Field Dynamics

CONURBATION ZONING

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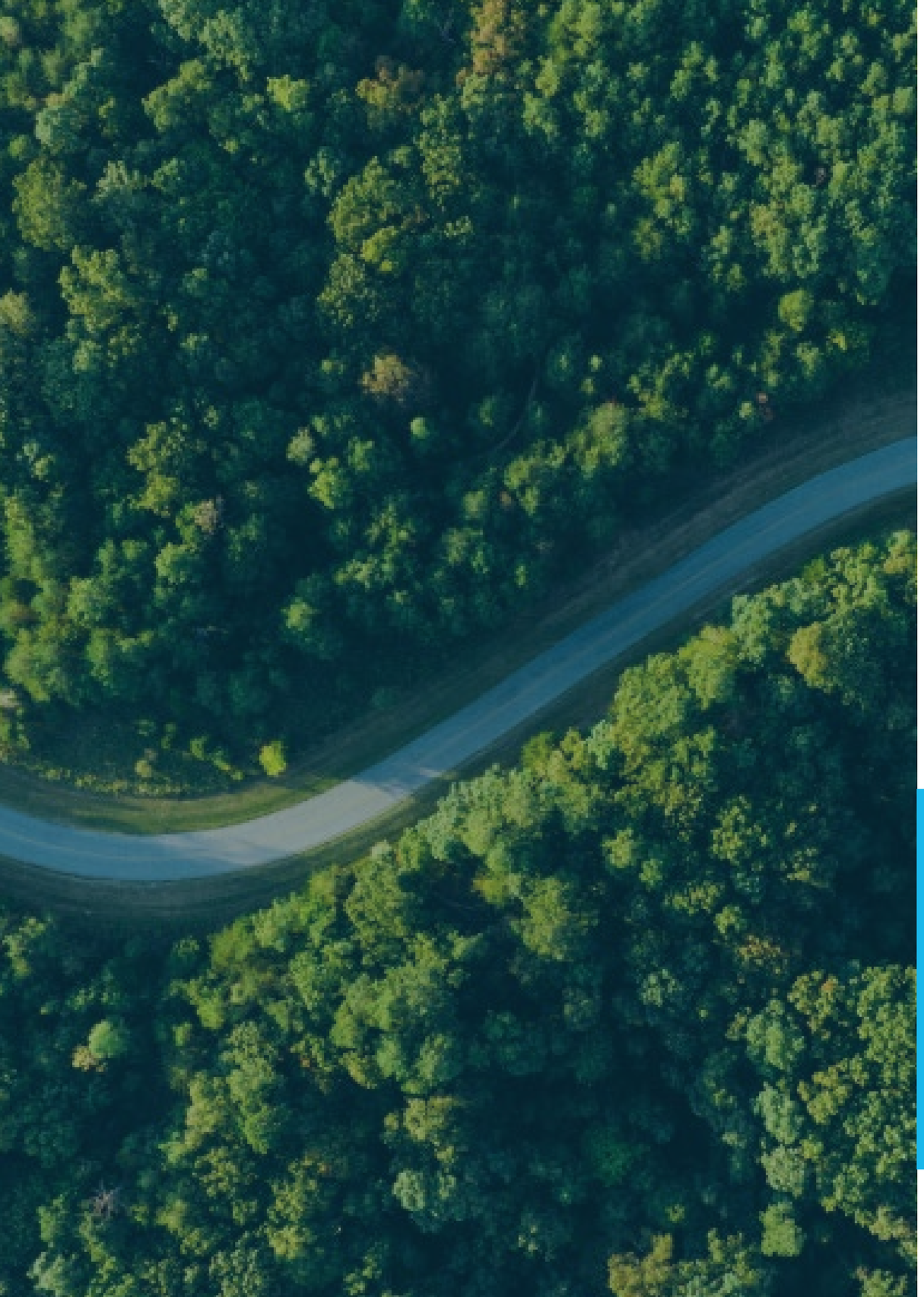
HOW CONURBATION ZONING CAN HELP TO CREATE AN A EV CHARGING BLUEPRINT



REPORT

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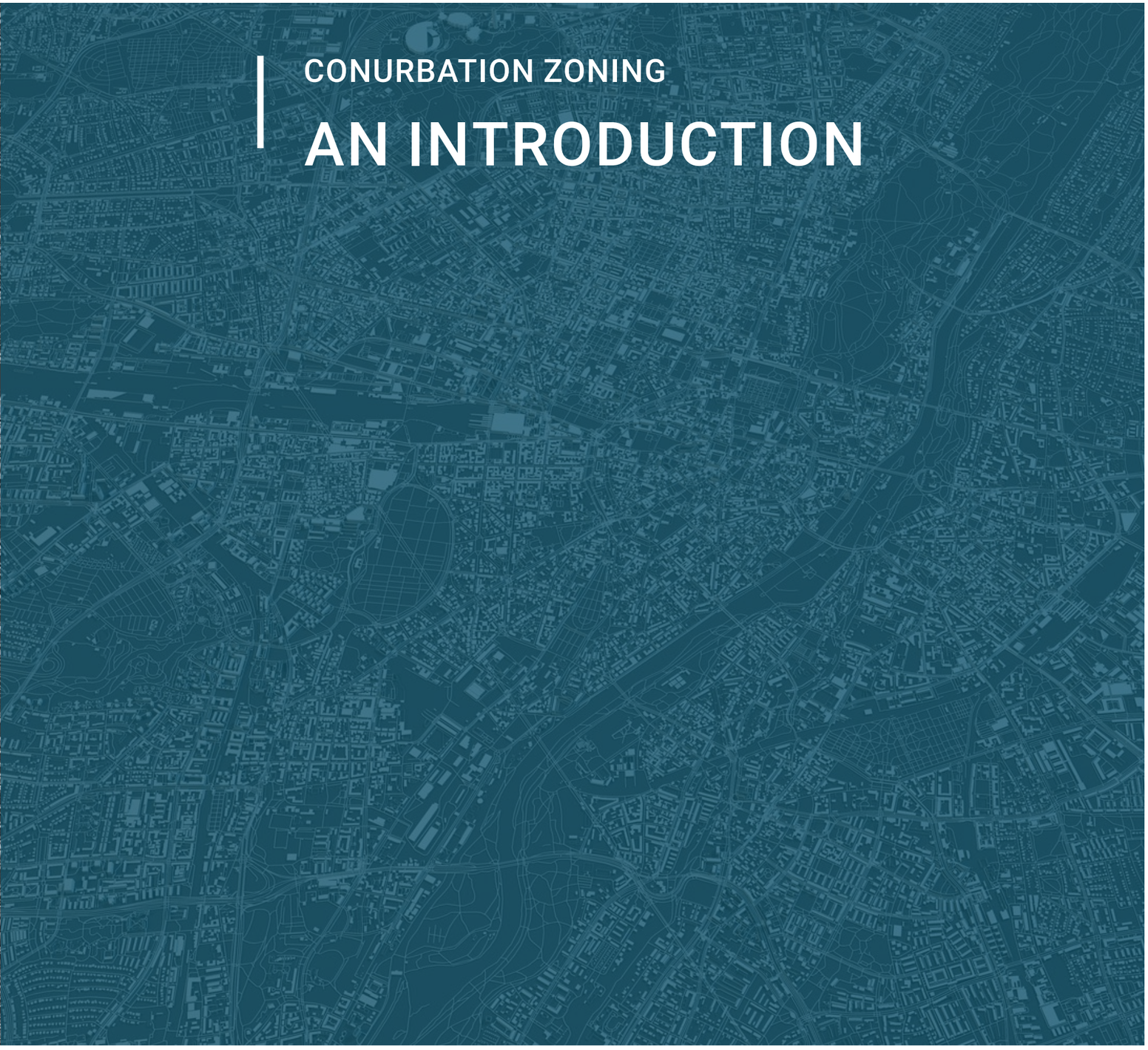
DISCLAIMER



CONURBATION ZONING

AN INTRODUCTION

Not all EV Drivers are the same – so logically the provision of EV charging support by Local Authorities should vary also. With Boris Johnson's 10-point plan pledging more support for infrastructure and the revised 2030 ICE ban, the need to create a balanced and fair master plan is more important than ever. But as yet, a standardised tiered approach to such a plan has not been developed, so perhaps a first step should be to look at how to break a town or city down into an initial set of areas or zones.

It is reasonable to suggest that in times of limited, but targeted funding, a Council might invest in two agendas: Firstly, supporting targeted residential areas to ensure communities don't get left behind. Secondly, attracting residents and visitors to spend in city and town centres to support local businesses.

These two aims support a view that councils might not view their town or city as one entity, but instead look to zone their area based on the needs of different groups of drivers.

This focused approach helps to reduce total spend, increase local support, attract commercial investment and begins to transition the focus away from the affluent middle class to those areas of society that would benefit the most.

This paper outlines how one version of this zoning might work. Clearly, zoning is not a silver bullet, it is only one aspect of a robust master planning strategy. Ultimately, defining zones within an area is not solely a technical process, engaging stakeholders is as, if not more, important than the original analysis.

However, we do believe that this approach will take a council forward in terms of an EV charging strategy and help to justify access to funding from both the public and private sector to support their area.

APPLYING OUR APPROACH

Theoretical approaches are always much easier to understand when using a real life example, so we have used **Warwick** as our representative town.

Warwick has a wide range of resident households and also contains a number of different businesses/ industries in concentrated areas including Warwick Castle and Warwick Technology Park, home to 207 individual companies.

There are 93 towns and cities in the UK with a similar population to Warwick (30k-40k) and we are confident that this methodology can also be scaled up and down to towns and cities of different sizes.

ZONES

A zone identifies one area from another for different legal and financial approaches to charging infrastructure.

The key to this form of zoning is to understand how to minimise council cost and maximise commercial investment. Our approach leads to 5 key zones:

1. Commercial
2. Suburban
3. Public Need
4. Visitor
5. Minimum Need

Once these zones have been identified they can be published as a plan – in a similar way to a council's Local Development Plan (LDP) so that residents, CPOs and other stakeholders can understand the strategic direction and engage from an informed position.

WARWICK: KEY STATISTICS

- **Population:** 30,890
- **Households:** 13,169
- **% On-Street Households:** 37%
- **On-Street Households:** 4,903
- **Total Area (m²):** 15,827,210
- **Conurbation Vehicles:** 16,999
- **Business Vehicles:** 2,522
- **Road length (m):** 198,617
- **On-Street Vehicles:** 6,290
- **On-Street Business Fleet:** 933

ZONE 1 COMMERCIAL

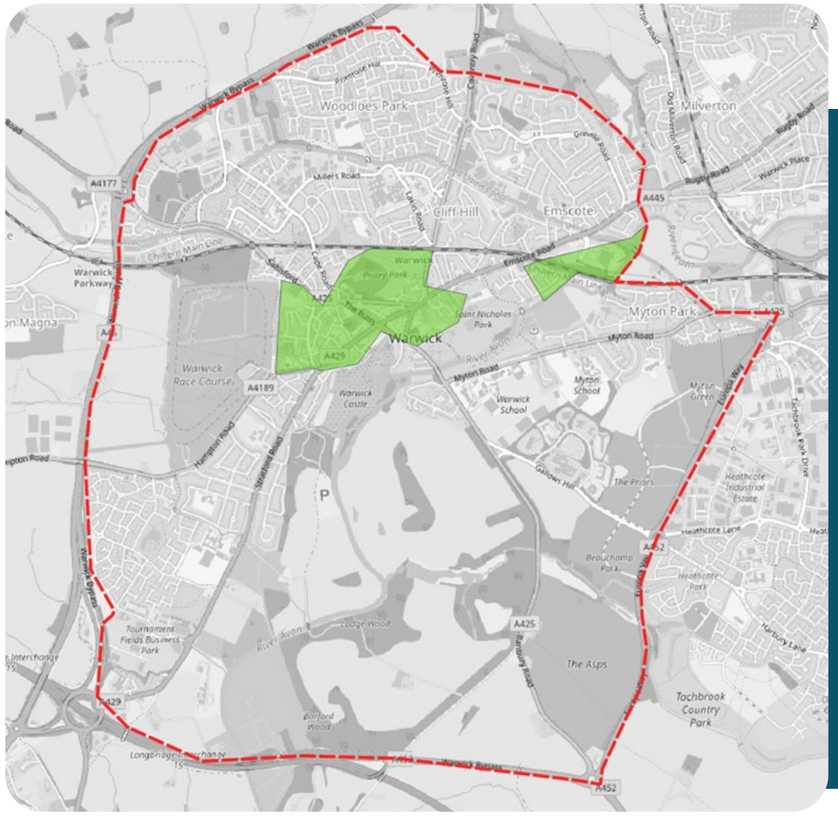
Charge Point Operators (CPO) need to make a profit. Even if there is central government funding for the initial installation, the CPO needs to see a future of high utilisation in order to justify their investments. This does happen today within the early adopter market, there are locations where such a business case, perhaps including broader marketing needs, makes sense including supermarket/retail car-parks, pub car-parks and train stations.

These locations, where it can be assumed that commercial CPOs can make sustainable business cases without ongoing council support, can be aggregated together to form the Commercial Zone.

Councils can greatly increase the success of Commercial Zones by:

- Making the town or city more attractive by collating and publishing the key data and information necessary for CPOs to make an assessment
- Facilitating and enabling the CPOs with planning and particularly parking bay (TMO) support
- Committing to not compete - CPO margins are super slim at best and often negative, so the council needs to commit to not compete to give the CPO confidence to invest

Applying these principles to Warwick creates the following Commercial Zones.



STATS

- **Households:** 1,498
- **On-Street Households:** 1,023
- **Total Area (m²):** 760,931
- **Supermarkets/Social POI:** 63
- **Number of Public Car Parks:** 9
- **% On-Street Households:** 68%
- **Off-Street Households:** 475
- **Road length (m):** 17,485
- **Businesses/Tourists POI:** 19
- **Number of Public Car Parking Bays:** 693

ZONE 2
SUBURBAN

The vast majority of houses in a Suburban Zone have their own drives and so drivers will charge most often using their own home chargers, the installation cost of which is supported centrally. Public EV chargers in these zones would be underutilised, making them unattractive for CPOs and a waste of funding for councils.

These large housing areas can be aggregated together to form the Suburban Zone. There is a good case for councils to declare that they will not invest in charging infrastructure in suburban zones.

Warwick has a number of Suburban Zones as can be seen below:

STATS

No. of Zones: 3

Households: 5,081

On-Street Households : 907

Total Area (m²): 2,595,482

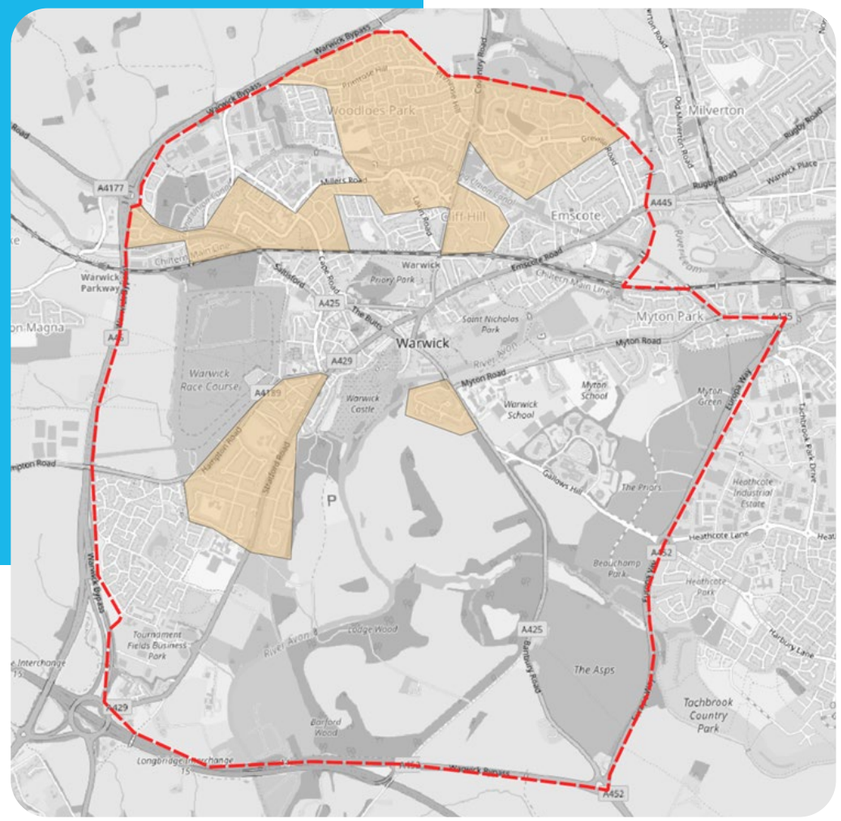
Supermarkets: 10

% On-Street Households: 18%

Off-Street Households: 4,174

Road Length (m): 52,562

Businesses/Tourists POI: 5



ZONE 3
PUBLIC NEED

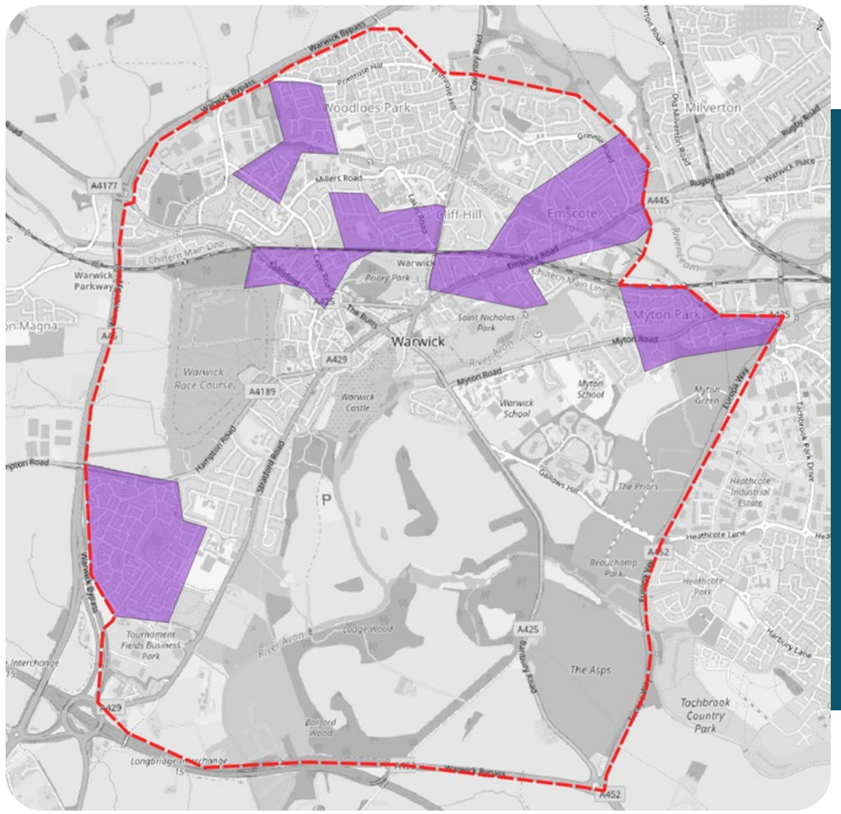
There are areas within a town or city that will not be attractive to CPOs for the foreseeable future. These areas will tend to have high levels of On-Street parking and residents will want to charge frequently, locally and at a low cost. These are also often areas of greater social need.

Coincidently, these will also be areas of high EV growth when the large national business fleets of cars and vans (e.g. Utilities, deliveries, taxis etc) begin their transition to EVs.

Areas of predominantly On-Street Households, distant from the public chargers in Commercial Zones, can be aggregated together to form the Public Zone.

The council is likely to need to agree to a funding policy for these inherently unprofitable chargers that will be similar to the policy the council has on other inherently unprofitable public transport assets such as roads, pavements and bus shelters.

On-street charging in Public Zones can be delivered in a number of ways and there is much discussion as to the best method. Local hubs have the benefit of lower cost but are unpopular with business drivers who need to charge most nights. On-street charging is convenient but there are challenges around increased street furniture and cable hazards. In reality, a mix of both will be needed.



STATS

No. of Zones: 6

Households: 6,029

On-Street Households: 2,842

Total Area (m²): 2,205,072

Social/Supermarkets POI: 16

% On-Street Households: 47%

Off-Street Households: 3,187

Road length (m): 51,846

Businesses/Tourists POI: 9

ZONE 4
VISITOR

While a council's responsibility to its residents is to ensure the greatest range of charging services at the lowest cost, a council's responsibility to its visitors is different. Already many councils treat these groups differently in terms of differential parking charges. The same argument can be made for EV charging as a council looks to make profit from visitor charging sessions by identifying Visitor Zones and investing in charging infrastructure there in the most profitable way possible.

Examples of these areas include tourist attractions (e.g. Warwick Castle) and business areas (e.g. Warwick Business Park), all areas where local residents are unlikely to go to charge.

Warwick's Visitor Zones can be seen in the map below.

STATS

No. of Zones: 6

Households: 405

On-Street Households: 95

Total Area (m²): 3,201,783

Social/Supermarkets POI: 8

Number of Public Car Parks: 2

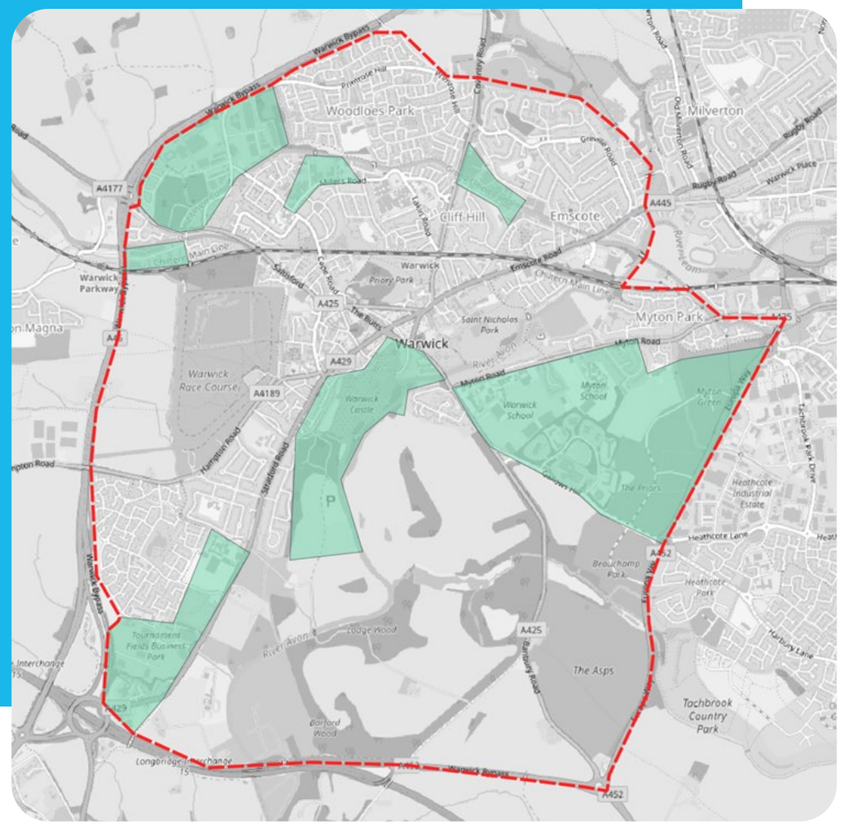
% On-Street Households: 23%

Off-Street households: 310

Road length (m): 47,246

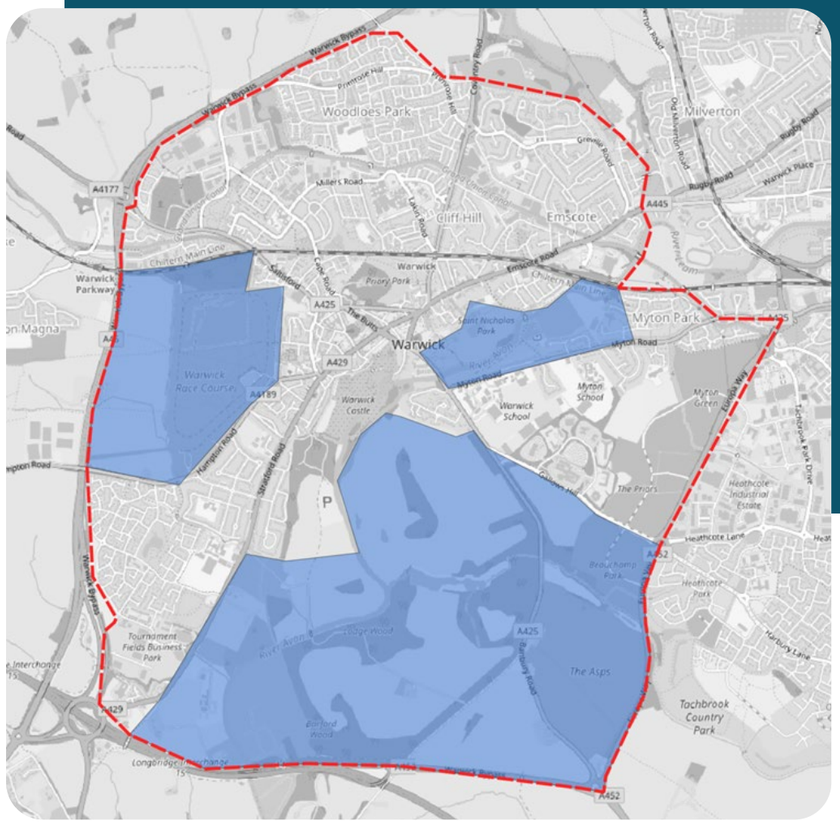
Businesses/Tourists POI: 7

Number of Public Car Parking Bays: 310



ZONE 5
MINIMAL NEED ZONE

There remains the areas of the town or city that have minimal On-Street Households and limited commercial or social needs. These are aggregated into the Minimal Need Zone. Given restricted funds, there is a limited argument for a council to invest in these areas.



STATS

Households: 156

On-Street Households: 36

Total Area (m²): 760,931

Social/Supermarkets POI: 63

% On-Street Households: 23%

Off-Street Households: 120

Road Length (m): 29,478

Businesses/Tourists POI: 19

IN

SUMMARY

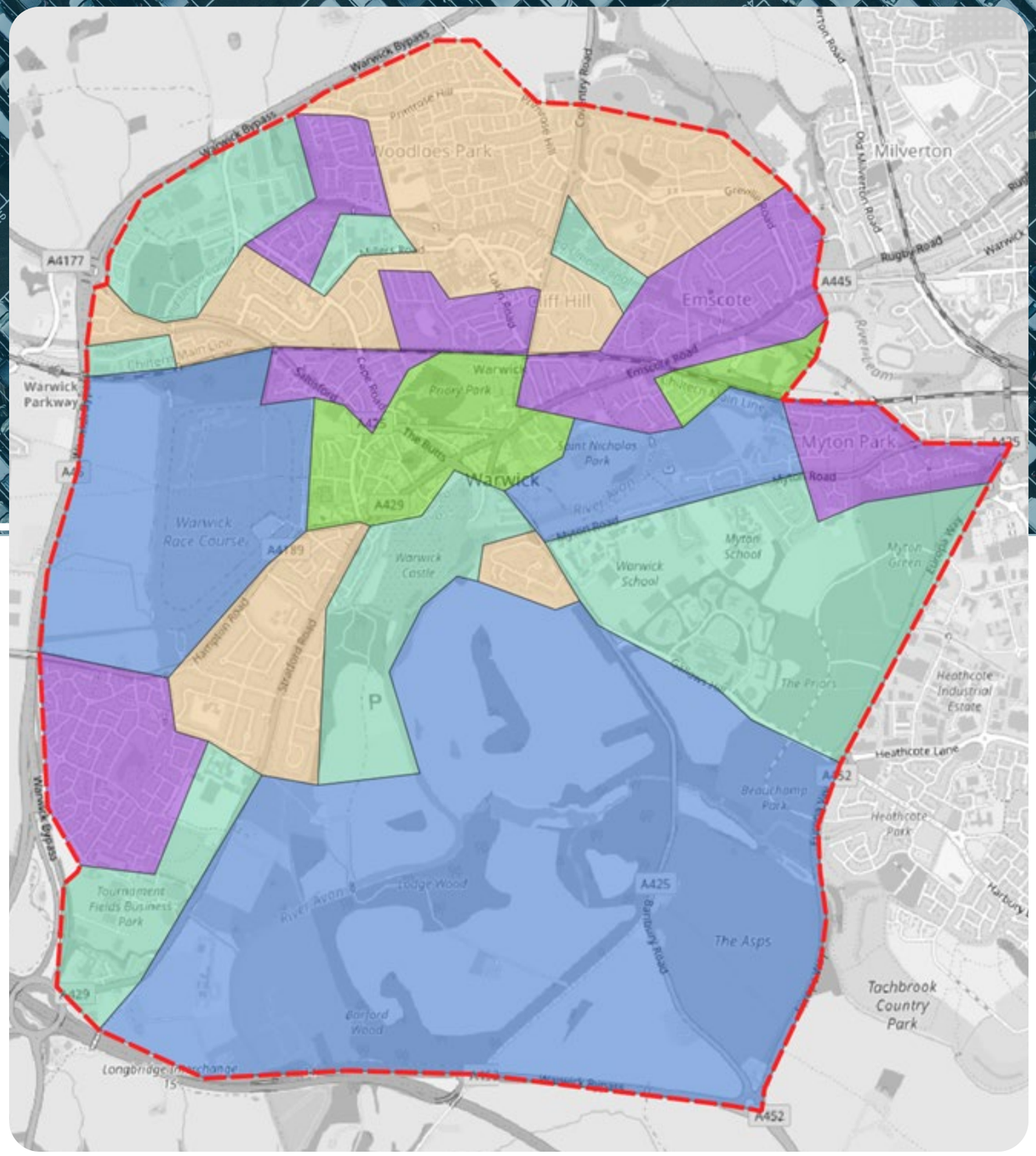
ZONE	NO.	%
Commercial Zone	2	5%
Suburban Zone	3	16%
Public Need Zone	6	14%
Visitor Zone	7	20%
Minimum Need Zones	3	45%

A standard approach to creating an EV Charging Master Plan has yet to be developed but it makes sense that a zoning exercise should be an initial stage as it performs a similar role for zoning for development. It provides transparency so the various stakeholders can engage in an informed way and it provides councils departments with the right boundaries within which to develop and pursue policy.

It also maximises the value that can be made from commercial relationships and the social value that can be achieved from council investment.

Developing a clearly articulated set of zones is not straightforward and will require careful, appropriate, data-driven consultation with stakeholders as part of a wider charging infrastructure master plan.

However, we believe this type of approach will help to ensure that the funding, private and public, is spent in the most effective ways to ensure EV transition happens holistically.



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