Wokingham Borough Council ELECTRIC VEHICLE CHARGING STRATEGY

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WOKINGHAM BOROUGH COUNCIL

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ABOUT THIS DOCUMENT

This is the summarised version of our Electric Vehicle Charging Strategy for the borough. The document outlines the likely demand for Electric Vehicles (EVs) and chargepoints across our borough and the role of the Council in meeting this demand.

A full-length version of the strategy which details much of this work is available from the Wokingham Borough Council website.

The development of this plan is based on extensive analysis and research, early engagement with various chargepoint operators, best practice and advice from other local authorities, and technical support from the Energy Savings Trust's Local Government Support Programme.

FOREWORD

The government's decision to end the sale of new petrol and diesel cars by 2035 is a big step towards the decarbonisation of the transport system. Taking into consideration that the road transport sector is the biggest emitter of greenhouse gases nationally, and the second largest locally (following the domestic sector), there is real momentum around getting people into cleaner modes of transport.

Our Climate Emergency Action Plan and emerging Local Transport Plan 4 recognise that achieving carbon neutrality from transport starts from the first principle on reducing our reliance on the private car. For local trips, this can be achieved by more people walking, cycling and wheeling. However, for longer journeys we appreciate that this is not always possible and therefore we want to make it easier for our resident to travel in a more environmentally friendly way.

The EV industry has seen a range of technical breakthroughs over the past decade which have laid the foundations for a rapid increase in EV ownership. As of the end of 2023, nearly 4,500 ultra-low emission vehicles were registered in our borough, a growth of 44% on the number registered in 2022. We recognise that for everyone to make the switch, the right charging infrastructure will need to be in the right place both now and in the future.

Working with the government and private sector to deliver a comprehensive and inclusive chargepoint network in our borough is central to our vision. To achieve this, an action plan has been devised within this Strategy with key objectives to direct and deliver the future EV charging infrastructure needs of our borough.

Cllr Jordan Montgomery
Executive Member for Environment and Climate Emergency

Cllr Paul Fishwick
Executive Member for Active Travel, Transport and Highways

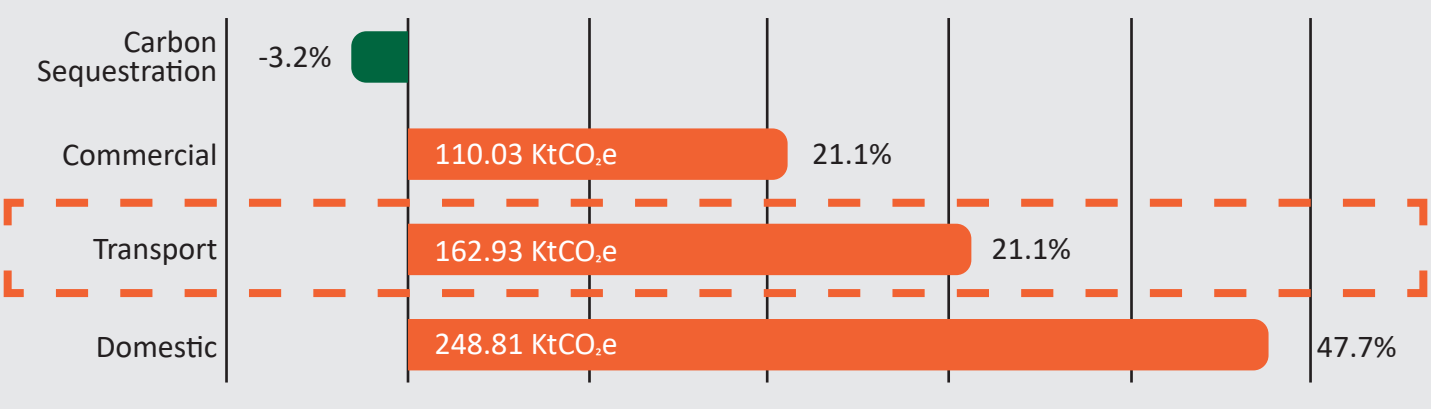
INTRODUCTION

Why an EV Charging Strategy is needed

Nationally, the UK government has committed to end the sale of new petrol and diesel cars by 2035 [1], in an effort to decarbonise road vehicles and achieve net zero emissions by 2050 [2].

At a local level, in July 2019, Wokingham Borough Council (WBC) declared a climate emergency and is committed to do as much as possible to achieve carbon neutrality by 2030 [3]. Transport is the second largest contributor, following the domestic sector, to the borough's carbon emissions, responsible for 31.2% in 2020.

Figure 1– WBC Footprint 2020 ($ktCO_2e$). Domestic, Commercial and Transport adds up to 100% and Carbon sequestration reduces total emission by 3.2%



Internal Combustion Engine Vehicles (ICEVs) are a leading cause of transport emissions and so electric vehicles have a key role to play in reducing greenhouse gases, improving air quality and tackling climate change.

Looking at the total carbon emissions released from all cars registered in our borough in 2020 (152 $KtCO_2e$), petrol and diesel vehicles were responsible for 97% of these emissions.

While this plan focuses on the switch from ICEVs to EVs, it is important to consider other modes of transport as well. Simply switching all vehicles from ICEVs to EVs will not solve issues around congestion or public health. The Council's Climate Emergency Action Plan has a 50% reduction target in ICE private car mileage to reduce carbon emissions. Increasing the number of EVs within the borough can help achieve 33% of this reduction, while the remaining 17% would come from reduced travel, an increase in public transport usage and an increase in active travel.

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[1] Net zero: Rishi Sunak pushes back ban on new petrol and diesel cars to 2035- BBC News

[2] Transport Decarbonisation Plan: A Better, Greener Britain (2021) HM Government. [online] available from: https://www.gov.uk/government/publications/transport-decarbonisation-plan

[3] Wokingham Borough Council (2022) Climate Emergency, available from: https://www.wokingham.gov.uk/climate-emergency Accessed 4 September 2023

Based on the Department for Transport (DfT) study ***Taking charge: the electric vehicle infrastructure strategy*** [4], the vast majority of drivers will do most of their charging at home, overnight. However, we need public chargepoints for two main purposes: to enable long distance journeys, and to support those without off-street parking. According to the study, by 2030 there could be 10 million EVs on the road. To facilitate charging these vehicles, around 300,000 public chargepoints will be required nationally as a minimum, whilst the number may increase up to 700,000 chargepoints dependent on consumer charging behaviours and preferences.

The role of the Council

Whilst there is a keen appetite from the private sector to invest in EV charging infrastructure, this is primarily focused around providing rapid chargers in the more economically viable short stay locations. As such, there are likely to be gaps in provision in areas where there is not yet a commercially viable site, either due to limited demand or barriers to delivery, such as grid constraints (where the electricity network does not have capacity for new chargepoints), or a lack of suitable sites.

There is a clear role for the public sector to intervene and plug these gaps, at least in the short to medium term until the market matures, to avoid a lack of charging infrastructure stifling the transition to EVs. As the custodian of the public land, the Council can act to ensure the provision of an equitable charging network where all residents and local businesses are all equally able to transition to EVs, before the market begins to provide services only where there is a profit to be made[5].

Our Vision and Objectives

VISION

To facilitate the increased use of EVs, by 2030, we must have in place a comprehensive and inclusive chargepoint network, one that our residents, businesses and visitors can trust, and they are confident using.

Our vision is therefore to support the rollout of public EV chargepoints, catering for any existing and future EV demand, whilst facilitating zero emission trips that can't otherwise be made by sustainable transport modes.

OBJECTIVES

To underpin the achievement of our vision by 2030, a set of objectives have been identified.

- Ensure charging provision for EVs keeps pace with demand
- Ensure all new chargepoints are accessible for all
- Ensure the solution is future proofed
- Provide a variety of charging options to accommodate the range of residents within the borough and their diverse needs

[4] Taking charge: the electric vehicle infrastructure strategy. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1065576/taking-charge-the-electric-vehicle-infrastructure-strategy.pdf

[5] LA Involvement- National EV Insight & Support | Delivered by Cenex

- Make the most of funding opportunities
- Encourage the private sector to take the risk
- Monitor updates to EV infrastructure in building regulations and enforce these through the planning process
- Work with the Distribution Network Operator (DNO) to ensure there is adequate grid capacity
- Lead by example
- Continue the community engagement to raise awareness and meet users' needs
- Monitor EV uptake and chargepoint usage

CURRENT SITUATION

According to DfT data, as of Q3 2022 [6] there were 2,839 EVs in Wokingham Borough which equates to 2.43% of total registered vehicles.

Table 1 – EV Penetration in Total Licensed Vehicles (Q3 2022)

	EVs	Total licensed vehicles	EV penetration
Wokingham Borough	2,839	116,700	2.43%

As of 6 June 2023, ZapMap (this is a UK-wide map of EV chargepoints that helps EV drivers locate and navigate to their nearest chargepoint) showed there were 219 publicly available EV charging sockets across 130 charging devices at all speeds across the borough. This means that on average there is one public chargepoint for every 22 EVs. Of these charging sockets, 75 were rapid (41 charging devices).

Most people prefer to charge their electric vehicles at home where they park overnight, and home charging is expected to be central to the future charging ecosystem. However, 32% of our residents (22,783 households) do not have access to a private driveway or garage and therefore may struggle to install a home charger[7].

At the time of writing this Strategy, the Council had been awarded £173,500 through the On-Street Residential Chargepoint Scheme and was installing 38 further charging sockets in 18 residential locations that lack off-street parking.

[6] Vehicles statistics- GOV.UK (www.gov.uk)
[7] https://onstreetcharging.acceleratedinsightplatform.com/

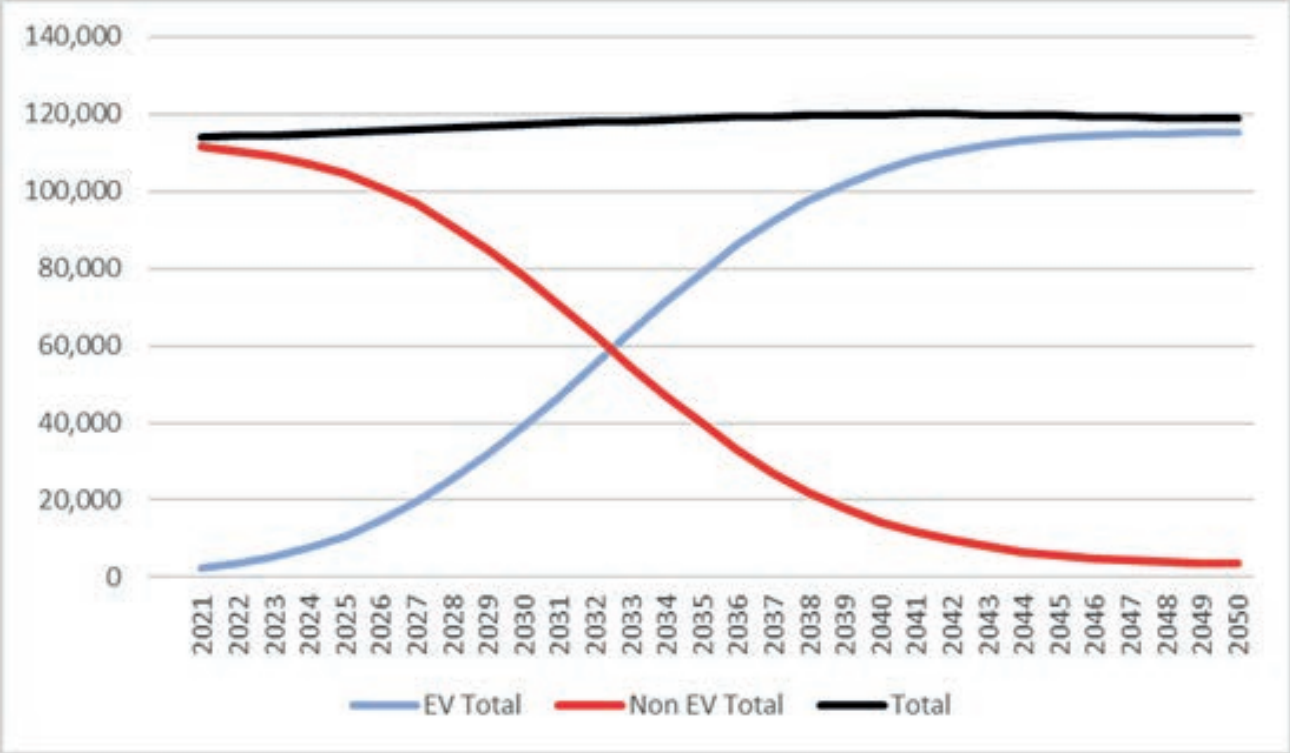
Forecast demand

EV GROWTH

Using ***EV: Ready***, a tool developed by our consultant, WSP, forecasts for future EV uptake were derived. Based on this, by 2030, 40,000 EVs are forecasted to be registered in our borough and this equates to over 30% of registered cars. In 2033, EVs in Wokingham are expected to account for the majority of the fleet for the first time. It will then continue to rise up to 2050, at which point it will plateaux at 98% of the total vehicles being electric.

The WSP's forecasts for EVs in Wokingham Borough are shown in Figure 2.

Figure 2 – Forecast EV uptake and decline of ICEVs



This increase, and subsequent decrease in ICEVs, could lead to approximately 12% decrease in CO_2 emissions in the borough, from nearly 152,000 tonnes in 2020 to around 133,000 tonnes by 2030.

EV CHARGING REQUIREMENTS

The forecast model considers 3 scenarios, low, mid and high, with each representing a different ratio of EVs to chargepoints.

High ratio – approximately 22 EVs per chargepoint, i.e., a more generous level of public charging provision, assuming each charger is utilised less intensively, with lower average charging rates.

Mid ratio – a middle ground between these two extremes, with approximately 39 EVs per chargepoint.

Low ratio – approximately 70 EVs per chargepoint, i.e., fewer public chargepoints, assuming chargers are optimally deployed, with higher average charge rates.

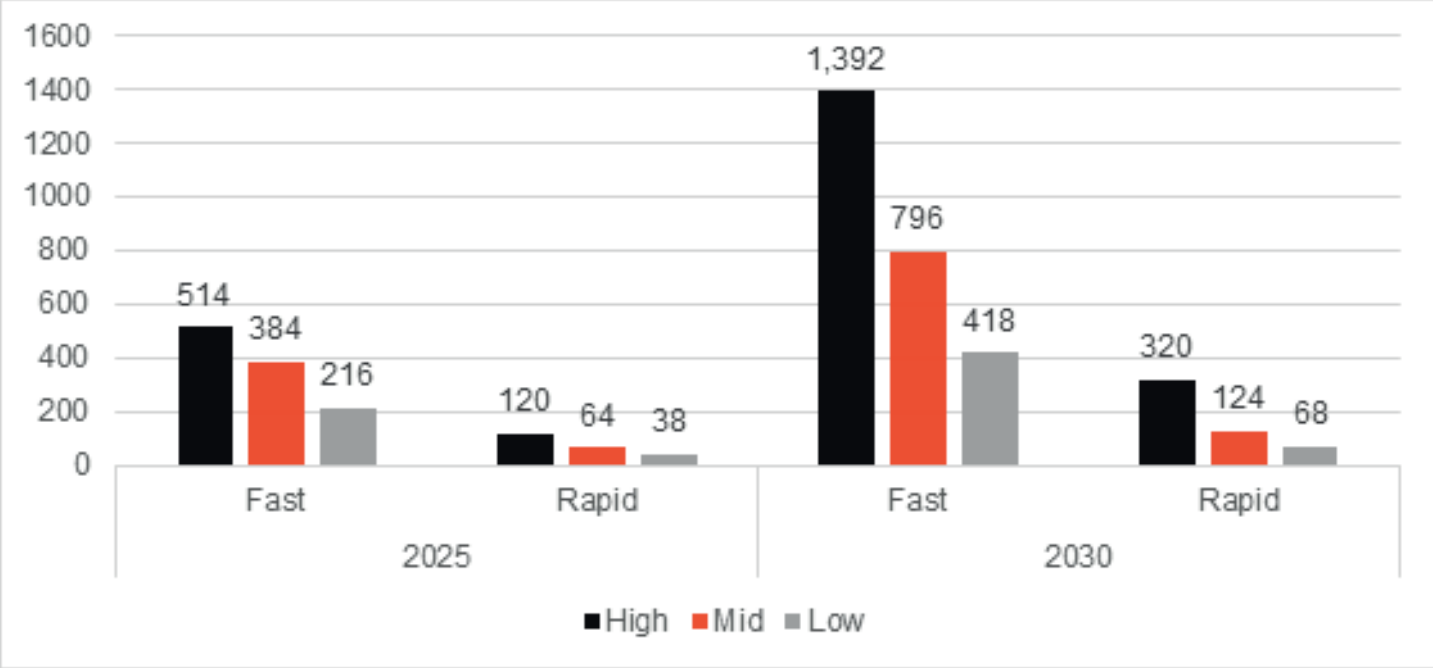
For the purpose of informing this Strategy, two categories of chargers were modelled: "fast" and "rapid". In both cases these are used to refer to a range of charger types. "Fast" refers to AC chargers with between 7kW (more commonly referred to as standard) and 22kW (more commonly referred to as fast) speeds. "Rapid" refers to DC chargers, with speeds greater than 50kW, although speeds of over 300kW are being installed, particularly at en-route charging hubs.

Figure 3 presents the additional number of charging sockets required up to 2025 and 2030.

Under the high scenario, by 2025, a significant increase in the number of public chargers required is forecasted – in the region of an additional 514 fast charging sockets and 120 rapid charging sockets.

Looking at 2030, the requirement for public chargepoints is forecasted to accelerate further, with an addition of 1,392 fast charging sockets and 320 rapid charging sockets in the high scenario.

Figure 3 – Forecast EV charging sockets requirements

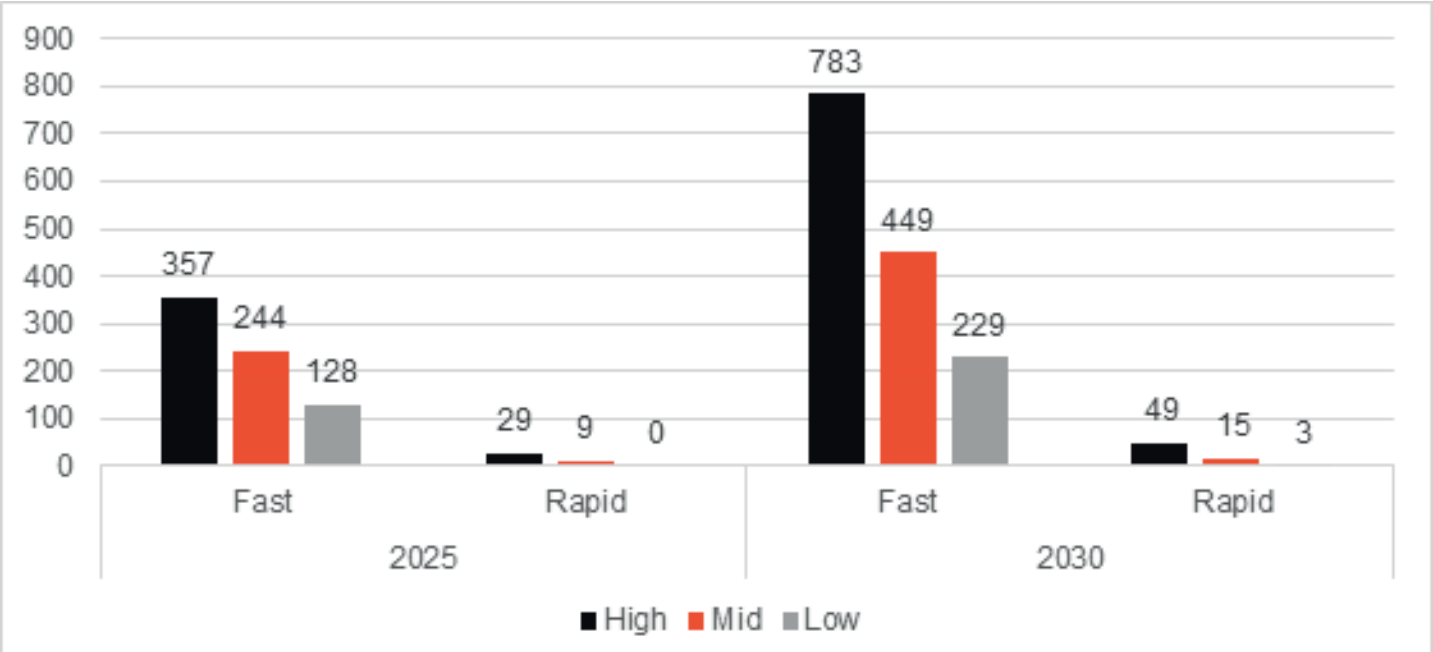


HOW MANY CHARGEPOINTS DOES THE PUBLIC SECTOR NEED TO DELIVER?

As highlighted previously most of the chargepoints will be installed by the private sector such as commercial businesses. However, to ensure the provision of an equitable network the public sector will have to intervene to 'plug the gaps' that are predicted to be left by the private sector.

Figure 4 shows the forecast of chargepoints that need to be deployed in the borough by the public sector.

Figure 4 – Forecast public sector deployed EV charging socket requirements



Under the high scenario, 357 additional fast charging sockets and 29 additional rapid charging sockets are required to be delivered by the public sector by 2025. By 2030, the demand of public sector intervention is higher with the requirement of 783 fast and 49 rapid additional charging sockets.

Actions

A list of actions and interventions have been identified to support achievement of the key objectives and realisation of the vision of the EV Charging Strategy.

Objective: Ensure charging provision for EVs keeps pace with demand

Actions and interventions:

The findings from the above analysis recommend using the high scenario as a target for the number of chargepoints across the borough by 2030, as this would provide the highest level of provision out of all scenarios analysed.

Therefore, by 2030 the public sector should facilitate the delivery of an additional **783 fast (between 7kW and 22kW) and 49 rapid (greater than 50kW) charging sockets**.

Considering that most of the EV charging happens at home where dwell times are longer and that 32% of households in our borough do not have access to off-street parking, the installation of the additional 783 fast charging sockets should be focused on residential areas where off-street parking is not available. This will enable residents who rely on on-street parking make the switch to an EV and realise the benefits of owning one. The priority areas for public chargepoints are streets that have a high reliance on on-street parking and where there is expected to be a high demand for EVs by 2030 - these are presented in Figure 5 and are within the following locations: **Wokingham, Woodley, Earley, Finchampstead and Shinfield**.

Once chargepoints have been installed at the above locations, the focus should move to **Winnersh and Twyford**. These areas are also likely to have a high EV uptake as well as having a low availability of off-street parking (as seen in Figure 6 and Figure 7 respectively).

An allowance should also be given for fast charging sockets that are requested by WBC residents. Residents who do not have access to a private garage or driveway can send an email request for a public chargepoint near their properties. These requests should be taken into consideration when planning for future chargepoints and should be assessed on a case-by-case basis.

Figure 5 – Areas of high priority for public chargepoints (areas with high demand for EV and reliance on on-street parking. The points represent postcodes.

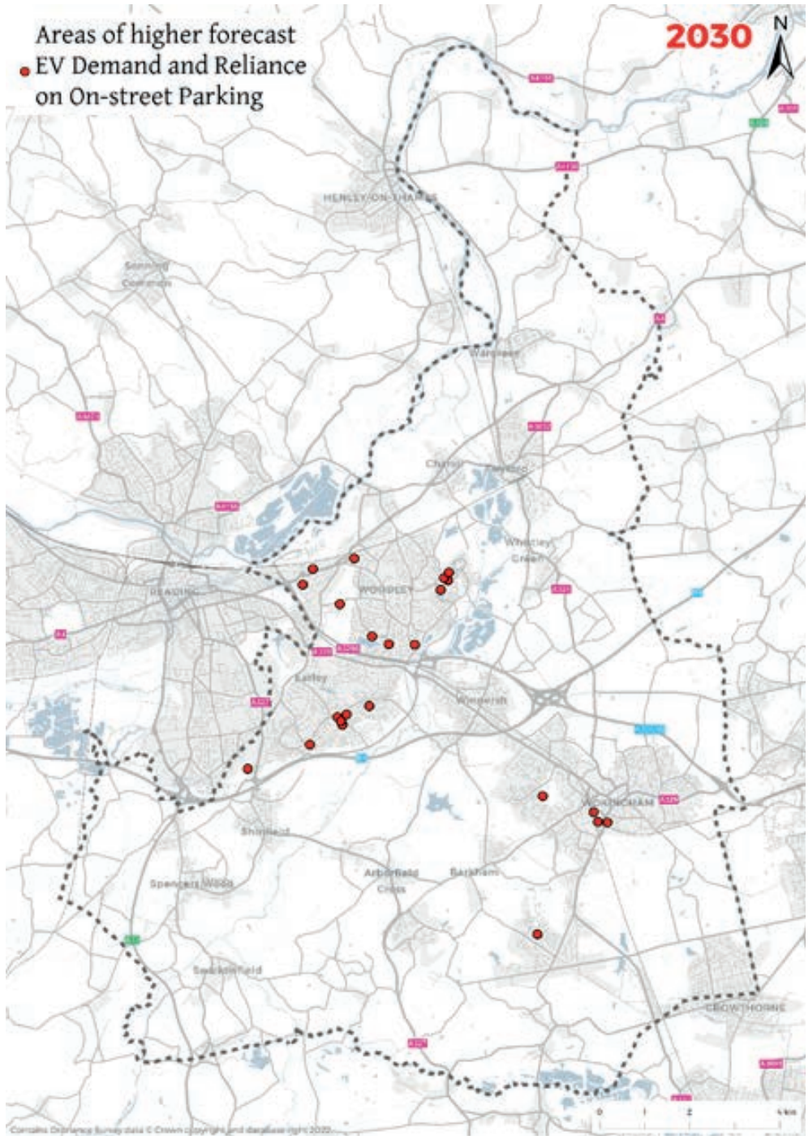


Figure 6 – Forecast EV uptake across Wokingham Borough (Number of EVs registered) 2030

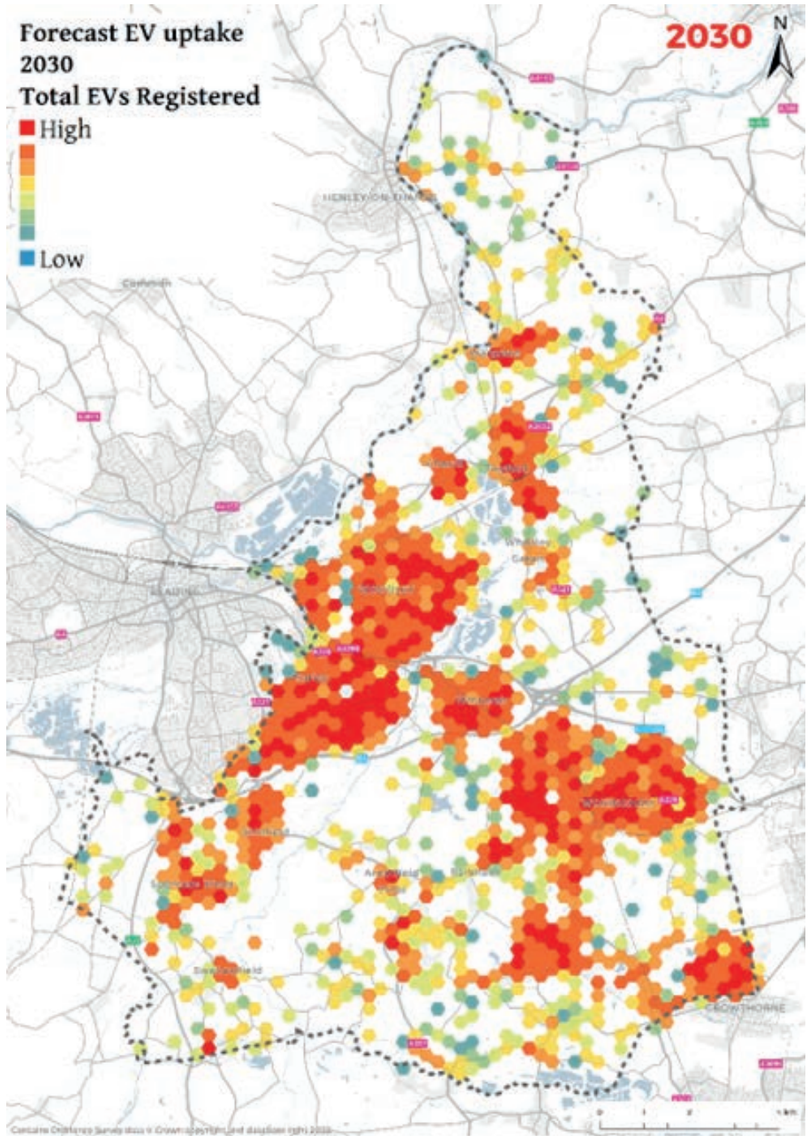
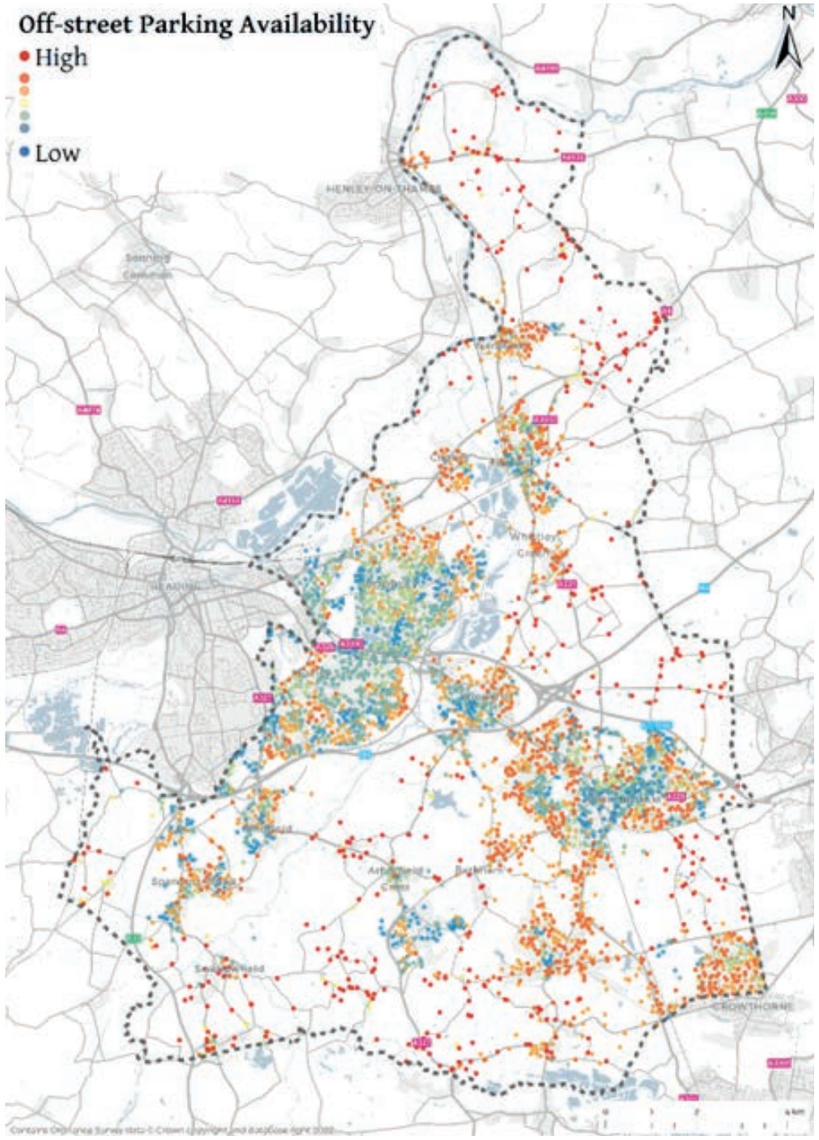


Figure 7– Residences with off-street parking availability in Wokingham Borough as of 2020



The installation of the additional 49 rapid charging sockets should be targeted at the following locations:

- **Council owned car parks**. Where feasible, all council owned car parks to have at least one fast or rapid chargepoint by 2030*.
- **Locations where dwell times are shorter or for people visiting or driving through the region to get a faster turnaround**. These will typically be in car parks near retail/leisure locations or on/near major roads for those travelling through the borough. This would include Wokingham and Twyford town centres, as well as near to the M4 and A329(M) key strategic corridors. Multiple sockets per site will provide greater guarantee of a chargepoint being available.

Objective: Ensure chargepoints are accessible to all

Actions and interventions:

The Council should ensure that all new deployed electric vehicle infrastructure is in compliance with legal requirements and best practice guidance regarding accessibility and inclusive design.

The Council should also work with local accessibility organisations and bodies to set their own suitable design standards for the installation of electric vehicle infrastructure.

Objective: Ensure the solution is future proofed

Actions and interventions:

When there are planned works that involve resurfacing roads and/or car parks in local highway authority land, and there is evidence of existing or forecasted demand for EV charging at these locations, passive infrastructure should also be considered (the network of cables and power supply necessary so that at a future date a socket can be added easily). This could be during initial construction, during a significant renovation or during other scheduled construction work. It could also be done when chargepoints are first being installed at a given site.

By removing the need to dig up and resurface roads every time additional charging infrastructure is installed, passive infrastructure contributes to maintaining the integrity of road and/or car park surfaces and significantly decreases future chargepoints installation costs. This reduces the need for surface repairs and extends the lifetime of the surface, both of which contributing to reducing road surface maintenance costs.

Objective: Provide a variety of charging options to accommodate the range of residents within the borough and their diverse needs.

Actions and interventions:

There are a number of different options for local residents and the likely solution is a mix of

* Where separately named car parks are in close proximity to one another, chargepoints may be co-located in one of the car parks for economies of scale.

technologies and chargepoints to accommodate not just standard cars but a variety of vehicles such as taxis and vans, which will be used for a range of journey purposes. WBC should monitor the development of new technologies to ensure they remain up to date on how people are travelling around the area.

In addition, the Council should continue engaging with other local authorities and monitor and review the new technological EV charging solutions that they have introduced or trialled to learn from their experiences. Based on the outputs of best practise case studies and considering any existing or upcoming government guidance on the use of different chargepoint technologies, the Council should develop a set of design standards / guidance for the installation of these technologies and chargepoints in our borough.

WBC in no circumstances will permit cables crossing a footway or road for the purpose of charging a vehicle. Trailing cables across public footways and verges is not permitted by the Council. This presents a significant trip hazard, is detrimental to inclusive mobility and contravenes the Highways Act 1980.

Objective: Make the most of funding opportunities

Actions and interventions:

Although the number of public chargepoints is key to assisting residents, the delivery of this is very much dependant on the availability of funding. While WBC will undoubtedly have a big role to play in facilitating the deployment of EV charging infrastructure, there is a range of different funding opportunities that WBC and residents can use to subsidise the cost of infrastructure. The Council should investigate which funding streams are relevant for the borough and assign ownership for the applications to guarantee that all options are considered.

Objective: Encourage the private sector to take the risk

Actions and interventions:

While WBC has a role in ensuring EV infrastructure is adequate, allowing the private sector to take the strain allows the Council to operate in a more hands off manner. Many of the private landowners in the region will already have deals with chargepoint operators which will allow for quick rollout. The Council should seek opportunities to bring providers and landowners together to create a network for the provision of private sector chargepoints.

The Council should also encourage organisations, businesses and other owners of commercial public and private land to deploy public EV charging infrastructure where it is appropriate.

WBC should focus where private organisations will not pick up the slack and in their own properties.

Objective: Monitor updates to EV infrastructure in building regulations and enforce these through the planning process

Actions and interventions:

In order to provide adequate EV charging infrastructure, WBC must ensure that all new developments align with future forecasts and current building regulations for EV charging.

For new buildings with associated car parking, as well as existing buildings undergoing major renovation, active and passive infrastructure should be provided in line with the requirements of the latest Building Regulations. At the time of writing this Strategy, the Building Regulations 2010, Infrastructure for the charging of electric vehicles – Approved Document S – 2021 Edition came into force in England. According to this, every new home, including those created from a change of use, with associated parking must have an EV chargepoint from June 2022.

Given that the landscape around the chargepoints' policy is changing rapidly, it is important that WBC stays on top of new regulations and developments that might change how and where chargepoints are installed updating accordingly their local planning guidance.

Objective: Work with the DNO to ensure there is adequate grid capacity

Actions and interventions:

WBC should continue engaging with the DNO to inform them on the key outcomes of this Strategy, including the total number of chargepoints that are required across the borough by 2030 and the priority locations where these need to be installed. The Council should work collaboratively with the local DNO to ensure that there is enough capacity for the future, especially where grid constraints exist.

Objective: Lead by example

Actions and interventions:

One way to influence others, is to lead by example. In line with our Climate Emergency Action Plan, the Council should decarbonise all WBC owned fleet as the vehicles come up for renewal. The Council currently operates a fleet of 16 vehicles ranging from minibuses, cars and a tractor in Dinton Pastures.

In readiness for the decarbonisation of WBC fleet, the Council should review the parking locations of these vehicles and identify opportunities for chargepoints installations.

In addition, the Council should revise the tender specifications to make EV fleets a desirable characteristic when assessing suppliers.

The Council should also incentivise the use of EVs among the WBC staff and encourage employees to use more environmentally friendly transport modes such as walking, wheeling, cycling and reducing private vehicle ownership and mode share.

Objective: Continue the community engagement to raise awareness and meet users' needs

Actions and interventions:

The Council should continue engaging with the public and the fleet operators to understand their EV charging requirements and what systems and infrastructure they need to encourage them to shift to EVs.

The Council should also continue exploring users' attitudes towards other forms of sustainable travel, including walking and cycling. This will help to see what are the barriers that people face preventing them from travelling in ways other than the private vehicle.

Objective: Monitor EV uptake and EVCP usage

Actions and interventions:

Monitoring and keeping track of progress currently takes place through the Climate Emergency Action Plan progress report. The fourth progress report was published in September 2023.

WBC should stay on top of the changes. As we move away from the pandemic and people start travelling more frequently, and in new patterns, pent up demand may lead to changes more rapid than predicted.

ACTION PLAN

The duration of the timescales is as follows:
Short term: 1-2 years, Medium term: 3-5 years, Long term: Over 6 years

Objective	Action	Priority	Term
Ensure charging provision for EVs keeps pace with demand	Accelerate chargepoint deployment, expanding the local network, to promote EV uptake to reach high-range scenario of an additional 1,712 EV charging sockets by 2030 (832 of which to be delivered by the public sector). Prioritise a mixture of areas with high forecast demand, areas reliant on on-street parking and anticipated gaps in private sector provision. This includes Wokingham, Woodley, Earley, Finchampstead, Shinfield, Winnersh and Twyford. Review council-owned sites for potential installation of fast and rapid chargepoints for public use. Focus on public car parks and council owned land. Where feasible, all council owned car parks to have at least one fast or rapid EVCP by 2030. When external funding sources are available, seek to deliver the identified no. of chargepoints as part of a public private commercial partnership model operated as a concession scheme. Fully funded models could also be explored where suitable; however, this will minimise the amount of control the Council has. Continue collaborating with neighbouring authorities coordinating the placement of charging infrastructure near authority borders. Consider bidding for chargepoint projects with neighbouring local authorities, securing pan Berkshire economies of scale and allowing chargepoint operators to prioritise larger programmes.	1- High	Short/ Medium
Ensure the solution is future proofed	Passive provision should be installed where there is forecast demand for charging, or where there are planned works scheduled that would mean resurfacing is required. Providing this passive provision means there is less initial cost than if a fully operational chargepoint was being installed. However, passive provision should not be provided where there is already a high demand for chargepoints and should only be installed in new developments as per the regulations.	2 – Medium	Short/ Medium
Ensure all new chargepoints are accessible for all	All chargepoints installed within the borough should be in compliance with legal requirements and best practice guidance regarding accessibility and inclusive design. WBC will work with local accessibility organisations to develop their own design standards for the deployment of EV infrastructure.	1 – High	Short/ Medium
Provide a variety of charging options to accommodate the range of residents within the borough and their diverse needs	A mixture of technologies and types of chargepoints should be delivered across the borough to accommodate not just standard cars but a variety of vehicles such as taxis and vans, which will be used for a range of journey purposes. WBC will monitor the development of new technologies to ensure they remain up to date on how people are travelling around the area. Continue engaging with other local authorities and monitor and review the new technological EV charging solutions that they have introduced or trialled to learn from their experiences. Establish which technologies would be suitable in the borough and develop WBC's set of design standards / guidance for the installation of these technologies and chargepoints.	1 – High	Short/ Medium
Make the most of funding opportunities	Monitor bidding opportunities and proactively seek public funding options	2- Medium	Short/ Medium
Encourage the private sector to take the risk	To help WBC roll out their programme of chargepoints, the private sector should be encouraged to provide investment. WBC will continue engaging with various chargepoint operators so that they can work together to deliver the number of chargepoints outlined within this Strategy. As mentioned previously, due to the financial challenges that the Council is facing and to transfer some cost and risk liabilities to the private sector, as well as harness suppliers' expertise in chargepoint deployment, a concession model is the preferred commercial arrangement for WBC when external funding sources are available. In any other cases, fully funded models could also be explored where suitable; however, this will minimise the amount of control the Council has.	1 – High	Short/ Medium
Monitor updates to EV infrastructure in building regulations and enforce these through the planning process	Stay on top of new regulations that might change how and where chargepoints are installed updating accordingly WBC's local planning guidance. Ensure that the requirements of the regulations are applied, as appropriate, to all developments and masterplans providing an adequate chargepoint provision.	1- High	Short

Work with the DNO to ensure there is adequate grid capacity	WBC will continue engaging with the DNO so they are aware of their charging infrastructure plans. They can help identify suitable sites where DNO connection costs will be low and can ensure there is enough capacity for future charging needs.	1 – High	Short/ Medium
Lead by example	Review opportunities for the WBC fleet, in particular small vehicles/vans to be decarbonised by switching to EVs or hybrid. Develop a phased approach so that that our fleet is 100% zero carbon by 2030. At the time of writing this Strategy, WBC were preparing a separate Car Club Strategy. This will explore the possibility of providing an EV car club scheme within the borough and if this could be used in replacement of the Council's own fleet of vehicles. Carry out a full review of the existing parking locations for WBC fleet vehicles readiness of decarbonising the council owned fleet. Identify opportunities for installation of chargepoints and staff training. Revise tender specifications to make EV fleets a desirable characteristic when assessing suppliers. Encourage WBC staff to switch to EVs by implementing a salary sacrifice EV scheme for Council staff members to use. Install chargers outside the Council office buildings for use by staff and for residents/tourists nearby. Only offer electric or plug-in hybrid pool cars for staff use.	1 – Medium	Short/ Medium
Continue the community engagement to raise awareness and meet users' needs	WBC should continue engaging with the public to understand their charging requirements and barriers that are preventing them from buying an EV. The areas with lower uptake would benefit from greater communications and more targeted work around on-street chargepoints. At the same time, they can explore their attitudes towards other forms of sustainable travel, including public transport, walking and cycling. Host a series of promotional events or a pop-up EV experience centre. Help encourage individuals and businesses to switch to EVs and install their own private EVCP by advertising grant opportunities for individuals/local community groups, providing basic support for applications and general updates on actions the Council is taking.	2 – Medium	Short/ Medium
Monitor EV uptake and chargepoint usage	The Council will monitor the progress of chargepoint delivery through their CEAP progress reports, which are published annually. This will include how many new chargepoints they have installed and any data they have on usage, which would be provided by the chargepoint operator.	1 – Hight	Short/ Medium

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Wokingham Borough Council
Shute End
Wokingham
RG40 1GY

Tel: (0118) 974 6000

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