.g. design statements, schematic drawings) from Liverpool City Council's planning portal¹ were used to determine provision.

Individual private driveways/garages were not included.

¹ <https://liverpool.gov.uk/planning-and-building-control/search-and-track-planning-applications/>

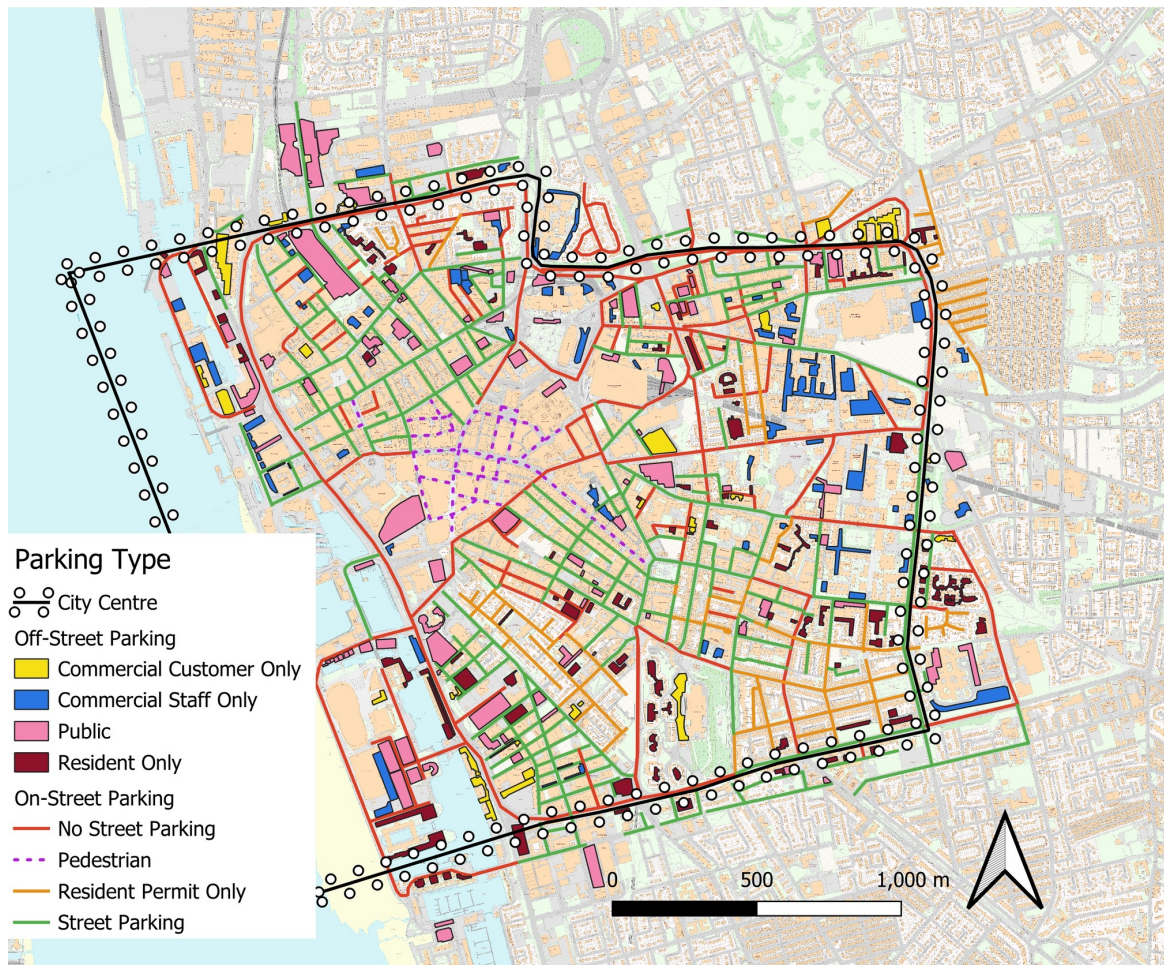


Figure 1. A Map of Identified Car Parking in Liverpool City Centre.

2. The availability of on-street parking in all streets. This was defined as a designated on-street parking bays/areas (e.g. ‘pay and display’, and ‘permit only’), or with no parking restrictions. Where bays existed, they were counted. Where drivers could park anywhere on a street, I counted the cars present, and inferred the maximum remaining potential capacity using cars on the imagery as a reference point (e.g. completing rows).

Each entry in the database was charted on a recent basemap of Liverpool, mapping the footprints of off-street car parking, and the parking status of all streets (see [Figure 1](#)).

Finally, to ensure maximal coverage, in-person site visits cross-referenced this map with existing conditions. This identified new-builds not on digital imagery, and where car parks no-longer existed. For the former, the processes of point a (above) were repeated.

Table 1. Identified Car Parking Spaces in Liverpool City Centre

		Within Controlled Zone		Within Controlled Zone Buffer		Total	
		Car Parks	Spaces	Car Parks	Spaces	Car Parks	Spaces
Public Car Parking		264	20,006	39	3,206	303	23,212
Of Which	Surface	79	4,849	9	1,237	88	6,086
	Multi-Storey	19	9,921	1	1,249	20	11,170
	Underground	4	2,119	0	0	4	2,119
	Street*	162*	3,117	29*	720	191*	3,837
Commercial Car Parking		101	5,412	17	1,079	118	6,491
Of Which	Staff-Only	74	3,651	8	663	82	4,314
	Customer-Only	27	1,761	9	416	36	2,177
Resident Only		111	3,657	26	1,225	137	4,882
Of Which	Off-Street	72	3,119	14	862	86	3,981
	Street	39*	538	12*	363	51*	901
Total		476	29,075	82	5,510	558	34,585

*Indicates a whole street in which parking of this kind is available

3. FINDINGS

The study identified 34,585 parking spaces in Liverpool City Centre ([Table 1](#)), of which 29,075 were inside the CZ. Off-street parking comprised 29,647 (86%) of spaces across 316 individual car parks (Largest: 1,900. Smallest: 3. Average size: 97. Median size 33). On-Street parking comprised 4,738 (14%) of spaces. Of the 352 streets considered, 242 (69%) had on-street parking of some form available.

A total of 23,212 parking spaces were available to the public. Of those, 19,375 (83%) were off-street, and 3,837 (17%) were on-street. Of those off-street spaces, 58% were in multi-story car parks, 31% were provided through surface car-parking, and 11% were underground.

Although cost/pricing was not the focus of this study, the cheapest off-street hourly parking rate was £0.90/hr, and the most expensive was £8/hr. The cheapest day-rate was £2.45/day, and the most expensive £25/day. Although some on-street parking was free, the majority was monitored by Liverpool City Council (e.g. pay-and-display/pay-by-phone)

With regards to commercial parking (i.e. parking for staff/customers only), there were 6,491 spaces – 28% of all city-centre spaces. Of those, staff-only parking comprised 4,314 spaces (12% of provision). Resident-only parking comprised 4,882 spaces (14% of provision).

At the 2021 census, the population of Liverpool city centre's three wards was 20,057. When considering overall parking provision, there are 1.7 spaces for every ordinary resident (all ages).

The city centre comprises 14,250 households (ONS 2021a), owning 5,572 cars (ONS 2021c). The identified 4,519 resident-only spaces within the CZ² meets 81% of demand. Furthermore, if the 810 detached/semi-detached homes (ONS 2021b), which are presumed to have space for off-street parking, are included, this rises to 96% of demand. This would rise further if accounting for individual private garages which were not included, and residential streets with broad freedom to park on-street for permit-holders.

The 2022 Business Register identified 122,095 jobs located in the CZ (ONS 2022). Presuming Liverpool's modal split of 27.8% of those travelling to work in a car is reflected uniformly, 33,942 of those employees would ordinarily arrive by car. Therefore, the 29,703 non-residential spaces identified in Liverpool could meet 88% of this capacity, presuming that every employee arrived at the same time.

From the above, the study suggests that there is ample supply of car parking in Liverpool City Centre. Given the likelihood that this supply is unlikely to be entirely required simultaneously, there is perhaps a modest oversupply (i.e. empty/under-utilised spaces).

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² NB: 68 off-street, and 363 on-street resident-only spaces in the North-East corner were excluded from this number, as though within the buffer, sit within the Kensington Ward, and the residents do not reside within the city- centre.

REFERENCES

- ONS. 2021a. "Census Table TS017 - Household Size."
- . 2021b. "Census Table TS044 - Accommodation Type."
- . 2021c. "Census Table TS045 - Car or van Availability."
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- Scharnhorst, E. 2018. "Quantified Parking: Comprehensive Parking Inventories for Five US Cities."
Research Institute for Housing America.

SUPPLEMENTARY MATERIALS

Supplemental Information: Database

Download: <https://findingspress.org/article/124970-city-centre-car-parking-provision-in-liverpool/attachment/250230.xlsx>

Supplemental GIS Shapefiles

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