West Northamptonshire Council

West Northamptonshire Electric Vehicles Infrastructure Strategy (WNEVIS) 2024-2030

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2. Introduction

The UK Government has committed to achieving net zero emissions of carbon dioxide equivalent gases (CO_2e, 'carbon') by 2050. With domestic transport responsible for around a quarter of these emissions[1], it is imperative for the carbon emitted by vehicles on our roads to be significantly reduced.

At the core of delivering this national objective is the government's directive for local authorities to develop tailored plans to meet the transition needs. For WNC, this plan is more than just a strategy for meeting electric vehicle (EV) charging demands; it puts into practical effect an important part of the Council's own goal to achieve a net zero West Northamptonshire by 2045, as part of actively shaping a cleaner, greener future.

Our WNEVIS aligns with the UK Government's *Taking Charge: The Electric Vehicle Infrastructure Strategy*[2] and with work by our sub-national transport body, England's Economic Heartland (EEH) on EV charging. *Taking Charge* serves as a national guide for both local authorities and the private sector, aiming to accelerate the deployment of EV charging infrastructure across the country. Furthermore, our approach is designed to maximise the benefits of the Local Electric Vehicle Infrastructure (LEVI) Fund. This is a £400 million capital grant scheme[3], administered by the Office for Zero Emission Vehicles (OZEV). The LEVI Fund is designed to empower local authorities in attracting private sector investments for the enhancement of their local charging networks.

Aligned with market-driven solutions and broader considerations such as planning permissions and on-street parking, WNC's Electric Vehicle Infrastructure Strategy embodies a comprehensive vision. It recognises the transformative potential of EVs in the fight against climate change, offering a long-term roadmap to ensure the transition to greener transportation is not only workable but also convenient for every resident.

3. Background

3.1. Transport and Climate Change

As of 2021, the transport sector remained the largest emitter in the UK, contributing 25% of the total greenhouse gas emissions, amounting to 108 MtCO2e. (Million metric tons of carbon dioxide equivalent) A sizeable portion, 52%, was attributed to cars, emphasising the need for transformative measures in this sector. Governments, both past and present, have recognised the potential of electric vehicles (EVs) in achieving broader transport carbon emissions reduction, as emissions from EVs can be up to 43% lower than those from diesel vehicles. Therefore, the transition to EVs is a crucial step towards reducing our carbon footprint and mitigating the impacts of climate change.

The importance of EVs in combating air pollution was emphasised in the Committee on Climate Change's (CCC) recommendation, aligning with the sentiment expressed by the UK Climate Assembly in September 2020. The assembly favoured policies

promoting EV adoption over measures to reduce car use, acknowledging the clear benefits EVs bring to local air quality. The Committee on Climate Change (CCC) highlighted in its updated advice that the market for electric cars and vans should scale up to 100% of recent sales by 2035, to meet the net-zero 2050 goal.

3.2. EV Take Up

As of the end of December 2023, there were around 975,000 fully electric cars on UK roads[4]. Nearly 315,000 battery-electric cars were registered in 2023, a growth of 18% on the number registered in 2022.The number of new registrations in the UK was up 5% in 2021, with a 77% increase in plug-in vehicles[5]. These statistics highlight the importance of developing a comprehensive and convenient network of EV charging points, particularly for those without access to off-street parking.

3.3. EV Chargers

As of January 2024, there were 53,677 public electric vehicle charging devices installed in the UK[5]. According to zap-map, 86% of EV drivers in the UK had access to a private driveway or garage for charging their electric vehicle as of November 2021, leaving 14% who do not[6]. Moreover, a considerable number of households, approximately 24%, do not have access to off-street parking[7] and therefore would depend on public charging facilities if using EVs.

The UK government has set the goal of increasing the number of public electric car chargers more than 10 times to 300,000 by the end of 2030[8]. The government's strategy also focuses on improving the consumer experience at all charge points, with significant support focused on those without access to off-street parking, and on fast charging for longer journeys.

3.4. EV Charger Types

The transition to electric mobility poses challenges in establishing a comprehensive charging infrastructure to support the growing EV fleet. There is a need for convenient access to charging facilities across residential and urban areas to alleviate range anxiety and support EV adoption. Additionally offering diverse charger types helps cater to various charging needs, whilst maximising efficiency in provision. Whether for overnight charging, destination top-ups, or rapid charging on highways, the Council is committed to securing a seamless charging experience for EV owners, thus fostering sustainable transportation. Table 1 correlates ChargePoint categories with anticipated charging durations as per Cenex[9].

Table 1: EV ChargePoint Categories and Expected Charging Times

Charge point Power	Time to Charge	Users per day	Coverage Areas	Power (kW)	% Charging
Standard	5.5 to 1 hours	2 to 3	Residential areas, workplaces.	3 to 7 kW	0 to 100%

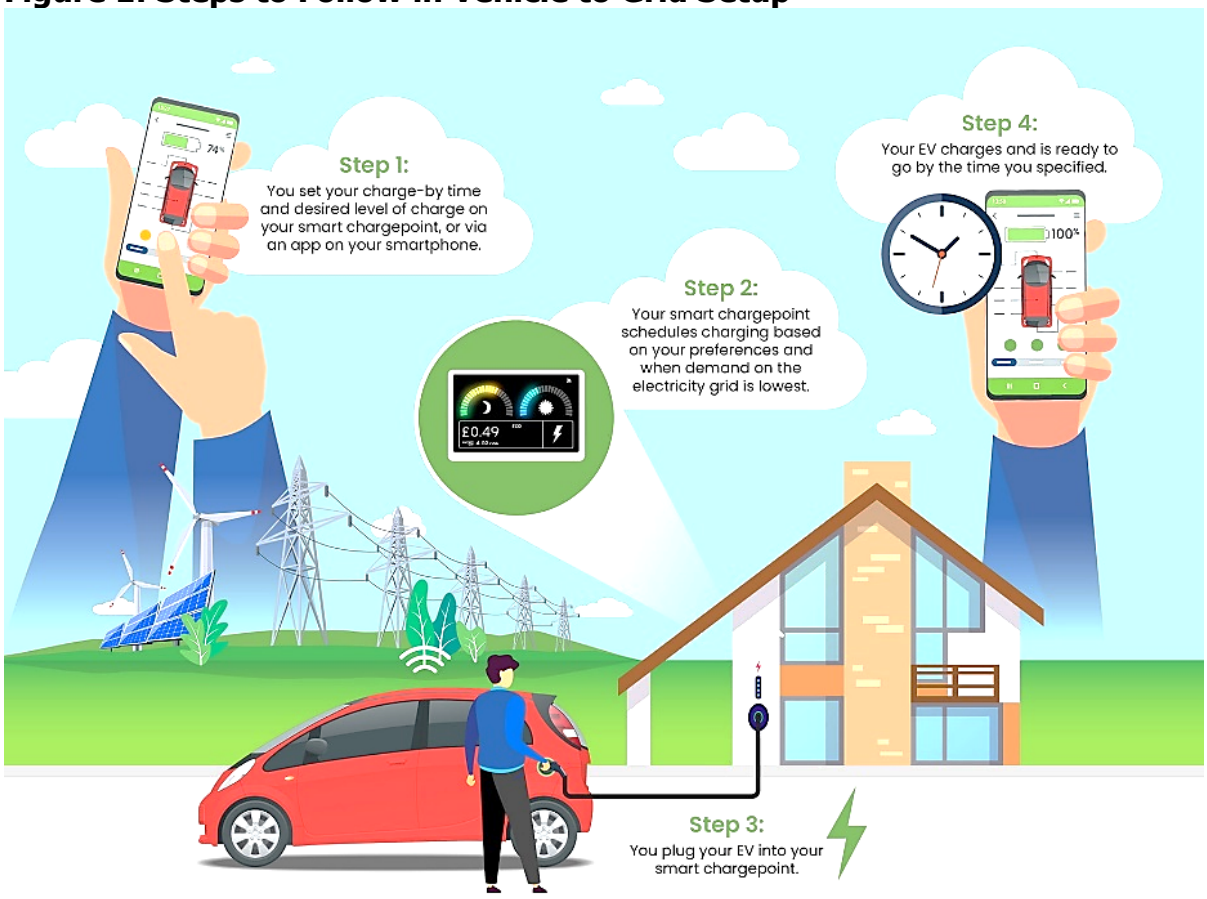
Charge point Power	Time to Charge	Users per day	Coverage Areas	Power (kW)	% Charging
Fast	1 to 5 hours	3 to 4	On-street locations, businesses.	7 to 22 kW	0 to 80%
Rapid	15 minutes to 1 hour	4 to 5	High-traffic areas, long-distance travel.	50 kW to 150 kW	0 to 80%
Ultra-rapid	10 minutes to 1 hour	5 to 6	Major highways, long-distance travel.	150 to 350 kW	0 to 80%

3.5. Smart Charging

The UK government views the transition to EVs as an opportunity and a challenge for upgrading the energy ecosystem as electric vehicles can be viewed as decentralised battery storage. Its collaborative efforts with regulatory bodies, highlighted in the recent June 2022 legislation[10] on EV smart charge points, is based on a strategy to integrate EV charging points into the wider energy framework. To optimise the benefits of smart charging, EV owners are encouraged to utilise energy tariffs tailored for EV usage, offering lower rates during off-peak hours. However, due to the recent energy crisis in the UK, a January 2022 update recommended against switching to EV tariffs. Many of the more affordable EV tariffs have been increased or withdrawn for new customers. Markets are now recovering, and we are seeing the reintroduction of EV tariffs to domestic customers.

Cenex's analysis[11] on smart charging reveals figures that highlight its potential benefits. By using smart chargers, EV owners can unlock significant cost savings. For instance, through tariff optimisation, smart charging can save approximately 4p per kWh of the annual energy demand of an EV, resulting in significant annual savings. Moreover, for EV owners utilising vehicle-to-grid (V2G) chargers, the revenue potential is even more encouraging. V2G chargers can generate £4 from tariff optimisation and an added £6 from the Firm Frequency Response (FFR) grid service per plug-in time percentage that means by using smart charging technology a typical user can potentially save up to £200 annually for the average driver and up to £1,000 for high-mileage drivers. Additionally, smart charging helps alleviate pressure on the grid by distributing energy demand more efficiently, thus contributing to a more sustainable energy ecosystem. Cenex's insights highlights the importance of smart charging as a key enabler for widespread EV adoption and a cornerstone of future energy management strategies. Figure 1 illustrates the steps to follow during V2G setup as per Energy Saving Trust’s guidelines[12].

Figure 1: Steps to Follow in Vehicle to Grid Setup



Planning for smart charging can push towards adopting a strategy that support both a smart energy ecosystem and EV charging. This includes investigating how local authorities can mandate or incentivise developers to install charge points. Incorporating smart charging into EV strategy could help manage electricity demand, reduce costs for EV drivers, and contribute to a more sustainable future.

3.6. Charging Hubs

Charging hubs are an important part of EV infrastructure, offering quick and efficient charging solutions to address the evolving needs of EV users. With charging powers currently ranging from 50 kW to just under 150 kW, these hubs have the capability to charge vehicles to 80% capacity in under an hour, significantly reducing charging times compared to standard options. The main focus is at commercial depots, short-stay destinations, and along major travel routes. Figure 2 shows an example of a charging hub site. However, rapid charging technology also has a place in residential settings, where residents need a quicker charge. Residential rapid charging hubs are best suited for locations where vehicles will be parked for short durations, which charging being the primary or an important reason for stopping.

Rapid charging technology has matured considerably, with multiple manufacturers offering a variety of charging speeds to meet diverse needs.

Significant civil and electrical works are necessary for installation, including groundworks to install the infrastructure and a large electrical supply capacity exceeding 50 kVA, dedicated parking bays to ensure good use can be made of the investment, and space to accommodate the size of the rapid charge points. Due to the power requirements, grid connections can require extensive work and may limit where hubs can be located.

Figure 2: Example of a Charging Hub

it is also possible to have 'Electric Super Hubs'. These offer high-power charging capabilities along major travel routes and at popular destinations. These hubs will not only offer high-power charging infrastructure but also integrate retail amenities, creating vibrant electric retail hubs for EV drivers and shoppers alike.

3.7. Shared Transport and Mobility Hubs

Encouraging shared transport not only contributes to reduced traffic congestion and environmental benefits but also serves as a strategic means to enhance the use of charging infrastructure. As an example, car clubs provide convenient access to vehicles without the need for individual car ownership.

Shared transport models, such as carpooling or ride-sharing services or car clubs, can complement the use of EV charging stations. By fostering collaboration among multiple users, these shared mobility solutions make better use of charging facilities, promoting efficiency, and reducing idle times for charging stations. Furthermore, the integration of shared transport into the overall strategy complements the goals of creating a sustainable and interconnected transportation ecosystem. Initiatives that incentivise shared electric mobility not only maximise the efficiency of charging

infrastructure but also encourage a collective shift towards sustainable transportation practices. This approach aligns with broader sustainability goals and improves the overall impact of EV adoption on both urban and rural landscapes.

In this context, the emerging concept of 'mobility hubs' may be helpful. Mobility hubs are intended to serve as focal points where various modes of transportation converge, promoting sustainable travel while enhancing the overall urban experience. By providing convenient access to public transport options like railway stations and bus stops, mobility hubs help bridge gaps in the existing network, offering seamless connectivity for travellers. Hubs can include:

- Bus and/or rail access.
- Electric car club vehicles.
- EV charge points.
- Car parking.
- Micro mobility services such as bike and scooter hire.
- Bike repair stations and secure parking facilities.
- Amenities like timetables, maps, and noticeboards.
- Broader services like parcel lockers and coffee carts.

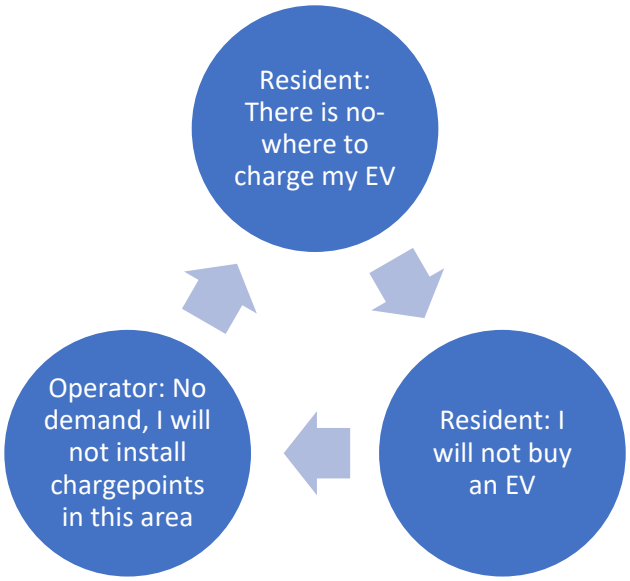
The intention is for hubs to be inviting public spaces, and waiting areas with greenery, comfortable seating, and shelter. This should not only enhance the user experience but also foster a sense of community and well-being. They are intended to play a crucial role in advancing decarbonisation efforts by encouraging modal shift towards more sustainable forms of transportation.

3.8. On Street Charging

3.8.1. Context

Historically, public charging infrastructure has mainly focused on high-powered (rapid) charging, which can be significantly more expensive than recharging at home due to the cost of infrastructure. This expense, coupled with the need for expensive technology and civil works for rapid charging, underscores the importance of on-street residential charging for those most affected by price discrepancies. As the EV charging industry evolves, a wider range of public charging technologies have emerged to cater to specific needs. These technologies include long-stay charging for residential areas, workplace locations, and fleet depots, as well as short-stay charging for retail parks and shopping centres. Despite the potential benefits, the commercial attractiveness of on-street charging in urban areas without off-street parking, often inhabited by less affluent demographics can be limited. This limitation is primarily due to low EV adoption in these areas, which in turn reduces the willingness of operators to install charge points. Additionally, DNO costs present a significant barrier to operators, further hindering the deployment of on-street charging infrastructure. This is illustrated in Figure 3 below.

Figure 3: Cycle of EV Non-Adoption in Areas Without Off-Street Parking



The cycle of non-adoption demonstrates a mindset that may exist within the general public which discourages EV adoption. A lack of EV chargers available (or perceived lack of), discourages the individual to switch to an electric vehicle as their primary mode of transport. The Chargepoint operators use statistics on new BEV purchases as a metric to inform site selection for new charging sites; Therefore, where data indicates a slow uptake in new BEVs, a gap in charging provision may exist and hence the perpetual cycle repeats. This situation requires public sector intervention to break the cycle and ensure charging options are available, to facilitate the electric transition in these areas. To address this need, organisations like Cenex have developed models like EVEREST[13] to calculate the required on-street charging infrastructure to support mass-market EV adoption. These models utilise publicly available datasets, driving behaviour data, demographic information, and EV uptake predictions to optimise deployment strategies.

> ''On-street, residential EV charging infrastructure is crucial for encouraging residents to go electric.
>
> Giving our residents the confidence to choose clean green transport is a major step in our vision to be carbon neutral by 2030. Achieving that confidence is about providing convenience and reliability. And with climate goals in place, and growing EV ownership, it must be now.''

3.8.2. Lamppost Charging

Chargers on lampposts can be a cost-effective approach as it enables the use of existing infrastructure for a quick rollout of this technology. Such chargers are relatively low power (around 3.5 kW), slow charging EV chargers. However, this

approach should be suitable for residential streets, where most residents charge their electric vehicles overnight typically from around 6pm to 8am. Figure 4 illustrates a lamppost charger for on-street residential charging.

Figure 4: Example of On-Street Lamppost Charger

3.8.3. Powers and Permits

Councils can install on-street chargers itself in its capacity as local highway authority. Where an independent third party wishes to, or the Council wished to on a highway it was not highway authority for (a trunk road controlled by National Highways), a license under Section 50 of the New Roads and Street Works Act 1991 (NRSWA) and consent under Section 115E of the Highways Act 1980 (to enable the operator to seek payment) is required. Consent under Section 115E can only be given if the owner of the property bordering the highway on that side (the 'frontager') gives permission.

3.9. Equality and Accessibility

Activities conducted by local authorities must adhere to the Public Sector Equality Duty (PSED)[14] a legal obligation imposed by the Equality Act 2010. This duty comprises two components: the general equality duty and specific duties related to protected characteristics. Plans should clearly articulate how proposed initiatives aim to achieve equitable outcomes and how engagement efforts will facilitate understanding of these benefits among stakeholders. By incorporating the principles of the PSED into their work up front, local authorities can foster a more inclusive and equitable decision-making process, ultimately benefiting all members of the community.

Provision of EV charging, and this strategy, is subject both to the PSED and the general anti-discrimination duties (which apply to all service providers) set out in the Equalities Act 2010.

Compliance with these duties requires that sufficient suitable EV charging points are made available, compliant with relevant regulations and standards to facilitate ease of use for those with mobility challenges. Publicly Available Specification (PAS) 1899[15] provides helpful guidelines for designing accessible EV charging. It covers accessibility for individuals with diverse needs by offering guidance on various aspects such as the physical environment, placement, information provision, and design. Figure 5 shows an example for the disabled parking bays reserved for EV charging.

Figure 5: Example EV Parking Bays for People with Disabilities

3.10. National Planning Policy

The National Planning Policy Framework (NPPF) emphasises the importance of reductions in greenhouse gas emissions, climate impact mitigation, and support for renewable and low-carbon energy. Specifically paragraphs 107 and 112(e) of the NPPF acknowledge the need for adequate EV charging spaces and safe, accessible, and convenient locations for charging within new developments.

3.11. EV Chargers and Building Regulations

The UK Government is proposing changes to Building Regulations to set up minimum requirements for Electric Vehicle (EV) charging infrastructure in both new and existing residential and non-residential buildings. For residential buildings, the

proposal mandates cable routes for EV chargers in every parking space for new buildings or major renovations with over 10 parking spaces. In non-residential buildings, the Government suggests one charger and cable routes for every one in five spaces for new buildings or major renovations with over 10 parking spaces. Existing non-residential buildings with over 20 parking spaces should have at least one charger by 2025.

3.12. Government Funding Schemes

Government funding schemes play a crucial role in driving the expansion of electric vehicle (EV) infrastructure, addressing key barriers to adoption, and fostering the transition towards EVs. From supporting home charging solutions to enhancing workplace and public charging networks, these schemes provide financial support to individuals, businesses, and local authorities. By engaging in these initiatives, the Council, as part of this strategy, can secure funding for different types of charges that can be used for different purposes and accelerate the transition to EVs. Table 2 outlines various funding initiatives aimed at incentivising the deployment of EV charging infrastructure across different contexts[16].

Table 2: Funding Schemes

Funding Scheme	Description	Eligibility Column
Electric Vehicle Home-charging Scheme (EVHS)	Provides a 75% grant, focusing on supporting home charging near terraced flats and rented accommodations to cover the cost of one home charge point and installation, capped at £350 (including VAT (Value Added Tax).	For those who are renters or own a flat. The property must have designated, private off-street parking.
Workplace Charging Scheme (WCS)	A voucher-based scheme is available to offer eligible applicants assistance with the upfront expenses of purchasing and installing EV charge points. The contribution is capped at 75% of the purchase and installation costs, with a maximum of £350 for each socket and up to 40 sockets across all sites for each applicant.	You must own the property or have consent from the landlord for Chargepoints to be installed at the site(s) listed in the application. Your site will need to have dedicated off-road parking that is clearly associated with the premises. If you do not own it, you will need permission from the landowner.
On-street Residential	Grants provided to local authorities to procure and install	Local Authorities

Funding Scheme	Description	Eligibility Column
Charge point Scheme (ORCS)	on-street EV charge points tailored to residents' needs that covers capital costs for acquiring and installing the charge points. The ORCS scheme, led by the Energy Saving Trust and backed by the Office for Zero Emission Vehicles (OZEV), offers £15 million in funding for local authorities to install residential on-street charge points. It aims to enhance EV charging accessibility for residents without private parking. Grants cover up to 50% of project capital costs, with a maximum of £200,000 per project and £7,500 per charge point[17].	
Local EV Infrastructure Fund (LEVI Fund)	The LEVI fund aids local authorities in establishing charging infrastructure for residents without off-street parking. West Northampton Council (WNC) has already secured over £400,000 from the LEVI Capability Fund and plans to apply for £2.8 million in LEVI capital funding to implement the WNEVIS strategy for achieving net zero goals[18]. The focus is on slow, fast, and potential rapid chargers in town center car parks, attracting commercial investment through revenue-sharing agreements to bolster infrastructure development. All expenses related to installing EV ChargePoint's are eligible for funding under the LEVI Fund, covering Charge point hardware, electrical connections, civil engineering, and other installation costs. While rapid charging is eligible for funding within projects, the focus is primarily on supporting lower-powered local	Local Authorities

Funding Scheme	Description	Eligibility Column
	charge points in alignment with the LEVI Fund's objectives[19].	
Rapid Charging Fund (RCF)	A £950 million fund dedicated to enhancing electrical capacity at motorway and major A-road service areas for EV infrastructure.	Motorway service area operators

4. Local Context

4.1. West Northamptonshire Council and the Area it Covers

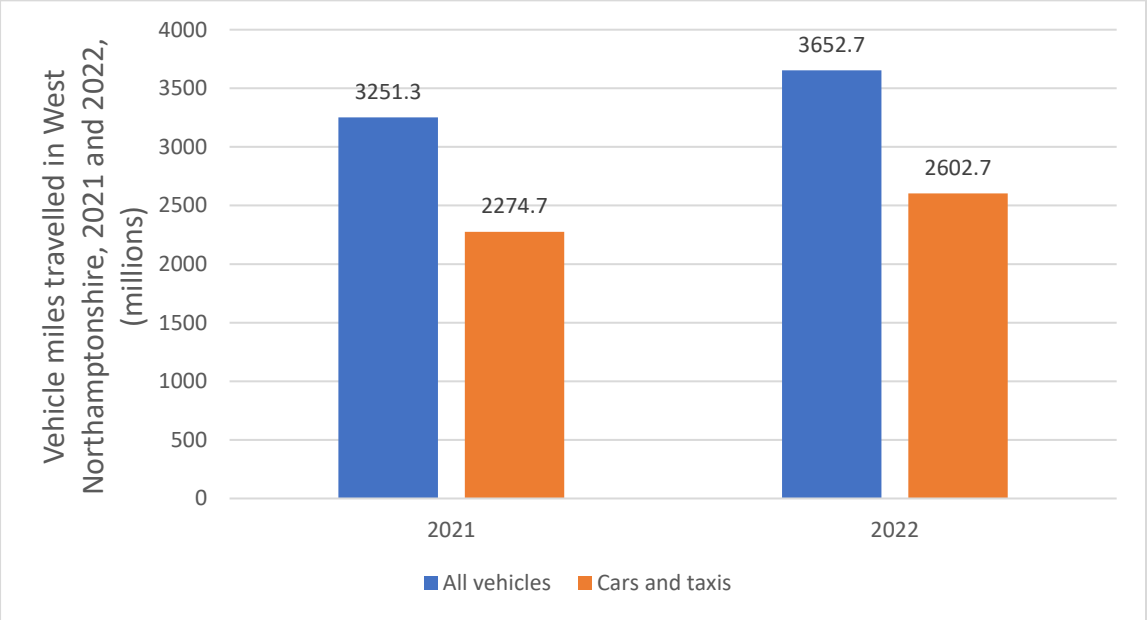
West Northamptonshire Council is a unitary authority that started operating in April 2021. West Northamptonshire is a growing area, with a population of 425,700[20] and an area of about 914 square kilometres[21]. It is expected that the population will grow by 7% by 2030, and the number of households is set to grow by 12% by 2030. The Council is actively engaged in several regeneration projects aimed at revitalising key areas within the area. West Northamptonshire is part of the Oxford-Cambridge Arc, a strategic corridor of economic growth and innovation that covers five ceremonial counties.

West Northamptonshire has a diverse and dynamic economy, with strengths in sectors such as advanced manufacturing, logistics, creative industries, and professional services. It is also home to several major employers, such as Barclaycard, Carlsberg, Coca-Cola, Mercedes-Benz, and Travis Perkins. With an extensive transport network, including strategic routes through highways such as M1, M40, A5, A14, A43, A45, and railways like the West Coast Main Line and the Midland Main Line, the region ensures efficient connectivity. Additionally, its proximity to major airports like Birmingham, East Midlands, and Luton further enhances its accessibility.

4.2. Local Transport and Carbon Emissions

According to the Department for Transport (DFT), West Northamptonshire roads witnessed a cumulative travel distance of 3.65 billion vehicle miles in the year 2022[22]. Figure 6 illustrates the vehicle miles travelled within the West Northamptonshire area over the period spanning from 2021 to 2022. This shows the continuing recovery from the Covid-19 pandemic.

Figure 6: Vehicle Miles Travelled in West Northamptonshire, 2021 and 2022 (Millions)



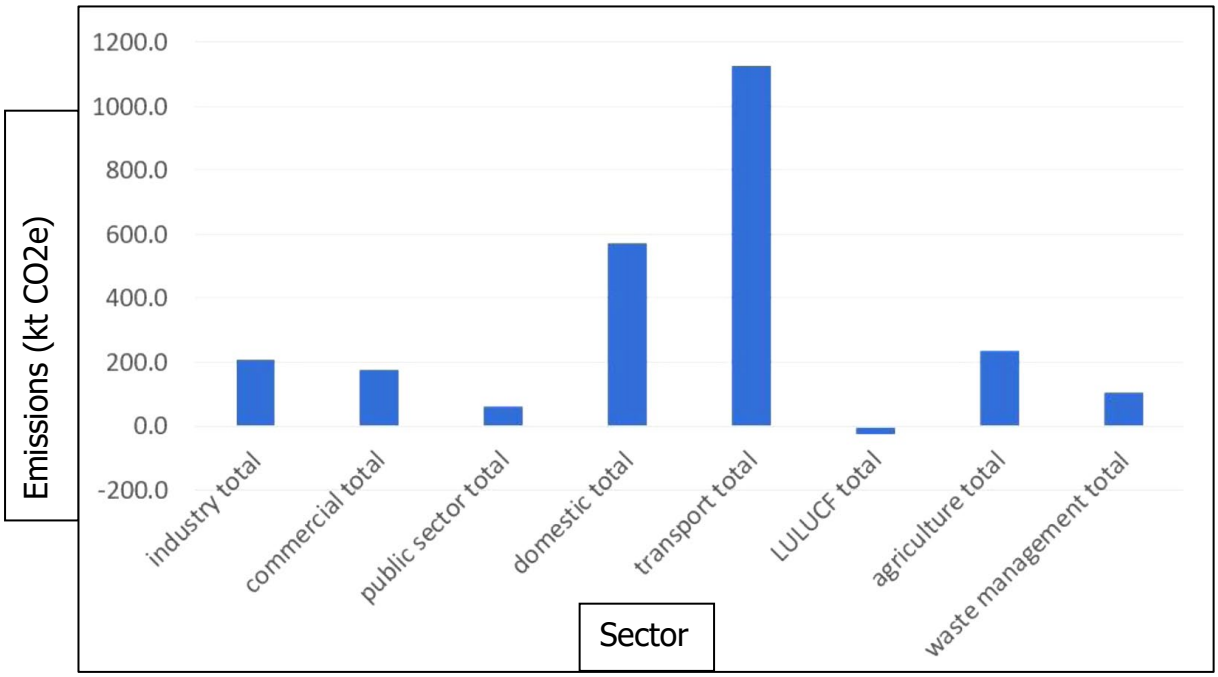
Source: UK Government, Road Traffic Statistics.

According to the Office for National Statistics (ONS), about 80% of households in West Northamptonshire own at least one car and about 70% of commuters travel by car[23]. This indicates a large potential market for EVs and a high demand for charging infrastructure. However, it also poses challenges for reducing congestion, emissions, and parking pressures, as well as encouraging modal shift to more sustainable and active modes of transport.

In West Northamptonshire, transport emissions stand out as a significant contributor to carbon emissions, comprising 45% of total emissions in 2020[24]. Moreover, although this has been improving, some areas in West Northamptonshire, such as Northampton town centre, still suffer from poor air quality and exceed the legal limits for nitrogen dioxide (NO_2) posing a threat to public health and the environment.

Emissions are dominated by road transport, mainly driven by travel on 'A' roads and motorways. As illustrated below, transport stands out as the highest contributor to emissions by a large amount. In 2020, emissions from transport reached a total of 1124.5 kt CO2e (Thousand metric tons of carbon dioxide equivalent). Figures 7 and 8 displays the distribution of these emissions across different sectors and mode of transport.

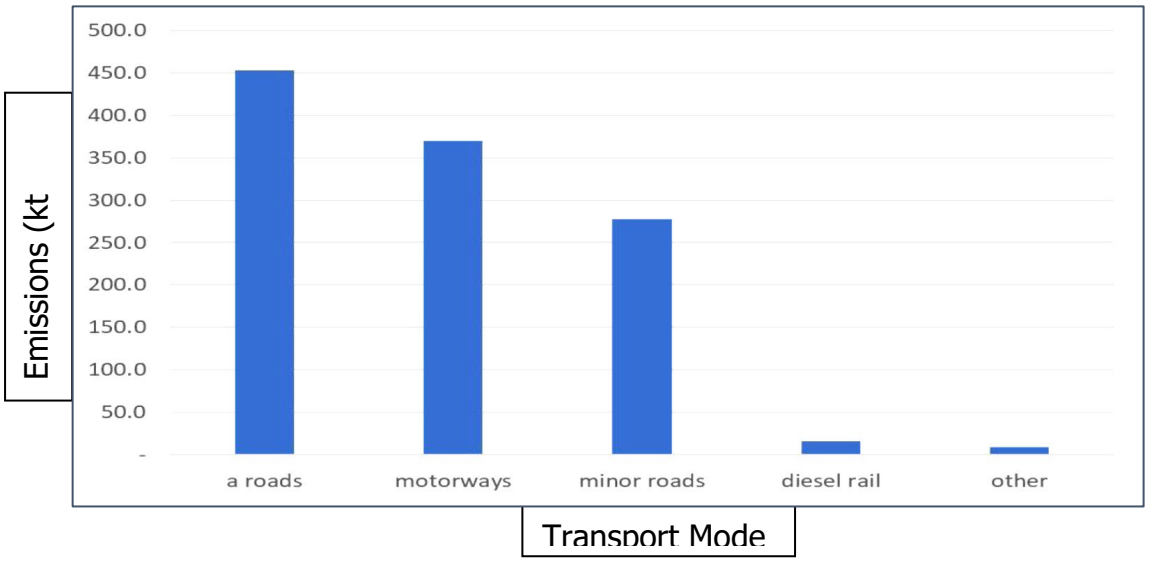
Figure 7: Emissions in kt CO2e (Thousand metric tons of carbon dioxide equivalent) from the Transport Sector in 2020



Source: District Wide Emissions Report, West Northamptonshire Council.

The LULUCF sector consists of emissions and removals from forest land, cropland, grassland, settlements, and harvested wood products. It is the only sector that includes emissions removals.

Figure 8: Emissions in kt CO2e (Thousand metric tons of carbon dioxide equivalent) by the Transport Mode in 2020



Source: District Wide Emissions Report, West Northamptonshire Council.

West Northamptonshire's population is expected to grow by about 90,000 residents and 50,000 dwellings by 2029[25]. This growth will increase the demand for transport

and mobility, as well as the pressure on the existing infrastructure and services. The Council recognises the climate emergency and joined the UK100 Net Zero pledge[26]. This is a coalition of 100 councils nationwide, easing direct collaboration with counterparts addressing comparable climate challenges. The Council has committed to achieving net zero for all its operations by 2050, extending this goal to residents and businesses by 2045[27]. Additionally, the Council pledged to take a leadership role in fostering sustainability within West Northamptonshire, aligning all strategies and policies with the UN Sustainable Development Goals. The Area Wide Emissions Baseline Report[28] was formulated by the Council to serves as a tool to inform and support communities, residents, and businesses in reducing their emissions. This collective effort aims to fulfil the commitment of achieving net zero emissions for West Northamptonshire by 2045.

4.3. Electric Vehicle (EV) Uptake and Infrastructure Planning

The National EV Insights and Support (NEVIS)[29] service tool is provided by Cenex as a resource for the implementation of electric vehicle infrastructure by councils. According to the NEVIS tool, there are currently 238 public EV charging points in West Northamptonshire[30] and the Council and 3rd parties should aim to secure the installation of at least 3,180 by 2030[31].

With the proposed prohibition of the sale of new petrol and diesel vehicles in the UK by 2035, and similar policies elsewhere, it is anticipated that the makeup of vehicles on the road in the UK will continue to evolve. This shift will occur as more individuals transition to electric vehicles, and the petrol and diesel vehicles sold new prior to the prohibition reach the end of their life cycle.

In 2024, the NEVIS[32] tool by Cenex projected 22,054 electric vehicles (EVs) in West Northamptonshire, as detailed in Table 3. Tables 4 and 5 forecast increases in overall vehicle uptake by 2030. Specifically, Table 4 outlines projected figures, including 87,000 battery electric vehicles, 24,990 other EVs, and additional conventional vehicles as per NEVIS[33]. The tables highlight the significant growth expected in EV adoption within the region over the next decade.

Table 3: Status of Electric Vehicle (EV) Uptake in West Northamptonshire as of 2024

Year	Fuel	Number of vehicles
2024	Battery Electric	16,040
2024	Other EV	6,014
Total		22,054

Source: Cenex, Current Projections for West Northamptonshire.

Table 4: Forecasted High Uptake for All Vehicles in West Northamptonshire by 2030

Year	Fuel	Number of vehicles
2030	Battery Electric	87,000
2030	Other EV	24,990

Year	Fuel	Number of vehicles
2030	Petrol	82,064
2030	Diesel	80,300
2030	Other ICE	3,595
Total		277, 949

Source: Cenex, Future Projections for West Northamptonshire.

Table 5: Forecasted High Electric Vehicle (EV) Uptake in West Northamptonshire by 2030

Year	Fuel	Number of vehicles
2030	Battery Electric	87,000
2030	Other EV	24,990
Total		111,990

Source: Cenex, Future Projections for West Northamptonshire.

Table 6 outlines the availability of EV charging infrastructure in West Northampton as of Quarter 1 of January 2024. According to CENEX data, there were 238 EV charging sockets installed during this year. This indicates the existing infrastructure support for EVs and provides insights into the readiness of the district for accommodating electric vehicle growth.

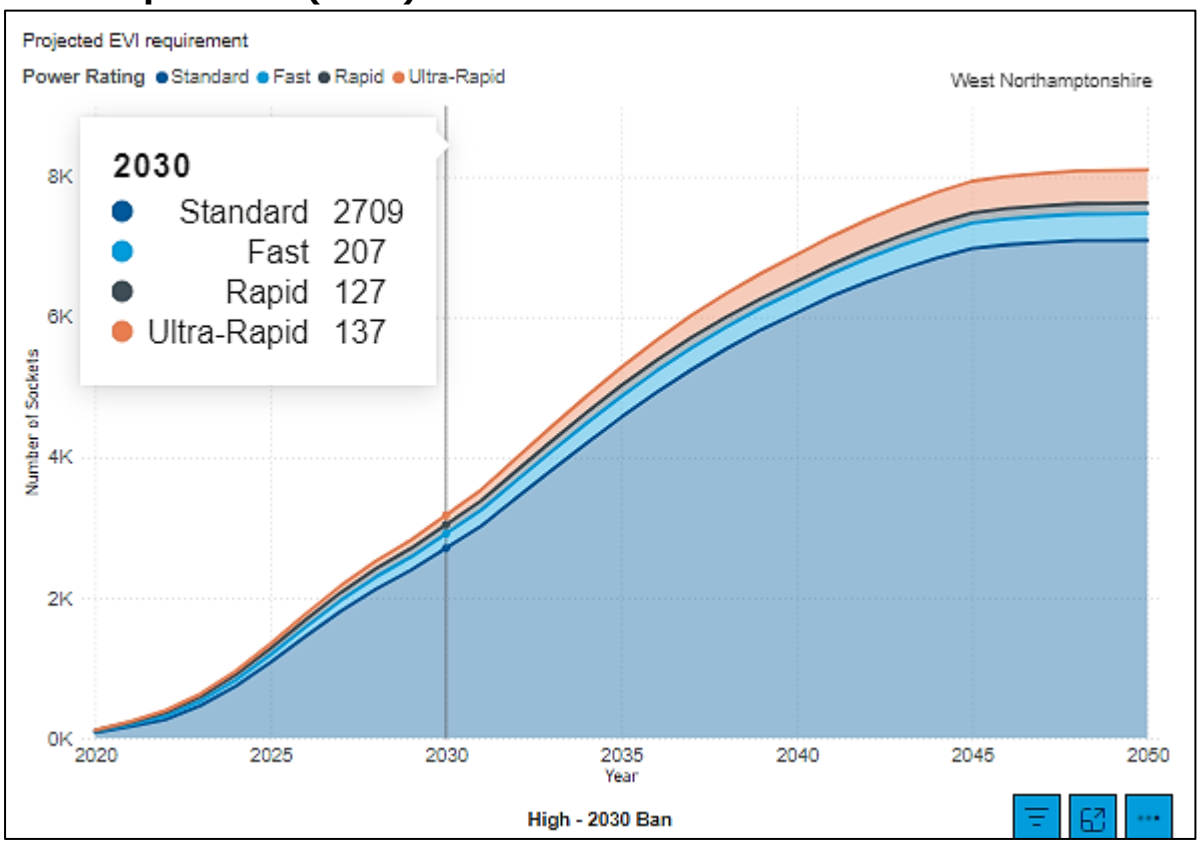
Table 6: Current Provision of Electric Vehicle (EV) Chargers and Number of Sockets in West Northamptonshire as of Q1, January 1, 2024

Power	Number of Points
High	105
Low	133
Total	238

Source: Cenex, Current Projections for West Northamptonshire.

Figure 9 visualises the projected Electric Vehicle Infrastructure (EVI) requirement for the West Northamptonshire by 2030[34]. This projection will help with developing a solution that accommodates the anticipated growth in electric vehicle adoption within the area.

Figure 9: Projected Electric Vehicle Infrastructure Requirement for West Northamptonshire (2030)



Source: Cenex, Future Projections for West Northamptonshire.

As per Cenex, based on March 2024 projections[35], the forecasted number and types of chargers to be installed in West Northamptonshire amounts to 3,180 EV sockets. Table 7 illustrates the number of chargers and their types (for which, see Table 1 for the power rating of chargers).

Table 7: Number of Electric Vehicle (EV) Charger Sockets Required by 2030 in West Northamptonshire (March 2024)

Year	Power Rating	Number of Sockets as per NEVIS
2030	Standard	2709
2030	Fast	207
2030	Rapid	127
2030	Ultra-Rapid	137
Total		3180

Source: Cenex, Future Projections for West Northamptonshire.

As can be seen, the vast majority (85%) of projected demand is for 'standard' chargers. As many of the charging locations are likely to be used for overnight parking and charging.
Of course, as EV usage continues to grow, more chargers are likely to be required. Additional chargers also give users choice and confidence that a charger will be available when they need it. Therefore, within reason, the more chargers which can be provided, the better.

4.4. EV Potential and Strategy for West Northamptonshire

A collaborative research effort in 2022, involving Zap-Map[36] and Ordnance Survey, aimed to identify households in Great Britain lacking space for EV parking adjacent to their home, for example flats and terraced houses without drives. This research suggests that in the former South Northamptonshire district, out of 40,447 households, 73% had off-street parking, while 28% did not. The area had around 35 public charging sites, providing a ratio of 3.1 charging sites per 1,000 on-street households[37]. Similarly, in the former Northampton borough, which accommodated 96,680 households, 60% had off-street parking, and 40% did not. The area featured around 37 public charging sites, equivalent to 1.0 charging site per 1,000 households without off-street parking. In the former Daventry district, with 37,275 households, 69% had off-street parking, and 31% did not, resulting in a ratio of 2.9 charging sites per 1,000 on-street households.

Of course, it is not merely the number of public chargers, but their location and availability which matters. Currently very few public chargers are in locations suitable for people to use whilst at home. Understanding where people can park in different parts of West Northamptonshire is crucial for deciding where to put chargers. We need places that are easy for drivers to reach and have enough space, power, and data network connections. Data on parking, population, geography, and commuting helps the Council decide where to focus on building EV infrastructure. This information also helps when applying for funding. Figure 10 shows the existing public charge points in West Northamptonshire as of 2024, mapped using Cadence 360 tool[38] based on National Chargepoint Registry on public electric vehicle Chargepoints in the UK (NCR) data[39].

Figure 10: Existing Charge Points in West Northamptonshire based on National Registry for Charge Point Locations Data

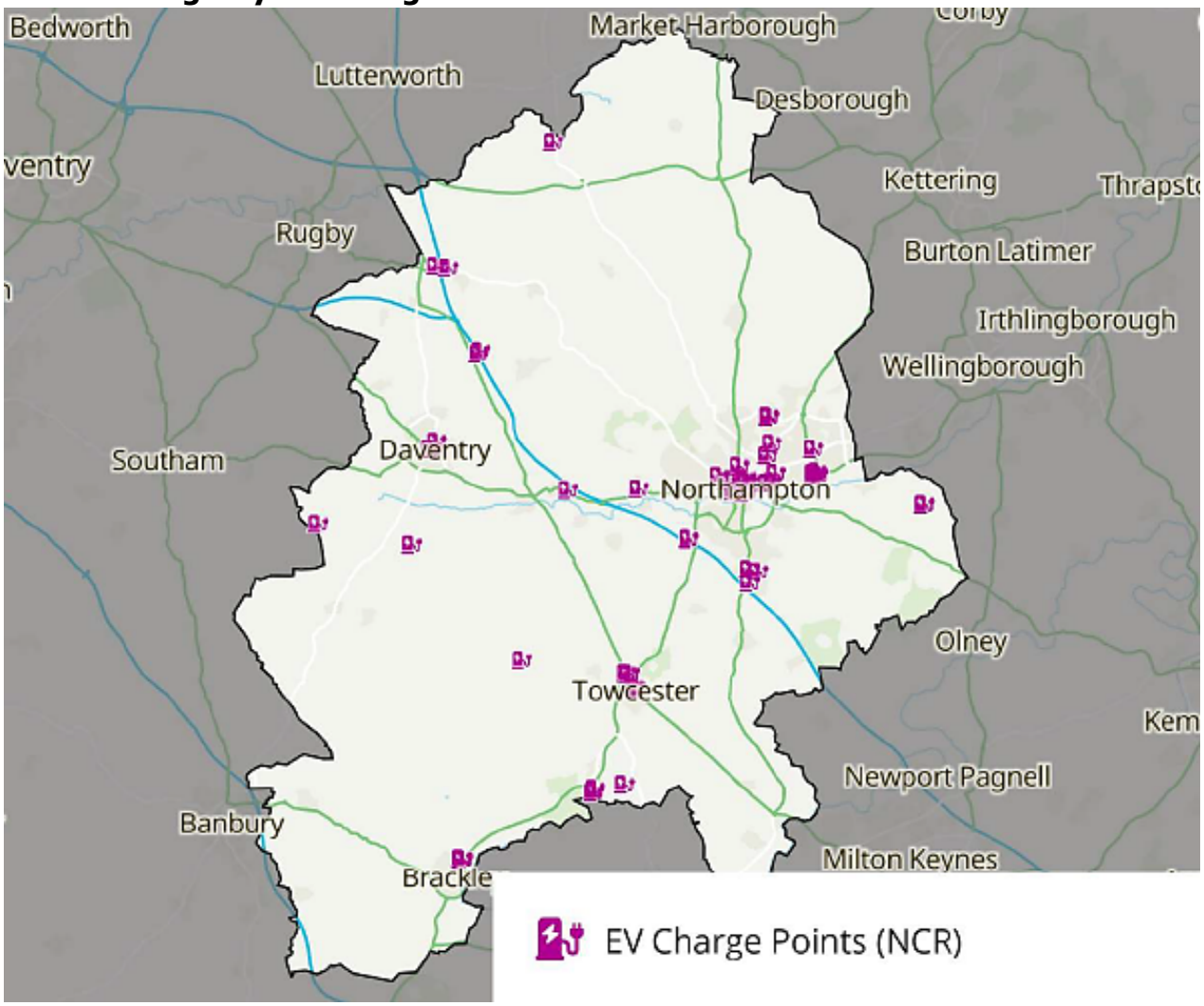


Figure 11,12,13,14 illustrates the need for on-street chargers for terraced houses and flats without off-street parking across four areas of West Northamptonshire: Daventry, part of Northampton, Towcester and Brackley. The future potential sites are represented by orange spots on the map. Actual installations will depend on further site evaluations, assessments of electrical capacity, and market interest, which may vary depending on the procurement route.

Figure 11: Potential On-Street Charging Point Locations in Daventry

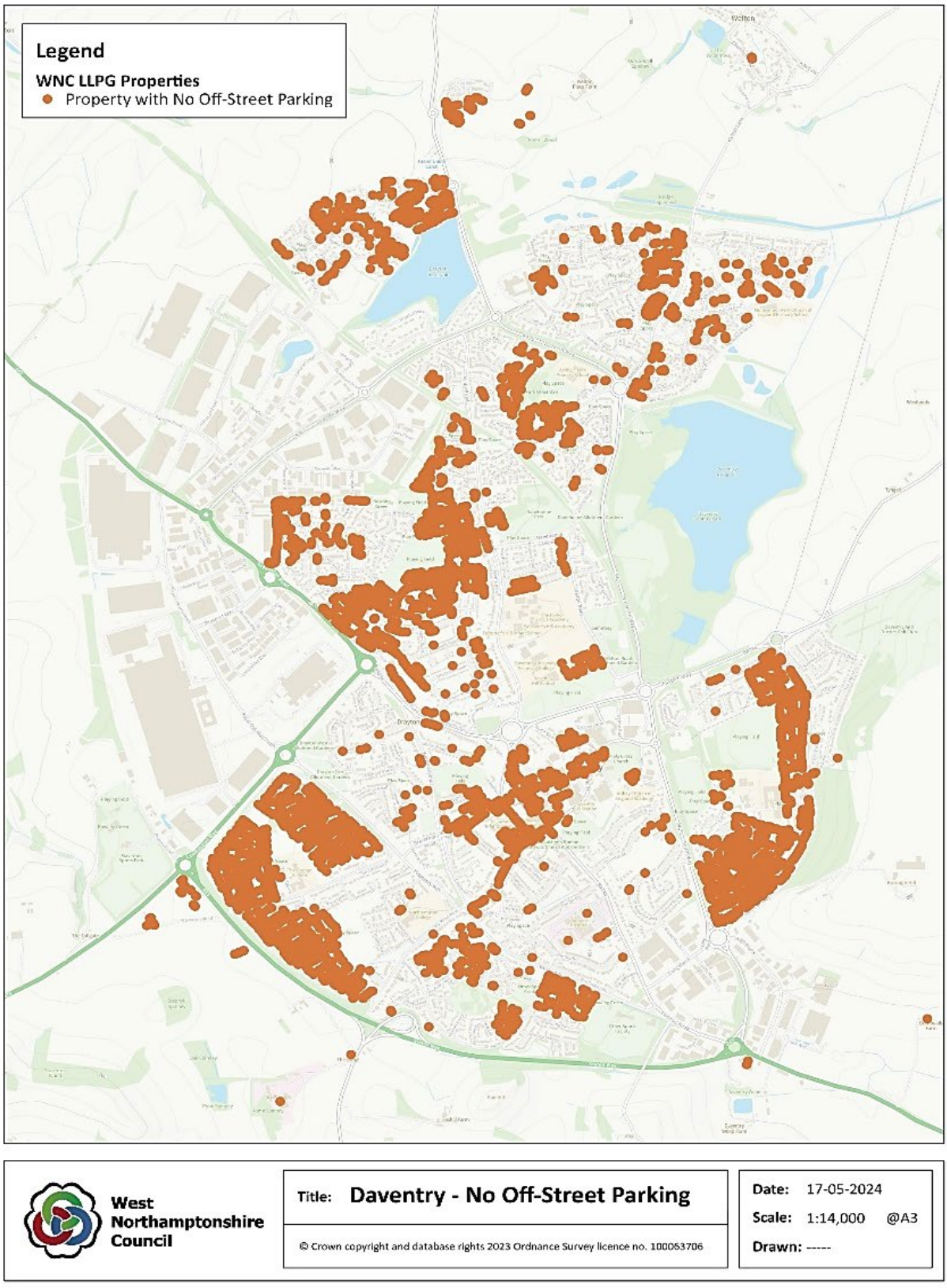


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Figure 12: Potential on-street charging point locations in Northampton

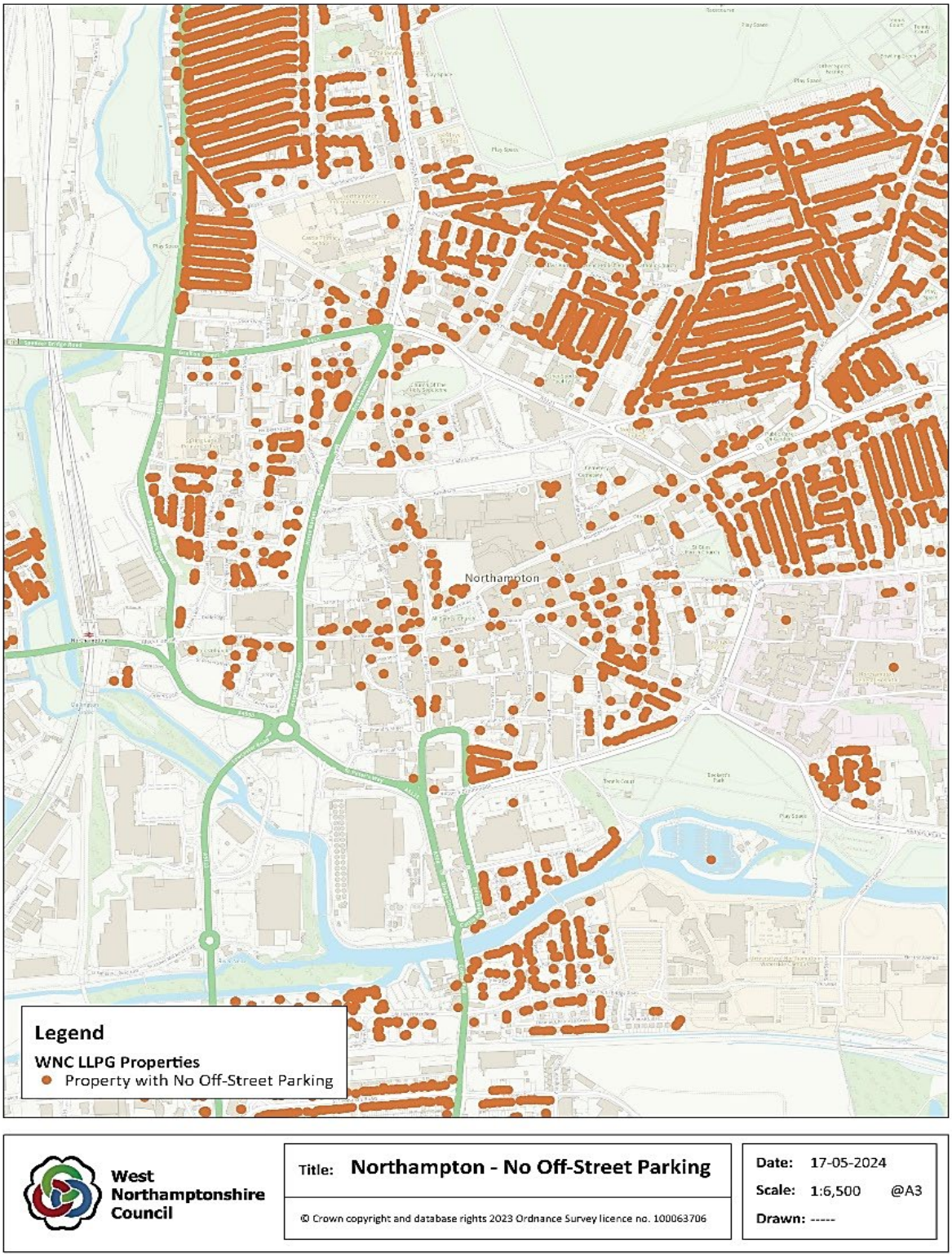

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Figure 13: Potential On-Street Charging Point Locations in Towcester

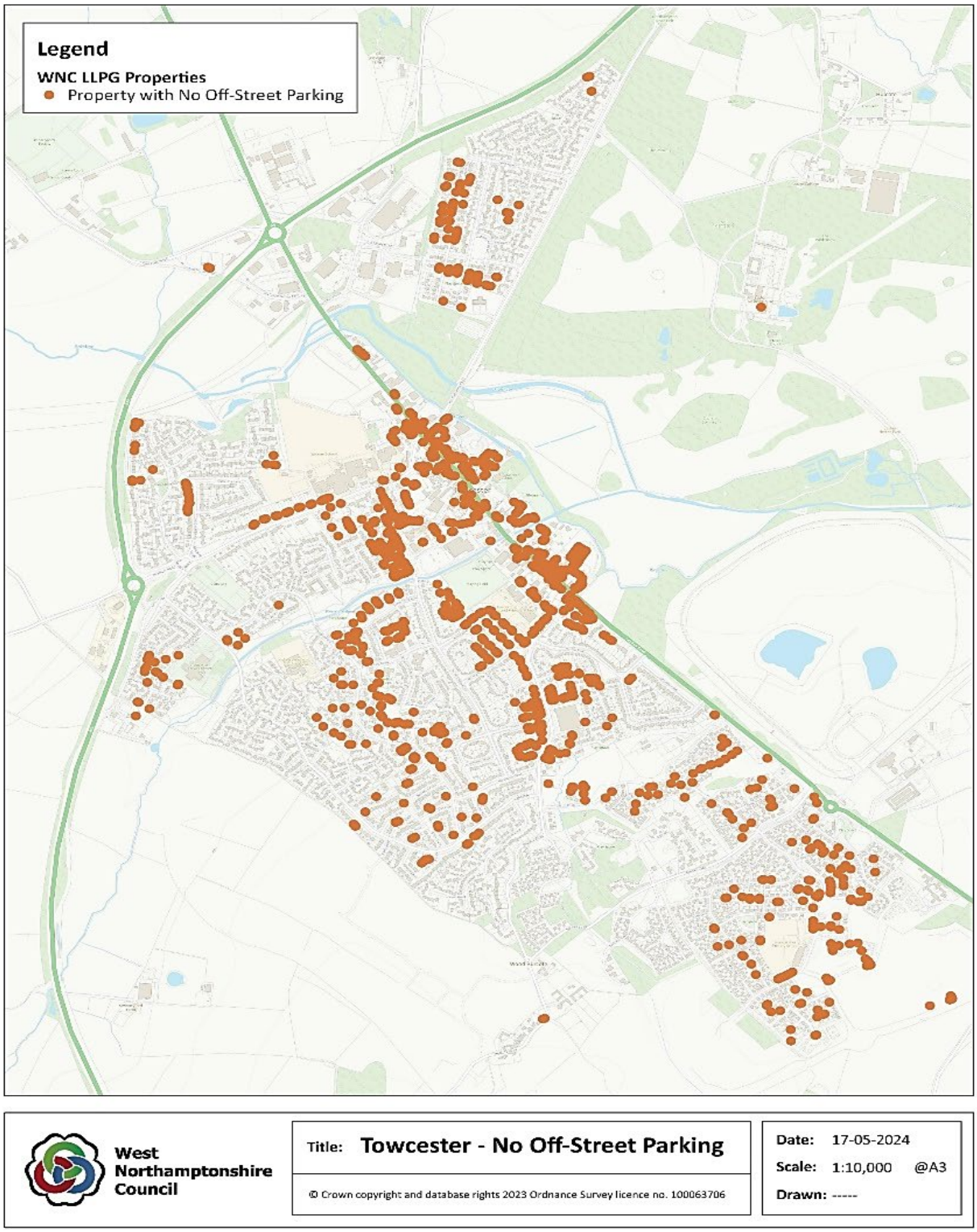

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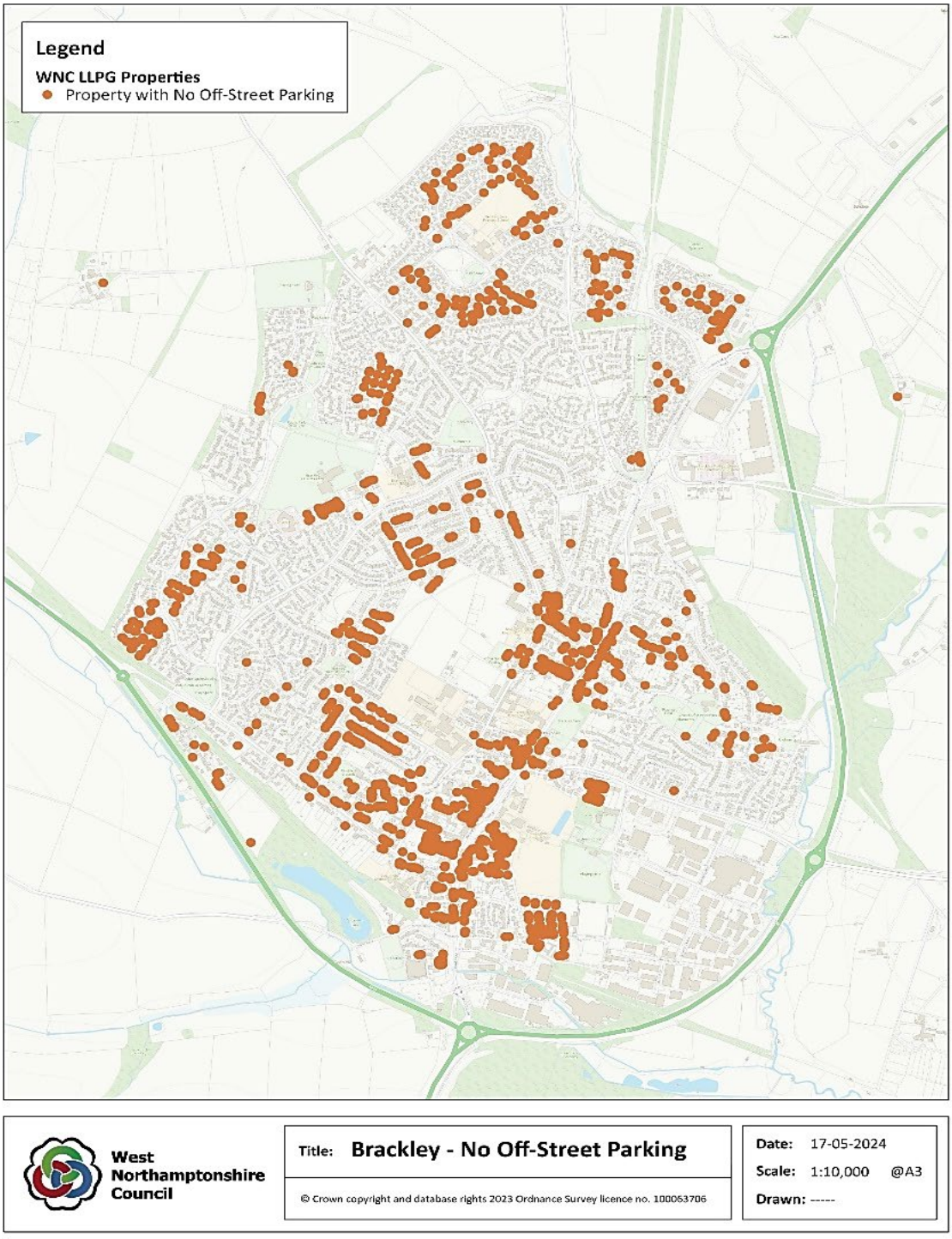
Figure 14: Potential On-Street Charging Point Locations in Brackley



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4.5. On Street Charging: The Virgin Park and Charge Project (VPACH)

The former Northamptonshire County Council launched a pilot of on street chargers under the VPACH project2 funded through Innovate UK. Fourteen charge points were installed West Northamptonshire: Oakwood Road, Upper Thrift Street, Ardington Road, Semilong Road, Barry Road, St James' Park Road, and Vicarage Road. 22kW Fast Chargers that can fully charge a car in three hours have been installed with two, dual socket chargers at each site which can accommodate up to four vehicles, with Believ handling operational and maintenance responsibilities[40]. One charge point at each location has two dedicated EV parking bays. The other chargepoint remains accessible for all types of vehicles.

Utilisation of the charge points has increased month on month since the charge points were installed, with the highest utilisation currently around 15%, but varies between locations. As expected, the growth in utilisation is relatively limited because of its timing, relatively early in the transition to EVs, and specifically because there are insufficient chargers across the area to overcome drivers' doubts about always having access to a charger when needed, thus not overcoming the cycle of non-adoption outlined in 4.8.1.

4.6. WNC Fleet

WNC operates several vehicle fleets in its own right. These are distinguished as:

- Formal fleet – vehicles WNC owns outright or has legal leases of.
- Grey fleet – vehicles used by WNC staff, typically owned, or leased by members of staff.
- Ghost fleet – vehicles used exclusively or largely on WNC business by contractors.

WNC is already working closely with Kier, the council's highways management partner, to exploring opportunities to replace conventional vehicles with electric or ULEV alternatives[41]. This collaborative effort extends to waste management services, where contractors are already utilising electric vehicles to enhance efficiency while minimising environmental impact.

5. Vision and Ability to Deliver

5.1. Vision

Our vision for the West Northamptonshire EV charging network is:

Supporting West Northamptonshire becoming a more sustainable place to live and work through pervasive availability of public EV charging facilities in those places which benefit from them, especially residential streets, with a range of charging speeds, delivered efficiently, meeting the needs of people of different abilities and backgrounds.

The Council envisions a robust EV infrastructure that adapts to current and future user needs[42]. This development will support the district's transition to decarbonised transport, improving air quality, and providing affordable clean transport options, thereby contributing to net zero. The Strategy serves as a guiding force, offering direction and leadership to suppliers involved in infrastructure installation. It establishes standards, identifies strategic approaches, and provides assurance that investments will be supported through a comprehensive set of measures.

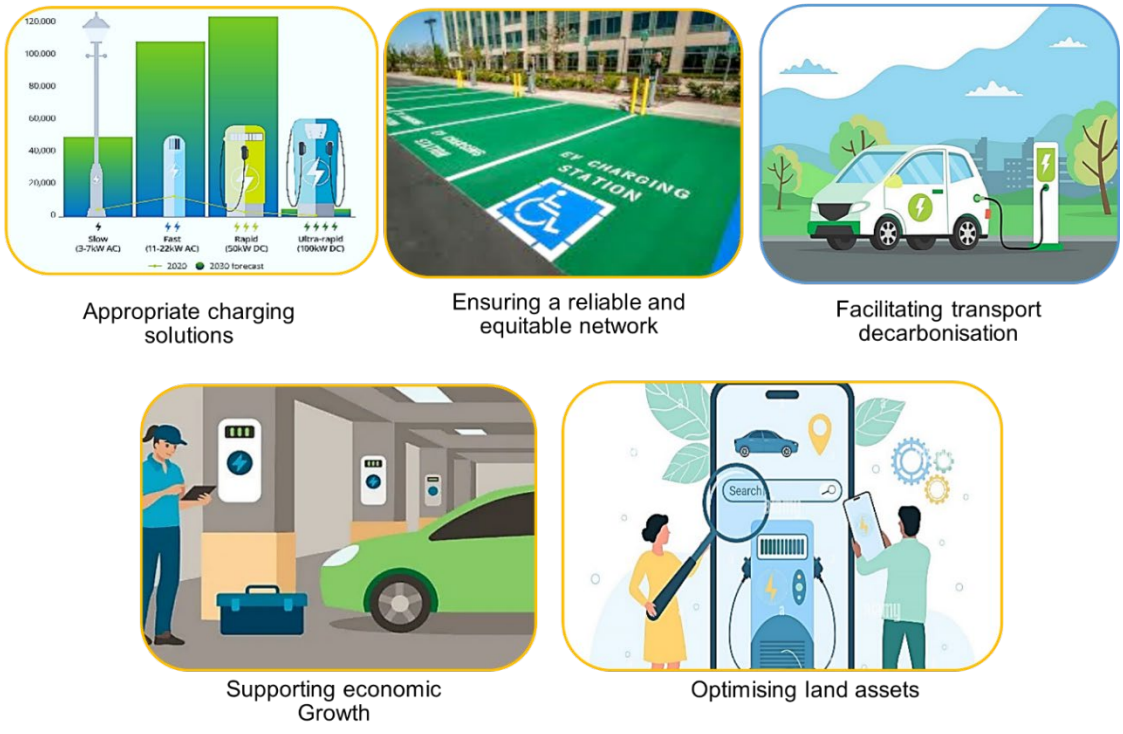
The strategy includes a range of policies and measures crafted to facilitate the transition to electric vehicles, leveraging associated environmental, social, and financial benefits. Initiatives involve direct actions by WNC, such as policy setting, procurement, public investment in infrastructure, educational programs, and campaigns. Other actions aim to influence key stakeholders, including public sector bodies, residents, and businesses.

5.2. Objectives

Effective strategy implementation is fundamental for the success of Electric Vehicle (EV) adoption and infrastructure development. The focus of this strategy is summarised in Figure 15 and Table 8 presents the key objectives and actions to achieve them.

The Council is facilitating EV ownership by providing on-street EVCP charging infrastructure ahead of demand. This recognises the inevitability and desirability of increased EV ownership[43].

Figure 15: Key objectives of EVI strategy



Appropriate charging solutions

Ensuring a reliable and equitable network

Facilitating transport decarbonisation

Supporting economic Growth

Optimising land assets

Table 8: Objectives

Objective	Actions
To have Appropriate Charging for EVs	A. Implement a mix of on-street chargers, rapid charging stations, destination chargers, and workplace charging for the public. B. Promote innovative solutions, in particular those which reduce costs and increase convenience. C. Prioritise deployment of on-street charging infrastructure in areas with limited off-street parking. D. Partner with local businesses and other stakeholders to install charging points in key areas.
To ensure Charging Networks are Reliable, Affordable, Accessible, and Maintained	A. Ensure there is regular maintenance and where needed upgrades of existing charging infrastructure. B. Ensure there is accessibility for all residents, including people with disabilities. C. Support pricing strategies promoting fairness and affordability. D. Monitor network performance and address issues promptly to minimise downtime.
To support Transport Decarbonisation Policies	A. Advocate for supportive policies at national and regional levels. B. Collaborate with government agencies to develop incentives for EV adoption and provision of EV infrastructure. C. Provide data and insights to inform policy decisions on transport decarbonisation. D. Engage stakeholders to raise awareness and build consensus on decarbonisation goals.
To support Economic Growth	A. Promote job creation through development and maintenance of charging infrastructure. B. Partner with businesses to stimulate investment in EV-related industries. C. Support the provision of training to support workforce development in the EV sector. D. Foster innovation and entrepreneurship in the electric vehicle ecosystem.
To Improve and Make Best Use of Land and Assets Available	A. Utilise existing infrastructure like parking facilities and transport hubs for charging.

Objective	Actions
	B. Identify other land suitable for charging infrastructure deployment. C. Implement land use policies promoting provision of, and prioritising efficient use of space for, EV charging. D. Collaborate with property owners and developers to integrate charging solutions into new projects.

5.3. Scope

This Strategy is focused on charging infrastructure for cars and other light vehicles. Low or no local emission power solutions for heavy vehicles is important and will be addressed separately. Solutions may include chargers for battery operated vehicles, overhead electrification, and use of hydrogen or biogas.

Similarly, the move to smaller, lighter vehicles such as cycles, including electric cycles, and e-scooters is an important option for people, supporting a wide range of policy goals, notably decarbonations, public health, and vibrant towns. However, because of their high efficiency they only require relatively low levels of power and thus a strategy for specific charging infrastructure is not required. Measures to promote these modes will be found in the Council's Local Transport Plan.

5.4. EV Infrastructure Powers and Influence

WNC has a range of powers and influence by which it can promote the provision of suitable EV charging infrastructure. The key areas are as follows:

- Provider of many of the main off-streetcar parks, particularly in the centres of Northampton, Daventry, and Towcester, and car parks across West Northamptonshire associated with its service provision (example such as country parks). Car parks are often desirable locations for EV charging because vehicles spend extended periods of time in them.
- A major landowner, thereby having control over sites not currently used for parking which may be important for providing specific EV charging facilities, particularly for faster charging.
- Local highway authority, thereby having a degree of control over highways except trunk roads and motorways (for which National Highways is the highway authority).
- Local planning authority, thereby having a degree of control over the form and content of new development.
- Conductor of development projects, including for service provision and regeneration, allowing the provision of EV charging infrastructure within the developments.
- Major employer and service provider, commissioning several vehicle fleets, and providing depot and parking space for them.

- Recipient of various grants (typically associated with one or more functions listed above), which can be used to support EV charging provision. These include specific grants for that purpose, and general grants such as those for highway purposes.
- Community leader, helping to set an example and lead local public discourse about what is desirable.

The powers under items 3 and 4 can only be exercised in accordance with the specific legal arrangements for those functions. For example, whilst the surface of the land which is highway maintainable at the public expense is 'vest in' (effectively owned by) the Council, it can only be used for purposes lawful for highways, and following the processes and procedures set out in legislation relating to them.

In addition to 6, the Council could in theory spend money of its own, or which it borrows, on providing EV infrastructure. However, given the tight financial constraints it operates under, this is only likely to be possible where a positive financial return, as well as a public benefit, can be shown. This strategy considers both the range of the Council abilities to act and the constraints on those abilities.

6. Policies

The policies presented below have been developed to offer clear direction and guidance for decision-making around EV adoption and infrastructure development. They seek to ensure consistency, standardisation, and regulatory compliance while also providing incentives to encourage EV adoption. These policies have an aim to facilitate stakeholder engagement, fostering collaboration among residents, businesses, and government agencies:

Policy 1: Strategic charging infrastructure network

Policy 2: Equitable and accessible charging

Policy 3: Residential charging

Policy 4: Charging hubs and super hubs

Policy 5: Smart charging

Policy 6: New development

Policy 7: Shared transport

Policy 8: Public intervention and value for money

Policy 9: Collaboration and engagement

Policy 10: Leading by Example – EV adoption in Council sites and fleets.

6.1. Policy 1: Strategic Charging Infrastructure Network

6.1.1. Intent

The Council aims to secure the creation of an EV charging network which meets the needs of the district's residents, businesses, and visitors, and which accelerates the transition to sustainable transportation.

6.1.2. Approach

The Council will both procure and deliver EV chargers on its own land and highways, and also provide a supportive environment for provision of chargers on private land, such as business car parks.

The Council aims to install and support the installation of EV chargers informed by localised, quantitative data and modelling techniques, as well as guidance from the National ChargePoint Registry and the Cenex NEVIS tool. This approach allows for the customisation of the 'Everest' model, which encompasses strategic planning, implementation support, stakeholder engagement, and the application of learnings from innovative demonstration projects like VPACH2[44]. This strategy is designed to address the challenges of EV charging accessibility in both rural and urban environments. It should ensure that expansion decisions are based on area-specific information, enabling accurate assessment of demand and optimal placement of charging stations.

6.2. Policy 2: Equitable and Accessible Charging

6.2.1. Intent

The Council seeks to ensure an equitable provision of EV chargers across West Northamptonshire, meeting the diverse needs of people, including the needs of those with relevant disabilities. Community input and stakeholder collaboration will be integral to our strategy, ensuring an accessible and sustainable EV charging network.

6.2.2. Approach

There are three main strands:

- Geographical distribution.
- Usability, especially for people with relevant disabilities.
- Pricing.

In terms of geography, areas less able or likely to have access to suitable EV chargers include dense urban areas with limited off-street parking (see Policy 3), rural areas, and areas with limited electricity grid capacity.

Emphasis will be placed on ensuring there are sufficient EV chargers suitable for individuals with disabilities. It is unlikely to be practical to make all chargers accessible, given the scale of roll-out needed and the need, for reasons of economy, to use existing infrastructure such as lamp posts where possible. However, it is vital to ensure people with relevant disabilities can use, and therefore to charge, EVs at locations which work for them.

WNC will collaborate with relevant stakeholders, including disability advocacy groups and local communities, to gather insights and feedback on EV charging infrastructure's accessibility. This collaborative approach ensures that the needs of individuals with disabilities are effectively addressed in planning and implementing EV charging facilities across West Northamptonshire.

Pricing is also a key issue, with non-domestic chargers typically costing much more per kWh of charge provided than domestic ones. This arises due to a combination of factors, mainly infrastructure costs and VAT (Value Added Tax). The Council's approach is designed to reduce average infrastructure costs. It will also support calls for rationalisation of VAT (Value Added Tax) treatment between domestic supplies (charged at 5%) and non-domestic supplies (charged at 20%).

The Council's procurement of a delivery partner (in detail in Chapter 8) will provide a structure within which these issues can be addressed.

6.3. Policy 3: Residential Charging

6.3.1. Intent

The Council will seek to enable the purchase and use of EVs by residents of areas with limited ability for residents to provide their own chargers by providing public charging facilities. The focus will be on delivering large numbers of chargers, so that

people have choice and confidence that a charger will be available when they need one.

6.3.2. Approach

WNC will:

- Use mapping tools to establish areas likely to benefit from public chargers to meet residential EV charging needs.
- Gather data on resident use of car parks, especially overnight, to assess comfort levels with leaving vehicles.
- Conduct resident surveys where these are useful to determine preferences for charging in car parks as against on-street charge points.
- For reasons of efficiency and to limit street clutter, largely use slow chargers, making maximum use of existing infrastructure such as lamp posts.
- Typically install around 10% fast chargers, to accommodate occasional urgent charging needs. These chargers will normally have designated 'EV charging only' bays.
- Generally, not use 'EV charging only' bays for slow chargers where this is likely to result in difficulties with parking supply generally. Instead, it will work based on providing as many chargers as possible, using cheaper solutions, to give people access.
- For fast chargers, however, it would use 'EV charging only' bays to maximise the benefit of the investment needed to create fast chargers and ensure people had maximum opportunity to benefit from them.
- Consider pedestrian and special mobility needs. The goal is to prioritise accessibility without compromising safety, utilising buildouts into the highway if necessary.

'EV charging only' bays require the use of a traffic regulation order (TRO)[45]. WNC will coordinate the identification of suitable sites and consultations on parking restrictions at specific locations to minimise disruption to the residents of the selected locations. This integrated approach should deliver more efficient engagement with statutory bodies and residents to increase the support for this infrastructure which will lead to simplifying procedures, expediting timelines, and reducing administrative burdens and associated costs.

6.4. Policy 4: Charging Hubs and Super Hubs

6.4.1. Intent

WNC will develop a plan for charging hubs and super hubs to accommodate increasing EV adoption and the need for enhanced charging infrastructure. WNC will leverage its car parks but also other land – owned by itself or through working with others – to deliver charging hubs in suitable locations across West Northamptonshire. This will help address range anxiety for those undertaking longer trips and thus support the transition to EVs both locally and nationally.

6.4.2. Approach

The Council will follow the following approach:

- Site selection: Identifying suitable locations for charging hubs based on factors like population density, traffic flow, accessibility, and availability of sufficient electricity supplies at reasonable cost. Prioritise areas where EV adoption is high or expected to grow, or where large numbers of EVs are expected to pass.
- Strategic deployment of charging hubs: WNC will assess the suitability of its owned car parks and available land for charging hubs. Owners of commercial car parks and managers of housing stocks of all types will be encouraged to deploy public EV charging infrastructure in safe and accessible spaces, with pricing transparency. WNC will work with these stakeholders to understand the timing of their implementation to align overall plans and forecasts. It will also encourage continued private sector investment in public charging hubs at private sites that are widely used by the public e.g., train stations, supermarkets, and other commercially operated venues[46].
- Community engagement: Engage with local communities and stakeholders to gather feedback, address concerns, and build support for rapid charging initiatives. Encourage participation in EV adoption programs and incentive schemes.

Where appropriate, charging super hubs may also be mobility hubs, supporting Policy 7.

6.5. Policy 5: Smart Charging

6.5.1. Intent

WNC's goal is to seamlessly integrate EV charging with smart energy systems. This holds the promise of delivering tangible benefits to the grid and users, fostering more efficient and flexible charging practices, where charging can be optimised based on factors such as grid demand, energy prices, and renewable energy availability.

6.5.2. Approach

It is generally simpler to support smart charging at private EV chargers. This is because it is not necessarily desirable for vehicles to be left at public chargers wait to buy electricity at cheaper times, or to 'sell' power back to the grid, as the public chargers should be available for other vehicles to charge. Therefore, WNC will:

- Not permit 'smart' use of its public EV chargers except where this is compatible with their efficient operation.
- Encourage smart charging at domestic and other private chargers, where the grid can support this.
- Apply smart charging to its own vehicle fleets where this is practical and cost effective. This will be addressed further in the forthcoming Fleet Climate Strategy.

- Co-ordinate EV changing plans (both its own those of others it is aware of) with the DNO and any relevant IDNOs. This should help ensure the necessary electrical infrastructure is in place in time, costs are minimised, and opportunities for smart charging can be taken.

6.6. Policy 6: New Developments

6.6.1. Intent

The Council will seek to ensure that new developments include sufficient EV chargers to meet the likely demand once the vast majority of vehicles are electrically powered.

6.6.2. Approach

The Council will:

- Set minimum standards for EV charging points based on analysis and projections for EV uptake, making provision for the vast majority of vehicles to be electrically powered.
- Align local planning policies with National Planning Policy Framework (NPPF) guidelines for EV charging infrastructure.
- Provide guidance on EV charger provision for town and parish councils and neighbourhood forums pursuing neighbourhood development plans. The WNC Sustainability Planning Report[47] includes guidance on integrating EV charging infrastructure.
- Encourage developers to prioritize low carbon standards and embrace renewable energy in construction projects.
- Include Section 50 permit (street works licences) regulations and procedures in planning for effective EV infrastructure implementation wherever necessary.

6.7. Policy 7: Shared Transport

6.7.1. Intent

The Council will support development of electrically powered shared transport, such as taxis, buses, and trip-sharing arrangements (it has already taken action to support electric taxis and buses).

6.7.2. Approach

WNC will:

- Continue to support electrification of the taxi fleet, including by providing further dedicated electric taxi charging points where appropriate. The trend towards electric vehicles (EVs) is growing in the taxi industry across the UK[48]. Electric taxis offer numerous benefits, including lower emissions, reduced fuel costs, and a smoother driving experience[49].
- Continue to support electrification of the bus fleet, including arrangements for on-street charging where appropriate.
- Work in partnerships with local car clubs and other mobility service providers to facilitate shared electric transportation options.

- Investigate allocating dedicated parking spaces for shared electric transport to improve accessibility and for convenience.
- See how mobility hubs can help promote sustainable urban transportation (see Policy 4).

6.8. Policy 8: Public Intervention and Value for Money

6.8.1. Intent

As outlined above, public intervention is required to accelerate EV deployment in line with the UK's climate targets and to address areas of market failure such as where public EV chargers are needed, but the market cannot provide them (see section 4.8).

The Council will therefore seek private and public funding to build a robust and sustainable EV charging network across West Northamptonshire[50].

6.8.2. Approach

As outlined in 6.4, the Council has a range of ways of securing the delivery of EV chargers. Given the scale of need, the value of access to the Council's land, and the allocation of LEVI grant to support provision of chargers in residential areas, it makes sense for it to procure a contract to deliver chargers.

Due to the significance, scale, and complexity of the issues involved in such procurement, this is addressed in detail in Chapter 8.

6.9. Policy 9: Collaboration and Engagement

7.9.1. Intent

Even with the proposed strategic procurement, delivery of sufficient EV charging for West Northamptonshire is not something the Council can achieve on its own. It will therefore work with local communities, parish councils, other public bodies, and the private sector to maximise opportunities.

7.9.2. Approach With Communities

Community engagement is a vital aspect of planning and implementing EV infrastructure, involving active collaboration with local communities to understand their needs and preferences. An inclusive approach seeks input and feedback from residents, businesses, and stakeholders, ensuring that development aligns with community requirements and promotes accessibility to charging facilities.

WNC will develop and execute a community engagement strategy for working with affected communities throughout the EVI implementation process. Sufficient time and resource will be allocated for community engagement, supporting meaningful two-way communication.

WNC will conduct campaigns to educate residents about the benefits of EVs and promote the use of public charging infrastructure through various communication channels, including online platforms, community events, and local media[37]. It will conduct workshops or training sessions for stakeholders, including local councils,

businesses, and community leaders, to raise awareness about the importance of EV infrastructure.

7.9.3. Collaboration with Town and Parish Councils
WNC will invite parish and town councils to include assets they own or control, notably car parks, within the scope of its work; in particular, within the land on which its chosen operator can install EV chargers. This is likely to be of particular value in rural contexts, where parish councils, or village hall committees and similar bodies, can be the controllers of the only public car parks in a village.

7.9.4. Collaboration with Other Public Sector and Relevant Bodies
WNC will collaborate with other public bodies, such as NHS trusts, and other controllers of car parks and useful land, by enabling them to be part of its large-scale EV charger contract if they so wish.

7.9.5. Independent On Street Chargers
As noted in 7.8.2 above, WNC will, in the interests of securing value for money, give priority for on-street chargers to its appointed operator and to ensure operational efficiency. Where an independent operator is permitted to proceed, we will operate a streamlined Section 50 license process. A standard form of Section 50 license and Section 115E consent (where required) will be prepared, together with comprehensive guidance notes.

6.10. Policy 10: Leading by Example – EV Adoption in Council Sites and Fleets

6.10.1. Intent

The Council will use its role as the operator of significant vehicle fleets to support the transition to electrified fleets, including by the provision of EV charging in its depots and places its staff park (both public car parks and any specific car parks).

6.10.2. Approach

The Council will:

- Continue its work on Highways and Waste fleets, moving towards electrification or other zero or low carbon fuels, as appropriate.
- Procure a new fleet management contract with a focus on sustainability. The Council's vehicles, comprising cars, vans, and minibuses, are currently provided through various contracts with different providers. A consolidated approach is deemed necessary to ensure efficiency and alignment with WNC's objectives, including its net zero 2050 targets. The selected approach should aim to maximise value for money, support the Council's sustainability goals, and provide flexibility to adapt to technological advancements.
- Provide EV charging in its depots and places its staff park (both public car parks and any specific car parks).

- Continue providing a salary sacrifice scheme for employees to lease EVs and hybrids at discounted rates, enhancing accessibility to sustainable transport options.

The Council is also developing a Fleet Climate Strategy to address the environmental impact of its fleet, recognising the significance of vehicle usage in service delivery. This will focus on reducing the need for vehicles, particularly large, energy-intensive ones, but where cars, vans, and other vehicles are still essential, electrification is likely to be the preferred solution in most instances.

7. Strategic Delivery

7.1. Purpose and Approach

As identified above, direct intervention by WNC is required to enable or accelerate the move EVs. Merely setting a policy context will not be sufficient. This part of the strategy, therefore, outlines the strategic actions the Council will take to ensure a step change in EV charging availability, especially in residential areas which depend on on-street parking. To this end the Council will make use of grant funding, especially the LEVI capital allocation provisionally assigned to it, and of the value of access to its assets, to secure progress.

7.2. Procuring an Operator

7.2.1. Introduction

The Council will procure an operator to install chargers across its area and then operate them for a period. This will bring expertise and economies of scale to bear and provide a mechanism to allow for fees to be levied (as the Council itself cannot levy charges for electricity).

7.2.2. Procurement Operating Models for Commercial Arrangements

While embarking on procurement, the Council must carefully consider the procurement approach. The chosen commercial arrangement, dictating investment, ownership, risk, and responsibilities, is a key decision in this process. Four common arrangements include own and operate, public private commercial partnership, joint venture, and land lease. Each has its merits and considerations, and the choice impacts project execution and outcomes significantly. Table 9 outlines various operating models for procurement[51].

The Council can benefit from the LEVI Procurement Forum which offers a Heads of Terms[52] document guiding LAs in defining key contractual and commercial terms, facilitating efficient procurement. It provides guidance on principles and considerations, aiding local authorities in constructing specific contracts tailored to their project scope and local regulations. Supplemental guidance on technical schedules, procurement risks, valuation, and evaluation is available[53].

Table 9: Main operating models/commercial arrangements

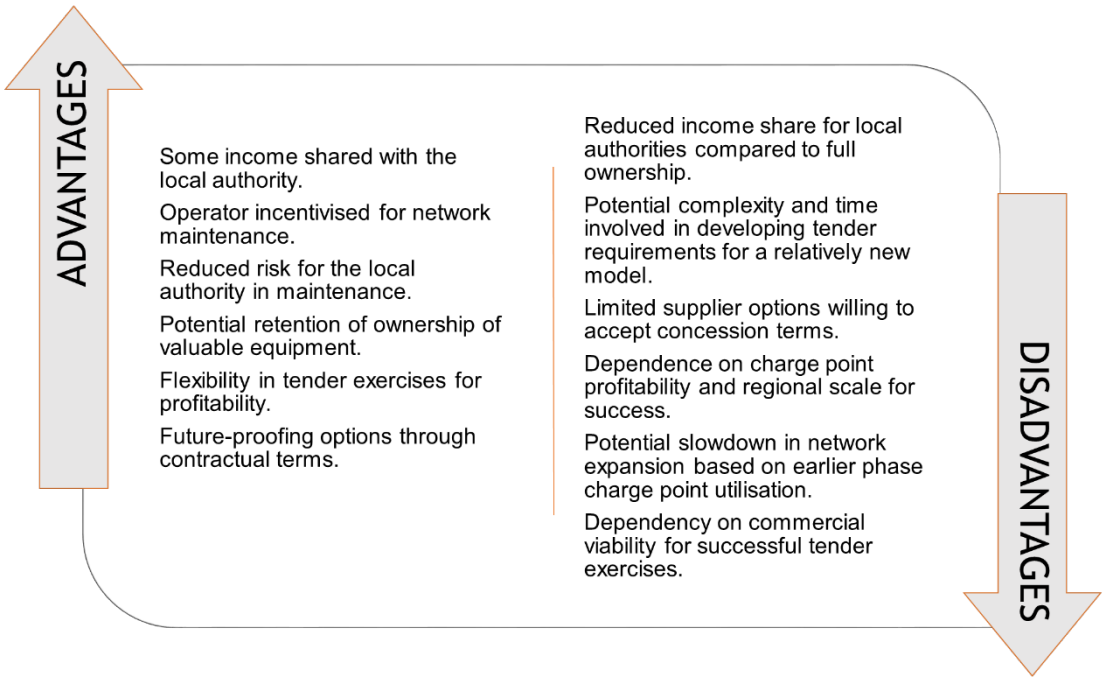
Operating Models	Description
Local authority own and operate	In this model, the local authority takes on a hands-on role. It funds all capital and operational costs, maintains complete ownership, control, responsibility, and risk, and keeps all revenue. It is the sole decision-makers when it comes to tariffs (an advantage not available in other models where pricing is largely based on the market).
Public private commercial partnership	This model offers flexibility, with capital cost, operational cost, control, and risk shared between public bodies and service providers. It can range from a basic arrangement where a supplier operates charge points installed by the local authority for a small share of the revenue, to a 'concession' approach where the local authority invests some capital or provides access to important land resources, allowing a service provider to install and operate charge points. The local authority maintains some control over service quality and infrastructure location through contract management and performance monitoring. The service provider, which finances much or all of the capital and replacement costs of the charging infrastructure and sets user tariffs, assumes much of the responsibility and risk associated with installation, maintenance, operations, and asset utilisation. More intricate arrangements can be designed, with the resulting revenue and risk share determined by the proportion of risk and investment or varying strategy requirements regarding coverage or tariff control for residents.
Joint venture	This model involves creating a separate business entity by two or more parties, often including the local authority and at least one service provider. Joint ventures are an alternative to a purely contractual agreement with a service provider and are typically formed when the parties have complementary objectives. However, they can be quite complex to establish. Risk, responsibilities, and benefits are usually divided based on financial contributions, often on a broad sliding scale.
Land agreement	This model is typically a low-risk revenue option where the local authority leases or licenses land it owns to a service provider, retaining minimal control over the resulting service. It is the least involved option for the local authority. The service provider covers all capital and operational costs and assumes the risk and responsibility for installation, maintenance, and asset utilisation. The lease grants possession of the land for a defined period, with no control over the infrastructure eventually deployed.

7.2.3. Consideration of Options

EV charging is inevitably an evolving technical area. It appears that a number of standards have emerged, such as for the types of sockets used, but these may

change as use, research, and development identifies better options. Given this, it is preferable for the Council to reduce its risk exposure to technical and commercial changes. This suggests that the 'own and operate' model would not be optimal. Conversely, to secure its desired outcomes, the Council will need a reasonable degree of control over the actions of the operator. This suggests the 'land agreement' model is unlikely to be suitable. This leaves the partnership and joint venture models for consideration. Figure 16 outlines the key benefits and disbenefits of these models.

Figure 16: Benefits of public-private partnership arrangements in concession contract



The joint venture model is effectively a sub-type of a partnership. At present it does not appear the additional complexity of a joint venture is justified, but if during the procurement process (see below) this changes it would be possible to use one. Thus, a form of partnership is proposed. Specifically, it is proposed to use a concession contract, where the construction risk and much of the operating risk lies with the operator. The Council's contribution would come in the form of its land plus the grants and any other capital it makes available.

7.2.4. Procurement Frameworks

The Council may benefit from utilising specialised public frameworks[54] for acquiring charge point infrastructure. These frameworks offer a streamlined and compliant process for procurement, ensuring that public sector bodies adhere to relevant legislation while also simplifying the acquisition process. By leveraging established frameworks such as the Crown Commercial Service Vehicle Charging Infrastructure Solutions (VCIS) dynamic purchasing system (DPS) or those managed by specific

local authorities like Kent County Council or Hampshire County Council, local authorities can access pre-vetted suppliers and solutions. Conversely, the Council may conclude that letting its own contract gives it complete access to the market and ability to set terms which reflect its own requirements.

7.2.5. Soft Market Testing

Preparing and planning for procurement is essential to ensure that the right principles are applied in selecting the most suitable electric vehicle infrastructure service provider. Effective procurement plays a crucial role in testing and evaluating suppliers, their proposed solutions, and achieving the best value for the service. Early market engagement is vital in this process, allowing the Council to gather valuable insights and feedback from potential service providers[55].

Engaging with the market early on provides WNC with a clear understanding of the supply market's capabilities and potential to deliver, while also fostering new relationships with suppliers. To ensure successful engagement, WNC will prioritise planning and delivering engagement activities early in the delivery process. Researching the market, sharing plans, designing an effective delivery approach, advertising events early, and capturing feedback from suppliers are practical steps that can facilitate effective market engagement while procurement exercise.

7.2.6. Supporting Innovation

Delivering EV charging at scale needs to become more cost effective. This supports most Policies, but especially Policies 2 and 9. Therefore the Council will design its procurement process to support innovation in design and delivery of EV charging equipment, with the intent of securing low cost, highly replicable charging installations.

The Council will also look to work with others, including relevant research and development bodies such as the Energy Systems Catapult, to support the development and commercialisation of low-cost charging solutions.

7.2.7. Concession Contract Structure

As noted above, the preferred route to market is a concession contract. This will be designed to balance the interests of the Council, the operator, and the users. To secure best value for money:

a) A competitive procurement will be used. This will be based on a concession contract – giving the operator a period to recover its investment and make a profit – where the consideration will be:
    - The LEVI grant (and potentially other grants).
    - The right to install chargers in the Council's car parks, potentially the car parks of partners (see sections 7.8.5 and 7.8.6), other land which is identified for the purpose, and on highways controlled by WNC, and to levy fees for using them.
b) Ideally a single operator will be chosen, but if for technical or operational reasons no one operator can deliver the full range of services required, more

than one will be appointed, with a clear division between them in terms of which areas they have priority over. References to the 'operator' should be read with this in mind.

c) The chosen operator would have first call over the use of the Council's car parks, highways, and land for the provision of chargers. If another operator wished to use any of these, the chosen operator would be given the right to do so, and only it declined would the other operator be allowed to proceed. (In some cases, for example under highway law, it may not always be possible to apply this approach, but it would be applied to the maximum extent legally permissible.)
d) Operator selection would be based on a combination of:
    - Scale and quality of proposed EV charging provision. This would cover both the number of types of chargers, but also their quality, ease of use, openness to innovation and future improvement, and so on.
    - Charges to end users, with lower, clear, and fair charges scoring more highly.
    - Income to the Council, with higher and more reliable income scoring more highly.
e) Prospective operators would also be tested for the credibility of their proposals and on evidence of their ability to carry them out (including their financial standing).
f) The term of the concession period would be set considering feedback from soft market testing, to understand the optimal period in which operators can recover their investment but have either the operator or the Council tied into a contract which no longer serves its purpose effectively.
g) Regular and meaningful self-monitoring would be required, with the Council having direct access to data on charging system performance.
h) Suitable arrangements for the end of the concession period, again informed by the outcomes of soft market testing.

8. Monitoring and Reporting

8.1. Introduction

The Council will regularly monitor and review its progress in delivering EV charging infrastructure and the use of the infrastructure which has been provided. It will make changes where these are needed to deliver an efficient and effective set of arrangements to support the transition to EVs.

8.2. Key Actions

WNC will:

- Implement a robust data collection system to track EV adoption rates, charging point utilisation, and patterns of use.
- Seek input from residents, businesses, and stakeholders to address concerns and leverage local insights in pinpointing suitable locations for EV chargers. Through the "Register your interest in on-street electric vehicle charging

site"[56], the Council aims to gauge local demand and prioritise installation in areas identified by residents.

- Conduct periodic evaluations of the strategy's effectiveness, considering changes in EV adoption patterns, advancements in vehicle and charging technology, and evolving government regulations.

8.3. Performance Indicators

The performance measures set out in Table 10 will be used to judge progress of the strategy.

Table 10: Performance Indicators

Measure	Purpose	Target
Number of EVs Registered	Track the growth in EV registrations, aiming to provide charging infrastructure ahead of projections and demand.	We will meet the demand for 40% of all new vehicle registrations being fully electric or hybrid in 2030. (111,990 out of 277, 949, please see Table 3).
Number of EV Charge points per 100,000 Population	Enhance accessibility by increasing the ratio of EV charge points to population.	Achieve a minimum of 50 EV charge points per 100,000 population by 2030.
Number of EVs Registered per EV Charge point	Ensure improved accessibility by reducing the number of registered EVs per available public EV charge point.	Maintain a ratio of fewer than 30 registered EVs per charge point by 2030
Number of Fast EV Charge points	Increase the number of fast EV charge points available to the public, aligning with the forecasted growth in EV uptake	Achieve a ratio of 1 fast charger per 20 registered EVs by 2030.
Number of Rapid EV Charge points	Expand the availability of rapid EV charge points, focusing on strategic road networks and key transit points.	Achieve a ratio of 1 rapid charger per 50 registered EVs by 2030.

9. Conclusions

Securing the delivery of large-scale EV charging infrastructure is an important part of the Council's aim to achieve a net zero West Northamptonshire by 2045, as well as further improving air quality. This in turn supports regional, national, and global efforts in this regard. This Strategy sets out policies and actions to support the transition to EVs by delivering the necessary chargers, both directly through Council action and in the areas it supports.

In conclusion, this strategy aims to create an ecosystem conducive to EV adoption by strategically deploying charging infrastructure, fostering collaboration, implementing supportive policies, and raising awareness among the public and stakeholders in West Northamptonshire.

10. Glossary

Note on language:

In English, "charge" has different meanings relevant to this Strategy:

- Verb: To make someone pay money for something.
- Verb: To put electric current into a battery to increase the amount of electrical energy it is storing. Typically, this is measured in kilowatts (kW).
- Noun: The amount of electrical energy stored in a battery. Typically, this is measured in kilowatt hours (kWh).

These different meanings can cause confusion – for example, we might say someone paid a charge to charge their car battery, and when it was (fully) charged they drove off. Where possible the Strategy seeks to make the meaning clear, for example by using 'levy a fee for' in place of 'charge' (first point above).

10.1. Appendix A

Term	Definition
Active Travel	Making journeys by physically active means such as walking or cycling.
BEV	Battery electric vehicle
CCC	Committee on Climate Change. A UK advisory body promoting electric vehicles (EVs) to combat air pollution and improve local air quality.
Charge point	A specific outlet or socket within a charging station where an electric vehicle can be connected for charging.
Charge point operator (CPO)	The entity responsible for the operation and management of charging stations, including maintenance, billing, and customer support.
Charging power	The amount of electrical power delivered to an electric vehicle during the charging process, measured in kilowatts (kW).
Charging speed	The rate at which an electric vehicle can be charged, typically measured in kilowatts (kW), or miles of range added, per hour.
DNO	Distribution network operator. This is the organisation which operates the local electricity grid. Currently this is National Grid for West Northamptonshire. See also IDNO.
DPS	Dynamic Purchasing System. It is a procurement method used by organisations, including the Crown Commercial Service, for purchasing goods and services. The DPS allows suppliers to join at any time during its validity.

Term	Definition
EEH	England's Economic Heartland. A sub-national transport body working on electric vehicle (EV) charging infrastructure and aligned with the UK Government's Taking Charge: The Electric Vehicle Infrastructure Strategy.
Electric vehicle (EV)	A vehicle that is powered by an electric motor and relies on electricity stored in batteries for propulsion.
Fast charging	Charging at a rate of between 8 and 50 kW per hour.
FFR	Firm Frequency Response. It refers to a grid service provided by certain technologies, including vehicle-to-grid (V2G) chargers, to help stabilise the electrical grid by adjusting power output in response to fluctuations in demand and supply.
IDNO	Independent distribution network operator. An operator of a separate electricity distribution network than the main DNO for an area.
Kilowatt-Hour (kWh)	A unit of energy equivalent to one kilowatt (1 kW) of power expended for one hour.
kt CO2e	Thousand metric tons of carbon dioxide equivalent. It is a unit used to measure greenhouse gas emissions, representing the equivalent amount of carbon dioxide emissions based on the global warming potential of other greenhouse gases.
LEVI	Local Electric Vehicle Infrastructure, refers to community-level facilities to support electric vehicle adoption and usage.
Liberty	A company responsible for the operational and maintenance duties of electric vehicle charging infrastructure, including the management of charging points and services.
Mt CO2e.	Million metric tons of carbon dioxide equivalent. It is a unit used to measure greenhouse gas emissions, accounting for the global warming potential of different gases relative to carbon dioxide.
Net zero	Achieving a balance between greenhouse gas emissions produced and removed from the atmosphere.

Term	Definition
NPPF	National Planning Policy Framework. It is a document published by the UK government that sets out national planning policies for England, guidance for local planning authorities and decision-makers on planning decisions and policies related to land use and development.
OZEV	Office for Zero Emission Vehicles. A UK government office promoting low emission vehicles and supporting electric vehicle infrastructure and grants.
Public-Private Partnership (PPP)	Collaboration between government entities and private sector organisations to develop, finance, and operate electric vehicle infrastructure projects.
Range anxiety	Refers to the apprehension or worry that an electric vehicle may not have enough battery charge to reach its intended destination or a suitable charging station.
Smart charging	A strategy that utilises advanced technologies to optimise charging efficiency, load management, and grid integration.
TRO	Traffic regulation order.
Ultra-rapid charging	Charging that takes place at 150kW and over.
V2G	Vehicle-to-grid, Technology enabling electric vehicles to discharge electricity from their batteries back into the electrical grid.
VAT	Value Added Tax, a consumption tax added to the cost of most goods and services in the UK.
VCIS	Vehicle Charging Infrastructure Solutions. It refers to a framework or initiative aimed at developing and managing infrastructure for charging electric vehicles.
VPACH	Virgin Park and Charge project. A trial initiative by the former Northamptonshire County Council to install on-street chargers across Northamptonshire. Each site features 22kW Fast Chargers managed by Liberty Charge.

10.2.Appendix B: Action Plan

This section sets out our ongoing carbon reduction activities for WNC. This plan will undergo regular review and refinement as part of the overall management review cycle. The abbreviations for service areas are 'A&E' for Assets & Environment.

No.	Service areas	Action	Policies supported	Target delivery date	Resources
1.	A&E	Strategy adopted	All	2024	Staff time.
2.	A&E	Business case for LEVI capital funding submitted	1, 3	2024	Staff time, existing grant funding.
3.	A&E	LEVI capital funding application approved	3	2024	None.
4.	A&E	WNC Fleet Climate Strategy adopted	10	2024	Staff time.
5.	A&E	Concession contract let for the deployment of EV infrastructure	2, 3, 4, 7, 8	2025	Staff time, existing grant funding.
6.	A&E	At least 200 public EV chargers deployed	2, 3, 4, 7, 8, 9	2025	Staff time, further grant funding.
7.	A&E	EV chargers available in all suitable WNC car parks	2, 3, 4	2026	Staff time.
8.	A&E	Completion of initial public EV charger roll-out	2, 3, 4, 5, 7, 8, 9, 10	2027	Staff time, further grant funding.

10.3.Appendix C: References

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