Appendix B

Countywide Electric Vehicle Engagement Analysis Report

May 2024

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Executive Summary

1.1 Introduction

This report presents the findings and sets out Leicestershire County Council's (LCC) response to a Leicestershire wide Electric Vehicle (EV) engagement exercise, which ran for 7 weeks from October to end of November 2023.

The engagement exercise directly engaged with the public and local representatives including elected County Councillors, District Council Councillors and Parish Councils.

It comprised of two elements:

1. ***Online Survey***:
   To allow current EV drivers to provide feedback about their charging habits and future EV drivers about their potential concerns.
2. ***Interactive 'Social Pinpoint' Map***:
   To allow residents, businesses, parishes and members to place a marker on a map in the county where they would like to see a chargepoint.

Both elements of the engagement exercise were advertised via LCC's Have Your Say webpage, newspaper articles in the Harborough Mail, Coalville Times, Melton Times and Loughborough Echo, Social media posts on Facebook, Instagram, LinkedIn and Nextdoor as well as interviews with Cllr Ozzy O'Shea (Lead Member for Highways Transportation and Flooding) on East Midlands Today and Fosse 107.

Local representatives were engaged directly through email circulation to Local County Councillors, the Leicestershire EV Charging Working Group including District Council Officers, and Parish Councils.

1.2 Main Findings

The Online Survey received 540 responses. 53% of which were from current EV owners and 36% reported an intention to own an EV in the future.

Through the Interactive Map, 548 potential chargepoint locations were identified in Leicestershire, 55% of which were located at destinations and 27% in residential areas.

1.2.1 Charging Habits and Desired Provision

Home charging

Home charging was identified as the most popular form of charging provision by both current and prospective EV owners. 81% of current EV owners report charging their

vehicle on private property. 82% of prospective EV owners reported wanting to be able to charge at home on private property. The second most popular charging location was in public car parks such as supermarkets and District Council owned car parks.

55% of residents who didn't own an EV identified not being able to charge at home as a barrier to purchasing or leasing an EV. This shows that a lack of access to home charging is a primary barrier to purchasing or leasing an EV for many.

On-Street Charging

It is important to note that the vast majority of current EV owners have access to home charging so the rate of desire for on-street charging provision is lower. 60% of current EV owners who do not have home charging available indicated they would want an on-street charging provision on their street and 38% would want on-street chargepoints within a few streets of their home. This demand is consistent with prospective EV owners. 85% of prospective owners who indicated they would not want to charge at home would want an on-street charging provision near their home.

Off-street public car parks and hubs

49% of EV owners reported that they are currently using facilities within public car parks to charge their vehicles. 64% of current EV owners, also reported wanting to be able to charge in public car parks, which is the most sought-after charging solution from EV owners. This shows public car park charging is a very popular option already, but there is evidence of demand to see this option expanded further. 77% of prospective owners also want to be able to charge within public car parks indicating that this is seen as a popular choice by many. This combined demand makes public car park charging the most popular charging option from respondents aside from home charging.

This is likely due to the often-faster charging speeds available from chargepoints within public car parks. There is also a convenience factor to consider as residents often want to charge while completing other day to day tasks such as shopping, going to pubs/restaurants and visiting Country Parks.

59% of current EV owners reported that they would like to charge within a charging hub with 20% reporting they already do so. 50% of prospective EV owners also reported wanting to charge in charging hubs. There is a large amount of interest in the expansion of charging hubs as a possible charging option. This again, is likely due to higher powered chargepoints being more readily available in charging hubs, but also due to multiple bays being available as well as the increased security of a residents parking their vehicle in a parking area instead of parking directly on the highway.

80% of current and prospective EV owners reported being willing to use a charging hub with multiple bays. This figure is greater than the proportion of residents directly reporting they would like to charge in charging hubs. This indicates some hesitation to the use of charging hubs likely due to the lack of familiarity with the concept as there are currently few examples in Leicestershire.

It is important to note that all of the forms of charging provision provided in the survey received interest from respondents. None of the charging provisions received less than 20% of interest from either current or prospective EV owners. These locations included

public car parks, charging hubs, public transport links, private car parks, motorway services, petrol stations, at work, on private property and on-street. This demonstrates that respondents are interested in a range of charging solutions.

1.2.2 Chargepoint Locations

Geographical coverage

From the Interactive Map, suggested chargepoint locations were primarily located within market towns, along the A6 North of Leicester, also known as the "Soar Valley Corridor", and in settlements which border the city such as Oadby, Wigston, Glenfield, Blaby and Scraptoft. The majority of suggested locations are within the primary settlement areas of Leicestershire.

72% of the suggested chargepoint locations were in urban areas. This is expected as urban areas often contain more destination locations such as major supermarkets and shopping areas. The current off-street hubs such as district owned car parks are also commonly located within urban areas. It is however important to note that 28% of suggested chargepoint locations were in rural areas. This shows that any LCC provided charging provision cannot solely cater for urban areas and that rural locations must also be considered.

Destinations

56% of suggested chargepoints were located at destinations. This is likely informed by the majority of current EV owners having access to off-street parking therefore requesting destination chargepoints more frequently.

Destination chargepoints benefit the wider community as they promote the usage of local businesses and are often more powerful chargepoints with faster charging speeds. Destination locations are also often in centralised areas within the community providing an alternative charging provision local to residents.

88% of the suggested destination locations were on private land and 71% were in urban areas. As the majority of destination locations are on privately owned land, the increase of this type of charging provision will likely be driven by private landowners.

Off-street Public car parks and hubs

14% of the suggested chargepoint locations were located in off-street hubs. There was a total of 76 suggestions in 58 car parks. All of these locations were on land primarily owned by District Councils, Parish Councils, and a number of local village halls.

District off-street car parks and hubs serve a similar purpose to many destination chargepoints as they are usually located within centralised locations within settlements. This generally offers a relatively high-powered charging option for those accessing local services such as healthcare and retail.

1.2.3 Chargepoint Features

Accessibility

Respondents primarily reported accessibility to be the most important chargepoint feature. This covers the usability of the chargepoints, having access to a range of charging locations and speeds, as well as having access to multiple chargepoints at a single location to ensure access to a chargepoint is available when its required.

Over 90% of current and prospective EV owners reported that reliability, ease of payment, competitive pricing, able to charge quickly and being able to charge all EV types are important for chargepoints.

The distance a resident is willing to walk to use a public on-street chargepoint is also an important factor to consider. 74% of residents who currently own or expect to own an EV reported being happy to walk up to 2 minutes to an on-street chargepoint with 52% reporting being willing to walk up to 5 minutes. However, 26% respondents reported only being willing to use an on-street chargepoint that was on their own street. This pattern is consistent between the respondents who have access to off-street parking and those who do not. This shows that residents want on-street chargepoint provision to be as easily accessible from their homes as possible. This is likely due to the convenience but could also account for factors such as safety when using the chargepoint and concerns from a resident about parking their vehicle away from their home. It is important to note that 76% of prospective EV owners identified concerns about charging in a public place as a barrier to purchasing an EV. Therefore on-street public chargepoints need to be local to residents' while being attractive to use.

The most popular charging options identified by residents are those which are most local to the resident. There is significant demand from both current and prospective EV owners who also identified a lack of local chargepoints is a primary barrier to purchasing an EV. The introduction of EV chargepoints in residential areas is a primary method to addressing these concerns.

Chargepoint speed

83% of current EV owners and 78% of prospective owners want rapid charging provision to form a part of their charging solution. Around 50% of both current and prospective owners consider rapid charging to be the sole form of public charging that they require. Overall, rapid charging is the most popular charging speed.

34% of prospective owners reported wanting standard charging to be a part of their charging solution. 47% of prospective owners also reported wanting on-street charging near to their homes to be provided, when home charging is unavailable to them. There is demand for a slower charging provision which would enable residents without access to home charging to be able to charge their vehicles.

42% of current EV owners and 33% of prospective owners consider fast chargepoints to be a part of their charging requirements. Fast chargepoints are seen as a less attractive charging option than rapid chargepoints but is a slightly more popular option than standard chargepoints. It is likely that if rapid chargepoints were not an option fast charging would receive a higher rate of interest.

Ease of use

80% of respondents identified concerns about using EV chargepoints and associated payment methods. This implies people want chargepoints to be intuitive and easy to use with a consistent charging payment method, such as contactless payment.

Safety

76% of prospective owners expressed concerns about charging in public places and on a public network. It should therefore be a priority that the charging process is straightforward and intuitive for users and that charging infrastructure is located in secure locations, so that users feel safe using the public charging network, at all times of day and night.

Parking capacity

Respondents have reported wanting multiple parking bays to be available at EV chargepoints to increase the access they have to chargepoints. This is demonstrated by the high rates of interest for charging hubs and public car park charging options. Therefore, installing multiple chargepoints in the same location should be considered.

Overall, residents want a local, competitively price chargepoint provision that prioritises ease of use and reliability.

1.2.4 Barriers to EV Ownership

90% of non-EV owners reported that the cost of the vehicle was the largest barrier to purchasing an EV. This barrier is expected to reduce over time through the increase of the second-hand market, an increased number of EVs being manufactured and the increase of leasing market for EVs.

The second largest reported barrier was the lack of local charging options available with 80% of prospective owners reporting this as a concern compared to 55% of non-EV owners who do not plan to buy an EV. As expected, this indicates that the lack of charging infrastructure is of greater concern to residents planning to purchase an EV within the next 5 years than those with no current plans to purchase an EV.

The improved provision of EV chargepoints in residential areas will likely reduce the prevalence of this concern. This is shown by 85% of prospective EV owners that do not want to charge at home, want a form of on-street charging provision local to their home.

Many of the other barriers to purchasing an EV are also likely to be solved by increased chargepoint provision. This includes concerns with awareness of where to charge, the driving range of vehicles and concerns about the availability of chargepoints.

As expected, respondents who are considering purchasing an EV in the next 10 years feel there are less barriers to use than respondents who are not considering purchasing an EV. This shows the perceived reduction in barriers to purchasing an EV would directly lead to more residents being willing to purchase an EV.

1.3 Response to Engagement Feedback

In response to engagement feedback, listed below are a series of suggested recommendations LCC will consider as part of the Authority's emerging EV Charging Strategy and any associated public chargepoint delivery plans.

1.3.1 EV Survey

- Consider actively tackling the identified barriers to purchasing an EV that are within LCC's control as the Local Highway Authority, such as the lack of local charging options available within the highway.
- Provide EV chargepoints on land LCC own or maintains, i.e., Public Highway and LCC owned sites, to help expand the network of public charging network across the county.
- Provide a form of on-street chargepoint provision to residents without access to off-street parking to replicate home charging as closely as possible.
- Focus the placement of chargepoints in more densely populated urban areas while ensuring rural areas are also catered for.
- Provide a form of high powered, rapid charging provision for residents.
- Explore, and facilitate where applicable, the provision of a form of charging hub provision for residents at car parks in centralised locations to the community.
- Adopt chargepoint design specifications and standards for EV infrastructure within the public highway to ensure chargepoints are accessible, easy to use and in attractive, safe locations.
- Encourage the provision of off-street hub chargepoints by working alongside District and Parish Councils.
- Explore opportunities to embrace new technology and other innovative charging solutions such as a cross-pavement charging solutions to allow residents to access an alternative form of home charging.
- Consider the placement of multiple chargepoints at a location to account for future demand.

1.3.2 Social Pinpoint Map

- Prioritise the installation of charging infrastructure in locations identified by residents via the Countywide survey that align with the scope of the EV Charging Strategy, subject to grid capacity, impact on other highway users, availability of off-street parking and availability of funding.
- Where possible, share residents suggested chargepoint locations with the relevant private landowners.
- Continue to engage with residents via LCCs EV webpage, to understand the demand for chargepoints on Leicestershire's highways.

2. Social Pinpoint Map

2.1 Introduction

The primary aim of the Social Pinpoint Map was to provide an opportunity for current and prospective EV owners to suggest possible chargepoint locations within Leicestershire. Respondents were also able to provide comments alongside their suggested locations to give further context. Each of the suggested chargepoint locations could be liked and disliked by other respondents to indicate whether other residents supported the location.

Respondents could also provide likes and dislikes to existing chargepoint facilities across Leicestershire expressing the main positive and negatives of the placement and features of existing EV chargepoints.

2.2 Findings (Overview)

A total of 594 pins were placed by respondents on the map, see **Figure 1**.

- 567 of these pins indicated a suggested location for a new EV chargepoint.
- 16 pins were placed to indicate something the respondent liked. These pins were placed in locations of existing or planned chargepoints to provide positive feedback.
- 11 pins were placed to indicate an existing or planned chargepoint that the resident disliked or had concerns with.

Of the 594 pins placed by respondents:

- 572 were placed within Leicestershire.
- The remaining 22 pins were placed within the City boundary.

Due to the format of the Social Pinpoint Map suggested chargepoint locations could be suggested multiple times. The majority of pins were in individual locations however a small number of sites were identified multiple times.

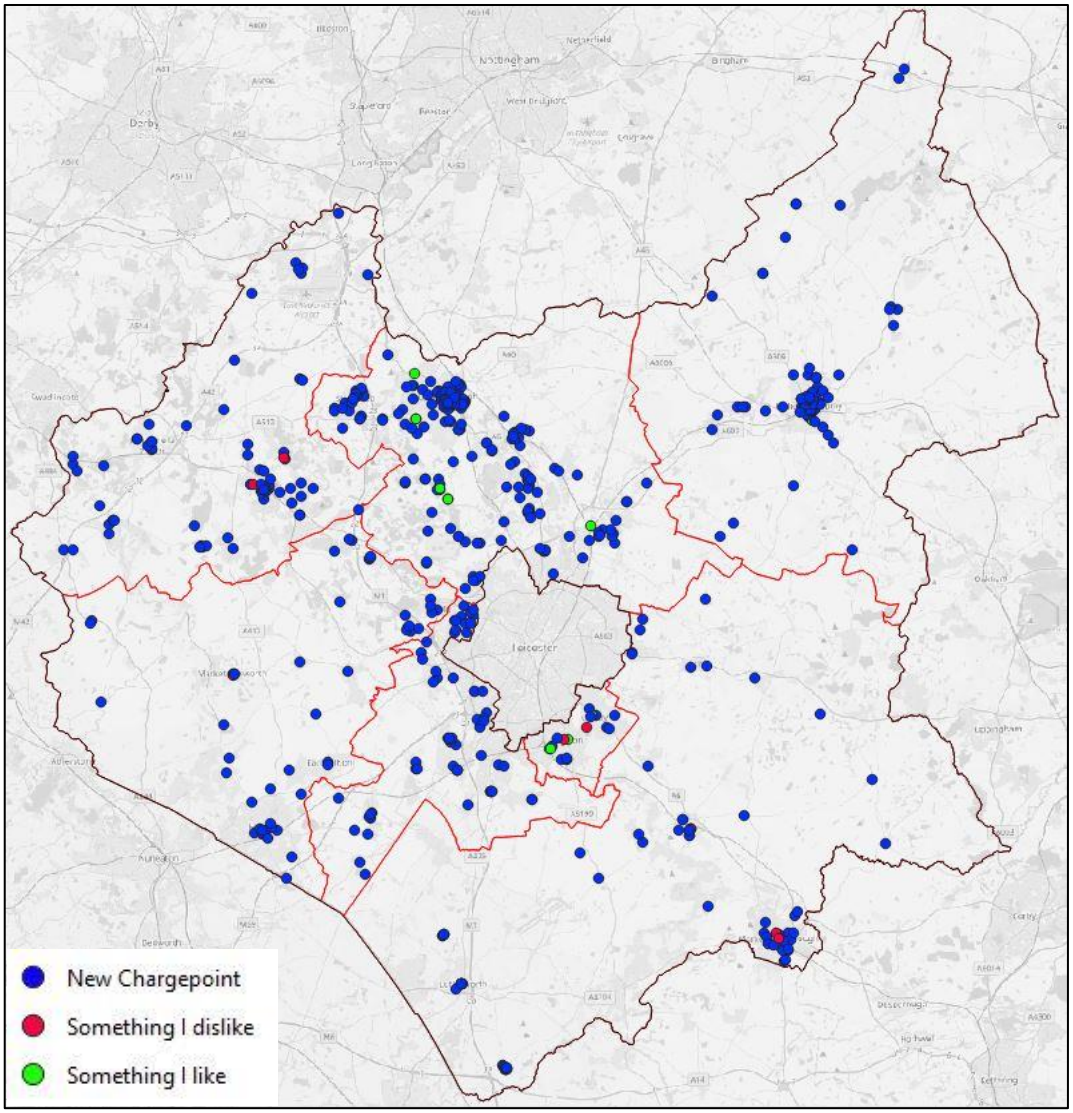

Figure 1: All Social Pinpoint pins placed by residents during the engagement.

- Blue pins indicate the suggested chargepoint locations.
- Green pins indicate a location where the respondent liked something.
- Red indicates where a respondent disliked something.

548 of the 572 pins placed within Leicestershire indicated suggested locations for new chargepoints. There were 13 likes and 11 dislikes for existing chargepoint across Leicestershire (**Figure 2**).

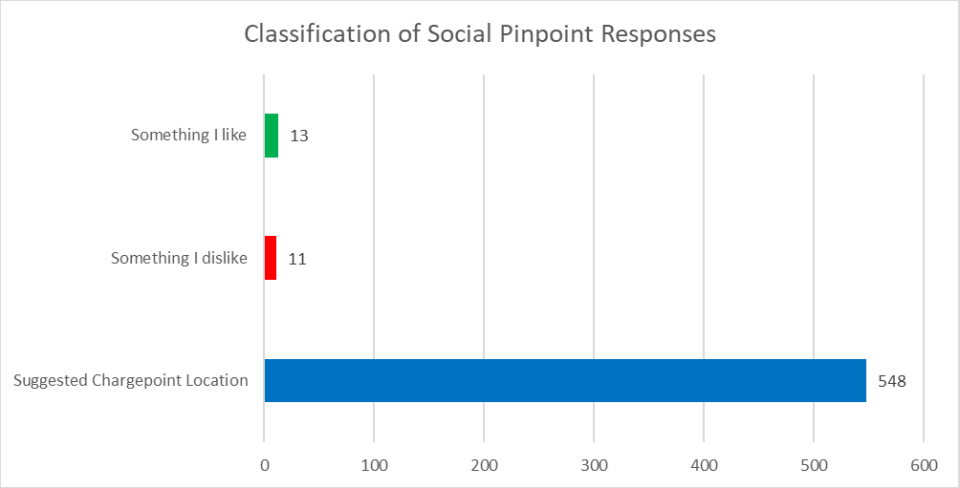

Figure 2: Category of responses received via Social Pinpoint.

2.3 Findings (In Detail)

The following sections examine in further detail, the suggested chargepoint locations received from respondents.

2.3.1 Land Ownership/Status

The suggested chargepoint pins were located across both publicly owned and privately owned land. For the purposes of this analysis, public land has been defined as land which LCC owns or is responsible for as the Local Highway Authority. This is a combination of highway land (i.e., streets) and LCC owned sites (i.e., car parks). Private land has been defined as any land that is owned by a third-party organisation or resident. This includes district and parish car parks, unadopted highway and other third party owned sites such as supermarkets.

Of the 548 suggested chargepoint locations in Leicestershire 365 were on privately owned land (67%) and 183 were located on publicly owned land (33%), see **Figure 3.** Of these 183 locations 134 were within the highway.

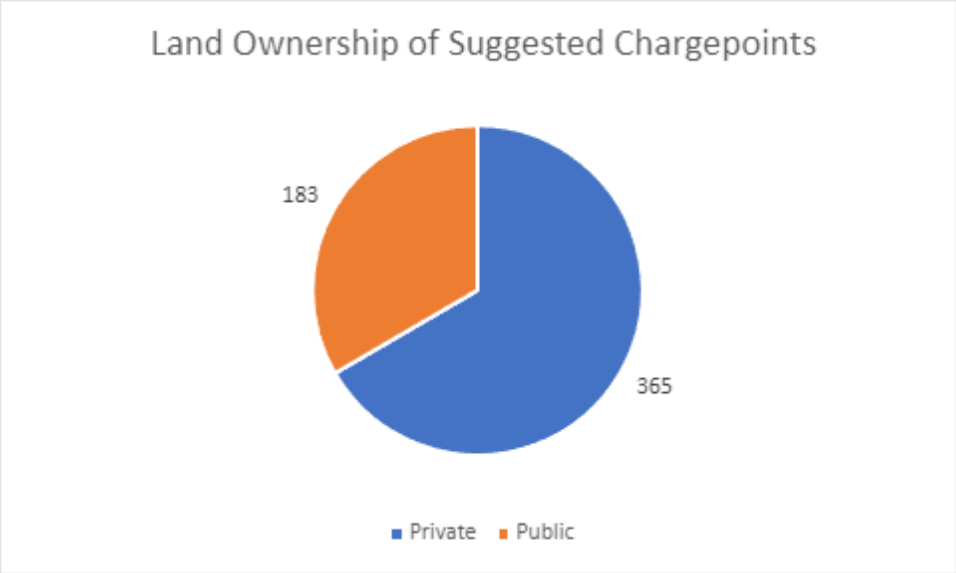

Figure 3: Categorisation of suggested chargepoint locations by placement on public or private land.

2.3.2 District

The split of suggested chargepoint locations by District is shown in **Figure 4** and is as follows:

- 208 in Charnwood (38%)
- 75 in Melton (14%)
- 72 in Harborough (13%)
- 70 in North West Leicestershire (13%)
- 62 in Blaby (11%)
- 49 in Hinckley and Bosworth (9%)
- 12 in Oadby and Wigston (2%)

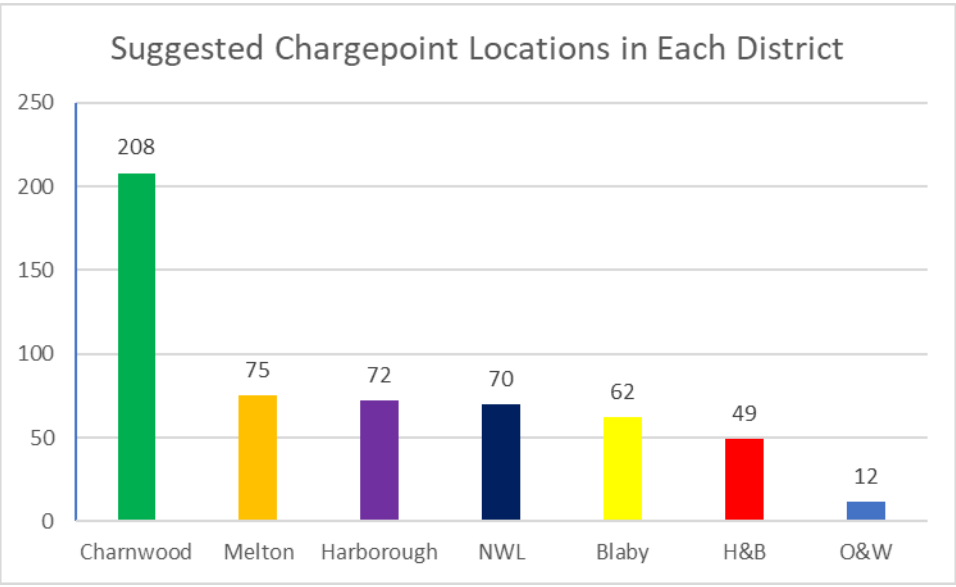

Figure 4: Number of suggested chargepoint locations by District.

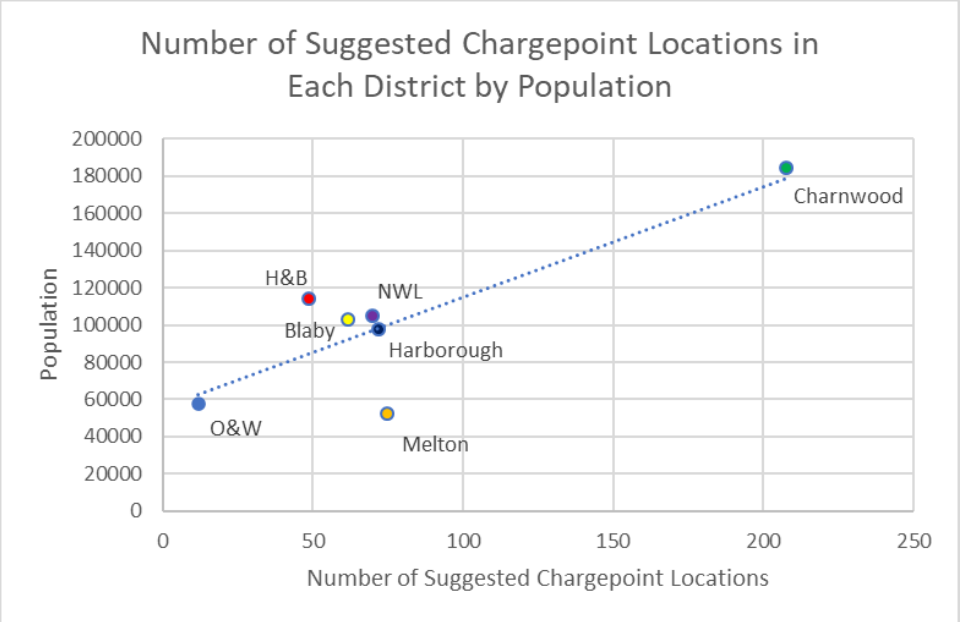

Figure 5: The number of suggested locations in each district compared to the districts population.

Figure 5 shows a comparison between the number of suggested chargepoint locations and the population of the district. Generally, there were more suggested chargepoints locations in districts with a higher population. Four districts with similar populations (Hinckley & Bosworth, North West Leicestershire, Harborough and Blaby) received a similar number of suggested chargepoint locations. Melton received a higher proportion of suggested chargepoint locations relative to its population size. Charnwood was the most popular district receiving over a third of suggested chargepoint locations.

To analyse which districts received more suggested chargepoint locations relative to their population, the percentage of each district total suggested chargepoint locations was compared to the districts population percentage of Leicestershire's total population in **Figure 6.**

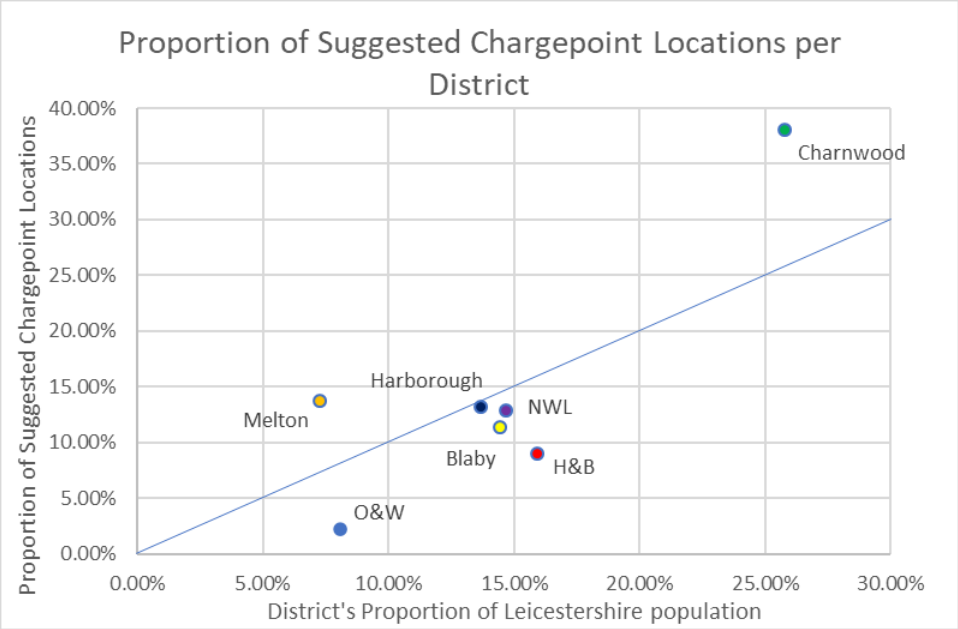

Figure 6: Proportion of suggested chargepoint locations in each district (Source: Census 2021 Data)

Districts above the line received a higher proportion of suggested chargepoint locations compared to its population and Districts below the line received a smaller proportion of suggested chargepoint locations compared to its population.
Charnwood and Melton both received more suggested chargepoint locations relative to its population. Harborough, North West Leicestershire and Blaby received an expected number suggested chargepoint locations compared to its population size. Hinckley & Bosworth and Oadby & Wigston were both underrepresented by suggested chargepoint locations compared to their population's sizes.

2.3.3 Settlements

Of the 548 suggested chargepoint locations, the primary settlements within Leicestershire (Loughborough, Melton Mowbray, Oadby and Wigston, Market Harborough, Hinckley, Coalville, and Ashby-de-la-Zouch) received a combined 210 suggested locations, see **Table 1**, making up 38% of all suggested chargepoint locations in Leicestershire.

Settlements	No. Of Selections
Loughborough	83
Melton Mowbray	46
Coalville	26
Shepshed	22
Market Harborough & Mountsorrel	20
Hinckley	14
Glenfield & Swinford	12
Rothley	11
Barrow-upon-Soar	10
Braunstone & Syston	9
Ashby-de-la-Zouch	8

Lutterworth	7
Enderby, Kibworth Beauchamp, Oadby, Ratby, Whetstone & Wigston	6
Anstey, Markfield, Measham, Narborough, Quorn, Woodhouse Eaves	5
Arnesby, Asfordby, Ashby Folville, Bardon, Barsby, Barwell, Belton, Billesdon, Birstall, Blaby, Bottesford, Burton Lazars, Castle Donington, Copt Oak, Cosby, Countesthorpe, Cropston, Dadlington, Desford, Earl Shilton, East Goscote, Fleckney, Frisby on the Wreake, Great Bowden, Great Dalby, Great Glen, Groby, Hallaton, Harby, Hathern, Hose, Houghton on the Hill, Huncote, Hungarton, Ibstock, Kegworth, Kibworth Harcourt, Kirby Muxloe, Kirkby Mallory, Leicester Forest East, Long Clawson, Long Eaton, Market Bosworth, Medbourne, Moira, Nether Broughton, Newbold Verdon, Newtown Linford, Normanton le Heath, Norton Juxta Twycross, Oakthorpe, Queniborough, Rearsby, Sapcote, Scraptoft, Sharnford, Shearsby, Sheepy Magna, Sileby, Somerby, Stanton under Bardon, Stathern, Stoke Golding, Stoney Stanton, Swannington, Thornton, Thurcaston, Thurmaston, Thurnby, Tugby, Tur Langton, Waltham on the Wolds, Whitwick	Less than 5

Table 1: Number of suggested chargepoint locations in Leicestershire's settlements.

2.3.4 Rural / Urban split

To understand the nature of the suggested chargepoint locations, each of the 548 locations within Leicestershire were categorised by whether they were urban or rural. The basis of the urban and rural classification was decided using the Settlement Hierarchies within each District Councils Local Plan.

These settlement hierarchies are documents which profile each settlement within a district to understand its key characteristics and existing service provision.

Each of the 7 District Councils used different terminology to describe the separate settlement categories. The terminology used to describe each category defined whether it would be considered as urban or rural. As expected, any category of settlement containing the term "Urban" or "Rural" was classified as urban and rural respectively. Settlement categories which contained terminology such as "Service Centre" or "Key Centre" were considered as Urban. However, categories such as Hinckley & Bosworth's "Key Rural Centres," Melton's "Primary and Secondary Rural Service Centres" and Harborough's "Rural Centre" were considered as Rural due to containing the term "Rural." Categories defined as "Villages" were considered to be Rural.

154 (28%) suggested chargepoint locations were in rural areas. The remaining 394 (72%) locations were in urban areas. As shown in **Figure 7** below, the urban sites were primarily located in the market towns and settlements along the 'Soar Valley

Corridor' surrounding the A6 between Leicester and Loughborough, and near to the city boundary.

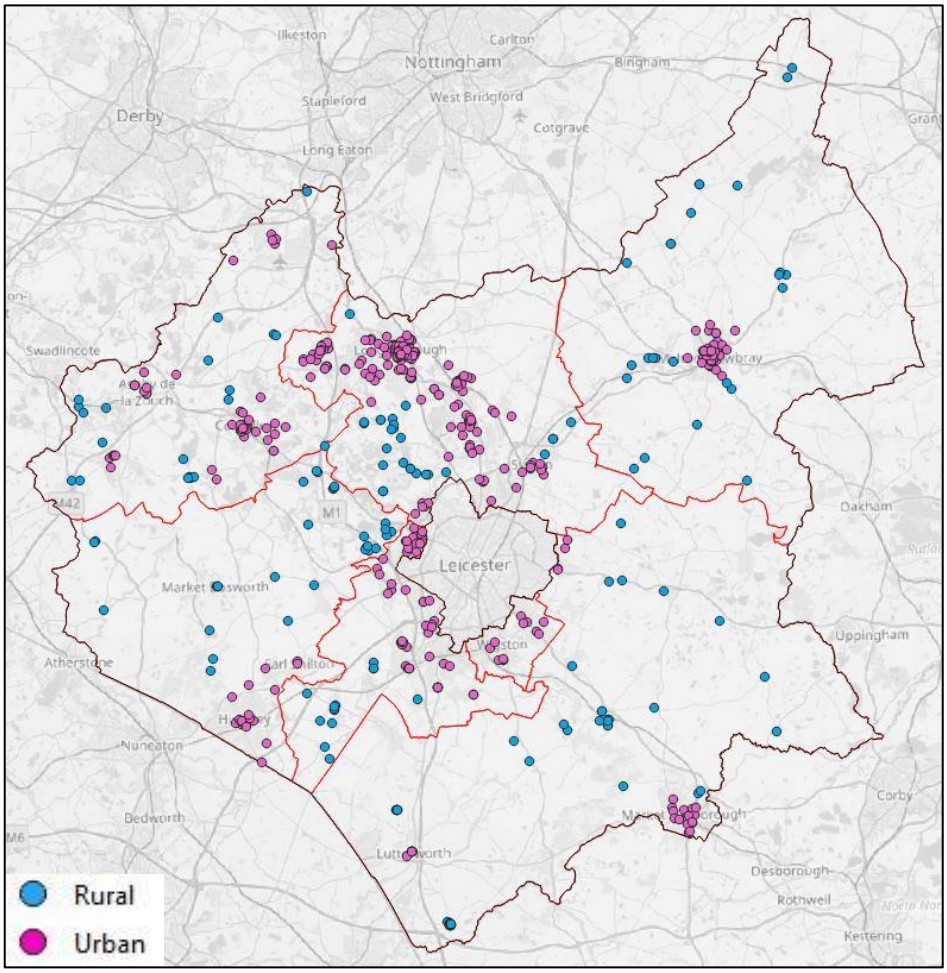

Figure 7: Classification of suggested chargepoint locations by rurality

2.3.5 Chargepoint setting.

Each of the suggested chargepoint locations were categorised into chargepoint settings, as shown in **Table 2**.

Setting	Description
Home	Chargepoint at a resident's home in a private driveway/garage or allocated space. Typically, long overnight stay where a vehicle is parked for several hours.
On-Street	Chargepoint to serve vehicles parked on-street. Predominantly for residents for overnight charging. Could be standalone chargepoints or integrated into existing street furniture (e.g., lampposts). May also include charging solutions using the homeowner's own electricity supply (e.g., covered footway cable channel).

Off-Street Hubs	Chargepoint in a convenient communal public parking area. Provides quick and accessible charging at a central location within a local area. Addresses lack of public charging. A range of charging requirements can be provided for, from rapid to overnight.
Enroute	Chargepoints in a location on or near the main road network, e.g. Motorways, Trunk Roads and local A and B road corridors. Provides quick access, allowing vehicles to complete their journey.
Destination	Chargepoints at a destination at the end of an outward journey. May serve all EV users, providing 'top up' charging over a few hours. Addresses lack of public charging and range anxiety concerns
Workplace	Chargepoint at a workplace, in a private workplace car park
Depot	Chargepoint at a private business location for EVs used commercially to transport goods, employees, and the public (including buses, HGVs, and public sector fleets). Typically, this is done where vehicles are parked overnight

Table 2: Chargepoint settings.

A breakdown of the locations by chargepoint setting is shown below in **Table 3** and on the map in **Figure 8**.

Chargepoint setting	Number of suggestions
Destination	301 (55%)
On-street	147 (27%)
Off-street Hub	76 (14%)
Enroute	15 (3%)
Workplace	9 (2%)
Home	0 (0%)
Total	548

Table 3: Number of suggested locations by chargepoint setting.

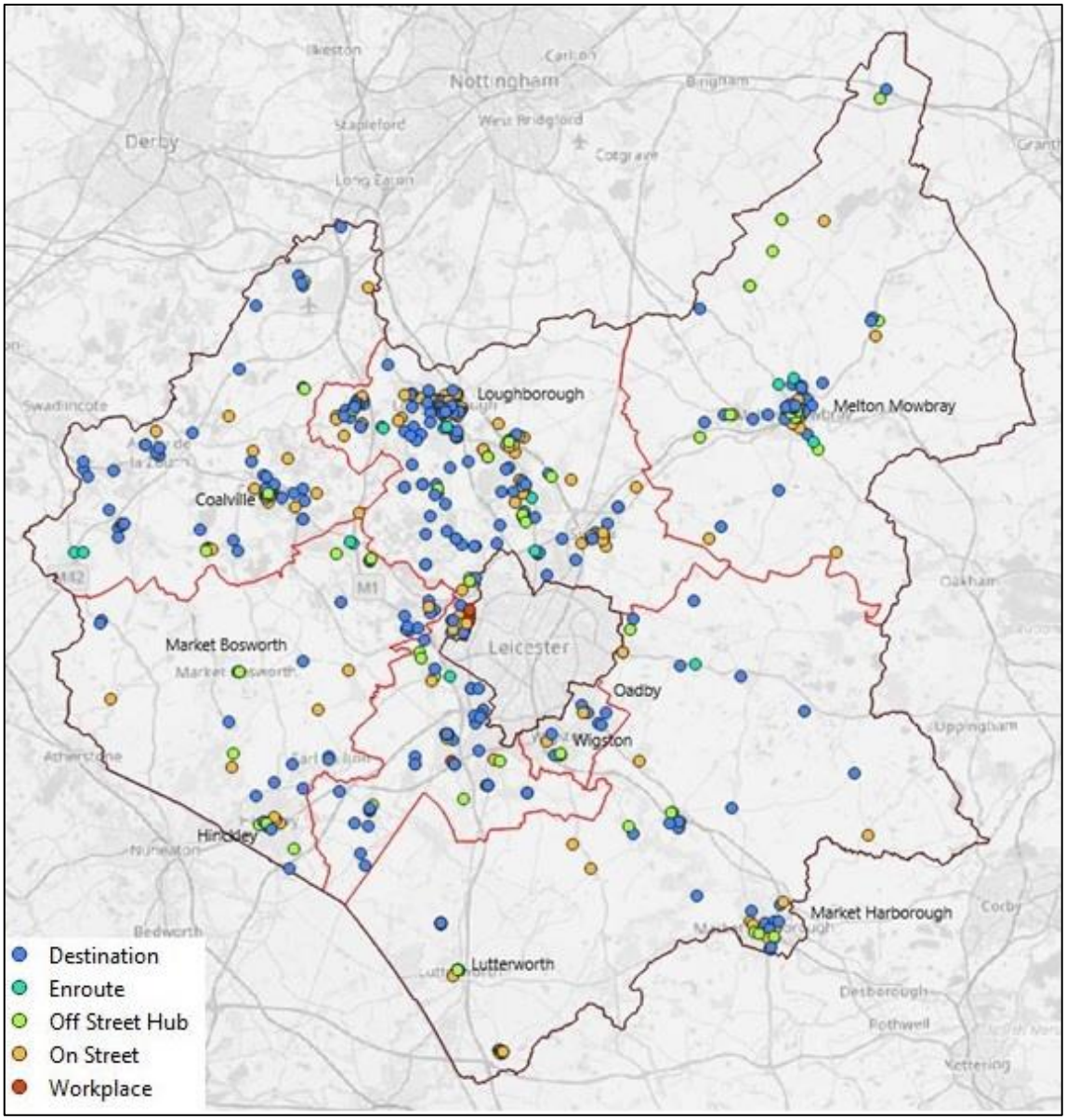

Figure 8: Categorisation of respondent suggested chargepoint locations.

Further details are set out below with respect to the suggested locations and the chargepoint setting.

a) Home:

Consideration was given to any comments provided on suggested chargepoint locations, however no comments provided by respondents requested chargepoints specifically at their home (e.g., driveway or garage). Therefore, any suggested locations placed in residential areas have been defined as on-street locations.

b) On-Street:

147 suggested chargepoint locations were categorised as on-street. Of these 147, 134 were located within the highway, maintained by Leicestershire County Council as the Local Highways Authority.

13 suggested locations were located on private unadopted streets. Every on-street location was located within a residential area.

c) Off-Street Hubs:

76 pins were placed within off-street Hubs; 43 of which were located in District Council owned carparks and 33 at Parish Council owned and village hall car parks, as shown in **Figure 9**.

The 76 pins were located at a total of 58 off-street hub locations (including 31 individual District Council owned car parks, along with 27 individual Parish Owned or village hall car parks, as shown in **Figure 10**.

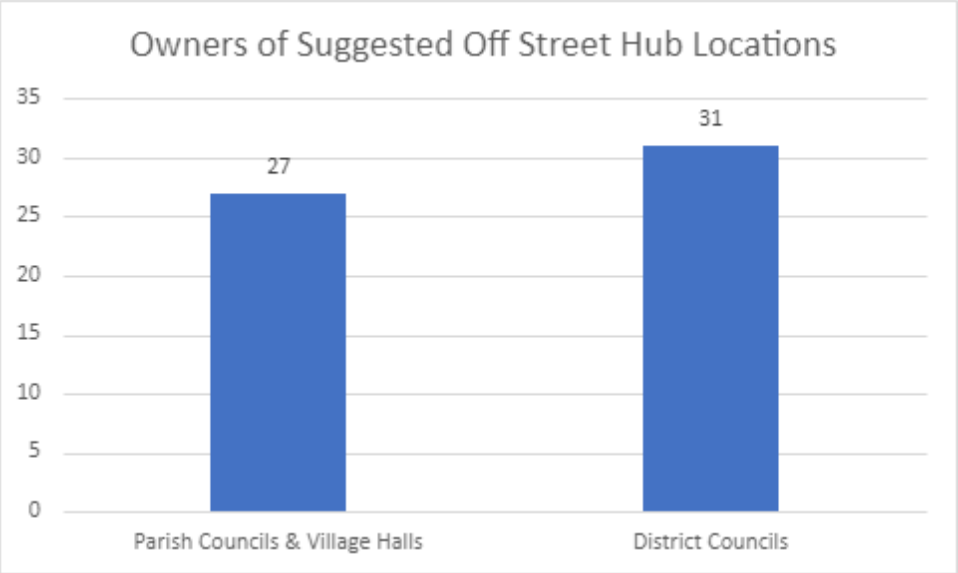

Figure 9: The landowners of the individual off-street hubs identified by respondents.

Of the 58 off-street hub locations identified the vast majority have no EV charging infrastructure. A small number however, currently do, indicating a desire for further provision.

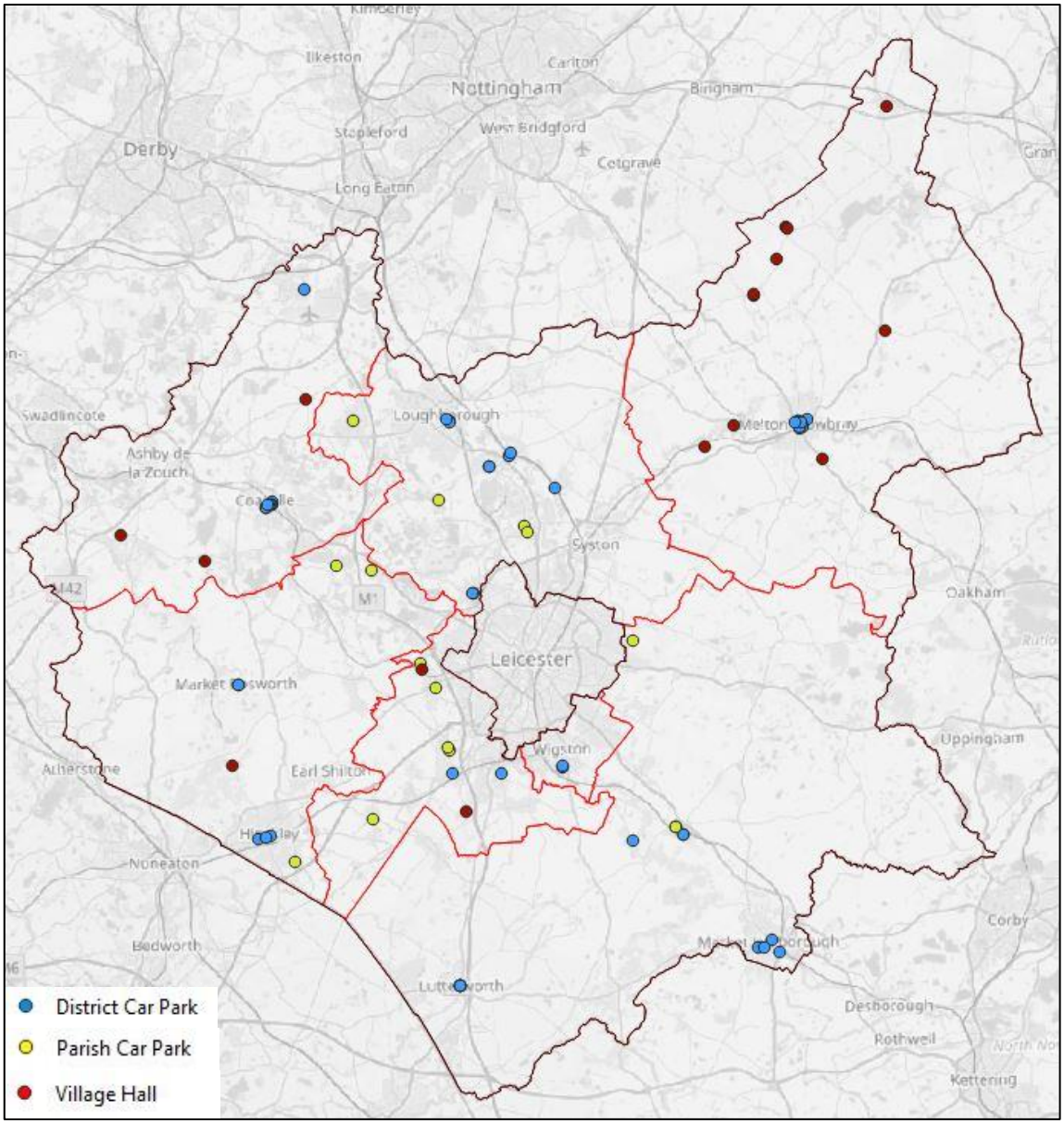

Figure 10: The categorisation of suggested Off-Street Hub chargepoint locations.

d) Destination:

301 (56%) of the suggested chargepoint locations were categorised as destinations. Destinations make up a majority of the suggested chargepoint locations.

As shown in **Figure 11**, the most popular destination was Supermarkets with 69 suggestions. The second most popular destination was outside or nearby to shops and local businesses with 43 suggested locations. 30 suggested chargepoint locations were at Country Parks across Leicestershire such as Bradgate Park (6 times) and Beacon Hill (4 times). Pubs and Restaurants were suggested as locations for chargepoints 25 times. 24 suggested locations were at amateur and semi-professional sports grounds including Cricket, Rugby, Football and Tennis clubs. 13 suggested locations were at healthcare facilities and 13 suggested

locations were at transport hubs including the Park & Ride sites to enable connection to other forms of transportation.

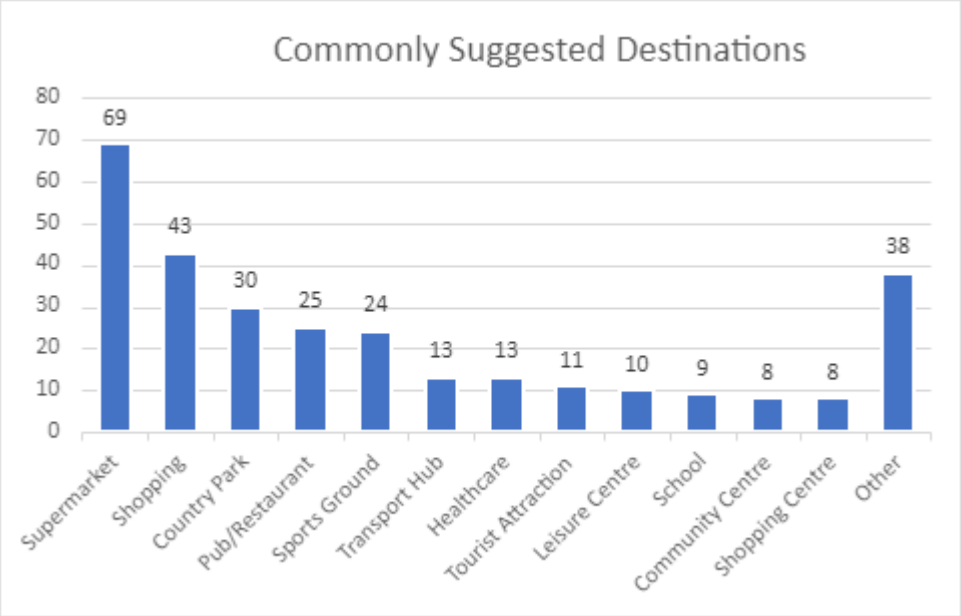

Figure 11: Primary respondent suggested destination chargepoint locations.

A graph and table indicating all the suggested destination chargepoint locations has been provided below in **Figure 12**.

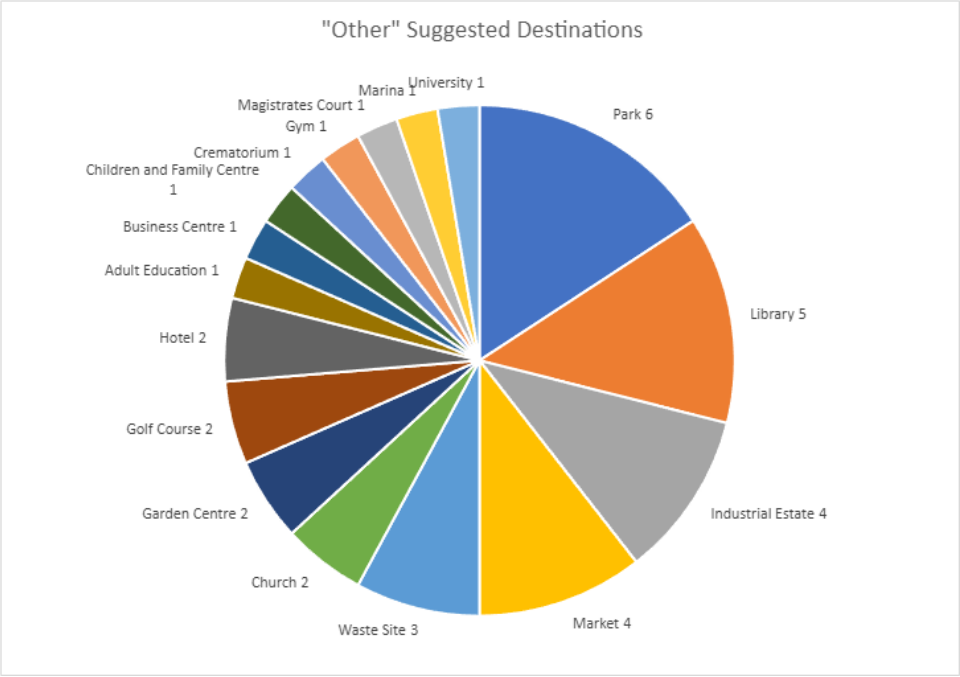

Figure 12: All other respondent suggested destination chargepoint locations.

As shown in **Figure 13** below, 264 of the suggested destination were located on private land. 37 suggested locations were located on public land including 7 suggested locations on Leicestershire County Council owned land.

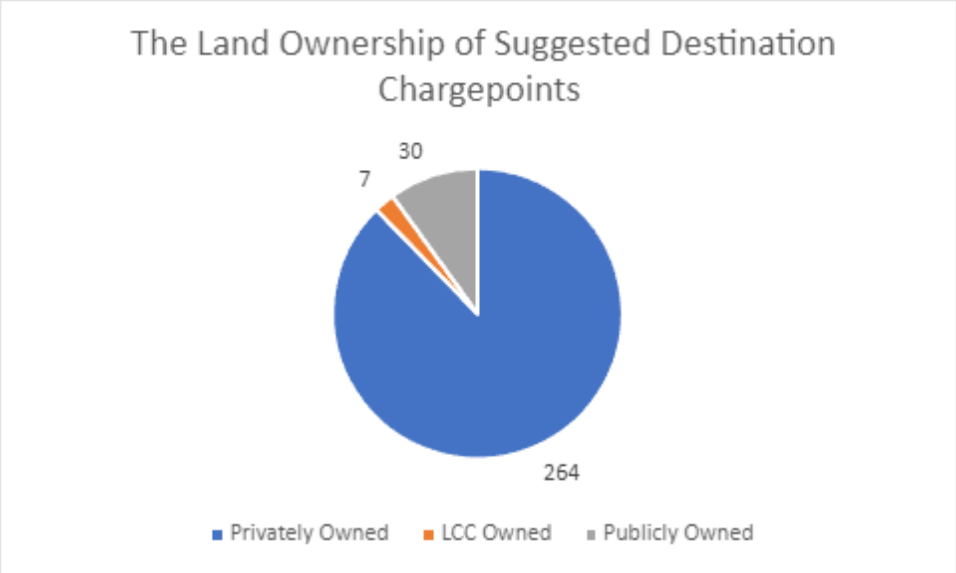

Figure 13: Land ownership of respondents suggested destination chargepoint locations.

e) Enroute:

15 suggested chargepoint locations were categorised as enroute. Of these 15 suggested locations, 9 were located on the local road network e.g., laybys, for which Leicestershire County Council is responsible for as the Local Highways Authority. 5 suggested locations were at private enroute locations such as petrol stations and service stations. Finally, there was a single suggested location on the Strategic Road Network managed and maintained by National Highways, see **Figure 14**.

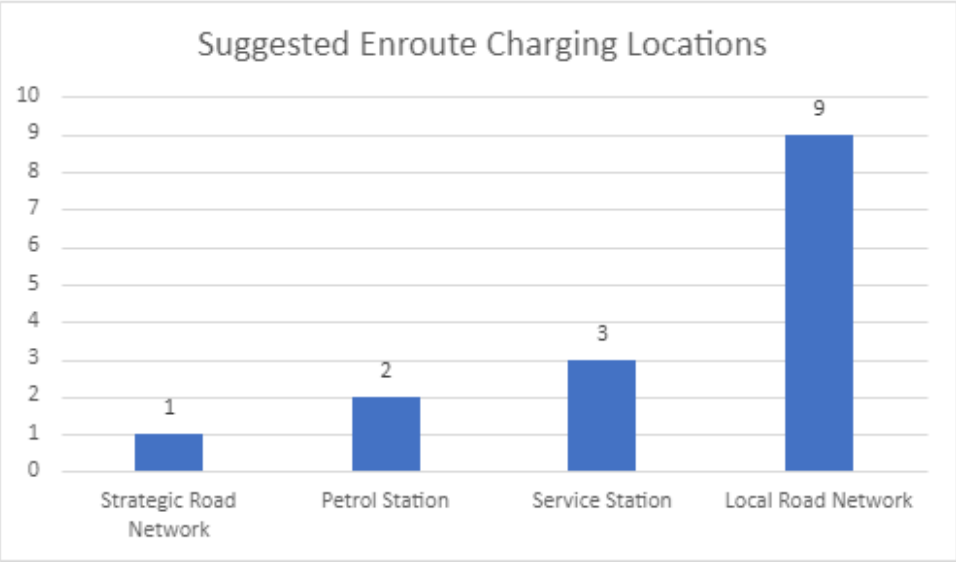

Figure 14: Respondent suggested enroute chargepoint locations.

f) Workplace:

9 suggested locations were located at workplaces. 3 of the suggested locations were on Leicestershire County Council owned land at County Hall. The other 6

suggested sites were located on privately owned land. 4 of these sites were publicly accessible workplace car parks owned by District Councils. The final 2 sites were located at District Council workplaces which are not accessible by the public.

2.4 Additional Comments

When providing potential chargepoint locations respondents could provide an accompanying comment to provide further context to their selection. Respondents provided 351 additional comments. The majority of these comments specified the resident's selected location. 76 comments provided further context to the selections made:

- 43 comments indicated a requirement for chargepoints to be placed in locations where there was limited or no access to off-street parking by residents,
- 14 comments identified wanting chargepoints placed in central locations,
- 11 comments identified desire for a form of charging hubs to be provided,
- 4 comments described wanting lamppost charging to be provided as an option and
- 4 comments referenced building new EV charging infrastructure into future transport developments and housing developments.

2.5 Suggested Recommendations

- All 134 **on-street** locations within the highway, to be considered as a priority for future LCC chargepoint delivery plans, subject to grid capacity, impact on other highway users, availability of off-street parking and availability of funding.
- All 548 potential chargepoint locations in Leicestershire, including sites located in '**off-street hub'** (car park) locations owned by Parish and District Councils to be captured in LCC's EV Planning Tool to support future site selection decisions.
- Share likes and dislikes and associated comments on existing EVCPs with landowners.
- Where possible share feedback with privately owned '**destinations,'** e.g., supermarkets.
- Share the 22 suggested locations within the city administrative area with the City Council.
- Share the single suggested location on the Strategic Road Network with National Highways
- Share district owned suggested sites with the relevant district council, including 6 remaining suggested workplace locations.
- Share all suggested chargepoint **destination** and **workplace** locations owned by LCC with LCC's Property department including 7 'destinations' and 3 workplace locations.
- Continue to engage with residents via LCCs EV webpage, to understand the demand for chargepoints on Leicestershire's highways.

3. EV Survey

3.1 Introduction

The primary aim of the EV Survey was to provide an opportunity for current and future EV owners to tell us about their charging habits and their potential charging concerns.

The survey was designed so that respondents would only be asked questions based upon whether they were a current EV owner, prospective EV owner or had no plans to purchase an EV in the future. Therefore, each respondent did not answer every question within the survey. There was a total of 20 questions.

Respondents were also provided the option to skip questions presented to them, therefore the base figure the percentages have been calculated from vary throughout the analysis.

3.2 Findings

A total 540 people responded to the survey, all of which responded online.

Do you currently own or lease an EV?

As shown in **Figure 15**, 287 respondents reported currently owning or leasing an EV (53%), plug-in or mild hybrid vehicle. 248 respondents reported they do not currently own or lease an EV (46%) and 5 respondents did not know (1%). Of the 248 respondents who do not currently own or lease an EV, 196 identified themselves as prospective owners. Prospective owners made up 36% of total respondents.

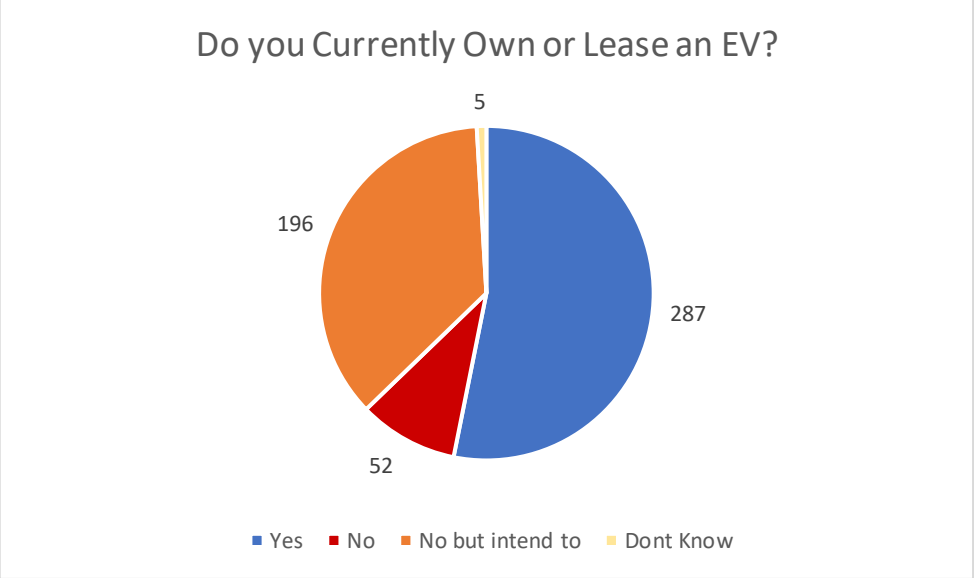

Figure 15: The number of respondents who currently own or lease an EV, intend to, and do not own or lease an EV.

The findings below have been set out in the following sections:

- Current EV Owners (3.2.1)
- Non-EV Owners (3.2.2)
- Prospective EV Owners (3.2.3)
- Current and Prospective EV Owners (3.2.4)
- Demographic Information (3.2.5)

3.2.1 Current EV Owners

287 respondents reported that they currently own or lease an EV. This made up 53% of all respondents.

Which best describes your EV?

Of these 287 EV owners, 243 reported owning or leasing a full battery electric vehicle (84%), 37 own or lease a plug-in hybrid (13%) and 7 respondents described their Electric Vehicle as "Other" (2%). 6 of the vehicles reported as "Other" were a form of Hybrid vehicle that does not require external charging and the seventh was an E-cycle.

What do you use this EV for?

282 reported that they used their EV from personal use, 163 for business use and 1 used their EV for Volunteer driving.

Where do you currently charge your EV during the day and/or overnight?

Respondents were asked to select all EV charging options they currently utilise from a list of options. Respondents could select as many options as they required. The results are listed below and presented in **Figure 16.** Of the 287 respondents who currently own or lease an EV:

- 232 charge on their private property or land (81%),
- 140 charge in public car parks such as supermarkets, shopping centres and District Council car parks (49%),
- 129 charge at motorway services (45%),
- 89 charge at work in a work car park (31%),
- 75 charge in privately owned car parks such as NCP car parks (26%),
- 72 charge at petrol stations (25%),
- 56 charge in charging hubs in community areas (20%),
- 29 charge at public transport links (10%),
- 6 charge at allocated parking bays near to their home or within a few streets of their home (2%), and,
- 17 charge in other unspecified locations (6%).

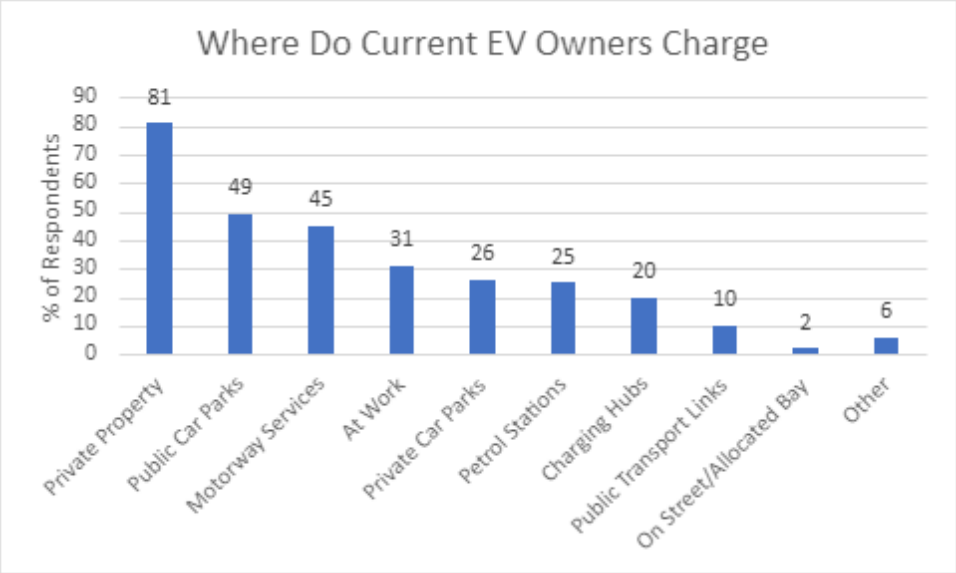

Figure 16: What percentage of current EV owners charge their vehicles during the day and/or overnight using each form of chargepoint provision.

As expected, the vast majority of current EV owners charge their vehicles at home. Approximately 50% of respondents use a form of top up charging in publicly accessible car parks and use Motorway services as a form of enroute charging for long distance journeys. These three charging locations are currently the most commonly available, therefore it is expected that these options would be the most popular. Currently home and work charging are mostly standard chargers with faster charging options being available at motorway services and public car parks. This shows a range of charging speeds are currently being utilised as a part of respondents charging solution.

There is some existing provision for other charging options such as workplace charging. This is expected due to the Governments Workplace Charging Scheme (WCS) being introduced from April 2022 supporting workplace uptake. This figure is expected to grow as more workplaces begin to install EV chargepoints on their premises.

20% of respondents reported using a charging hub. A charging hub is defined by multiple, often higher powered, chargepoints located in a centralised parking area. Current examples of this include District Council owned car parks and some larger Supermarkets across Leicestershire.

Where would you like to charge your EV, where you cannot currently?

Respondents were also asked to select what locations they would wish to be able to charge at in the future. The findings are set out below and presented in **Figure 17**.

- 183 wish to charge in public car parks such as supermarkets, shopping centres and Council car parks (64%),
- 169 wish to charge in charging hubs in community areas (59%),
- 98 at public transport links (34%),
- 96 in private car parks (33%),

- 90 in an on-street or allocated bay near their home or within a few streets distance (31%),
- 89 at petrol stations (31%),
- 78 at Motorway services (27%),
- 65 at work in works car parks (23%),
- 41 on their own private property (14%), and,
- 18 at other unspecified locations (6%).

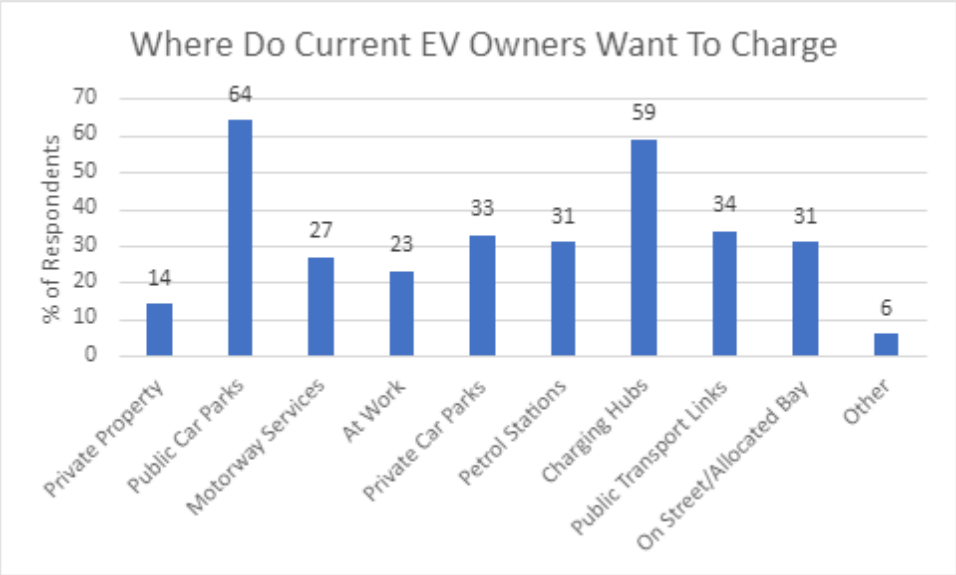

Figure 17: What percentage of current EV owners want to be able to charge their vehicles using each form of charging provision.

14% of current EV owners reported wanting to be able to charge on private property. This is 70% of owners who do not currently charge on private property. 31% of current EV owners were interested in an on-street or allocated bay within a few streets of their home. This combined interest indicates that home charging and charging options which provide a similar service are popular amongst current EV owners.

The two most popular desired charging locations were public car parks and charging hubs. 49% of current EV owners reported already charging in public car parks therefore the high level of demand indicates a desire for the network of public car park chargepoints to be expanded. Charging hubs and public car parks often provide charging facilities with faster speeds and therefore is logical that current EV owners would want use this to complement their current slower off-street provision.

Enroute charging options such as motorway services and petrol stations were popular indicating current EV owners want to see an expansion of the chargepoint network along the motorway and A & B road networks.

36% of current EV owners want to be able to charge at public transport links showing interest in an improvement in the interconnectivity between sustainable travel modes.

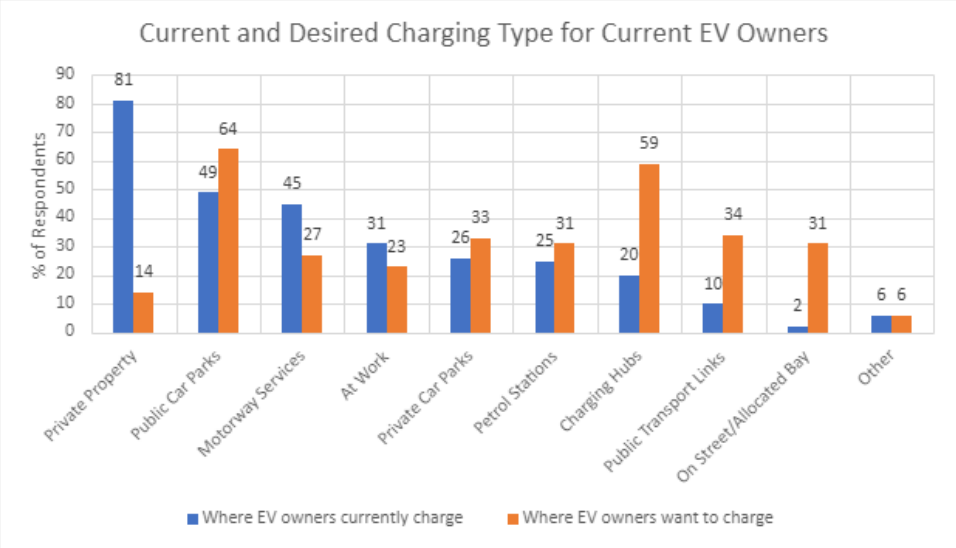

Figure 18: A comparison of which forms of chargepoint provision EV owners currently use and what they would like to use in future.

As shown above in **Figure 18**, currently the most popular charging method is at home (private property). The second most demanded charging provision after public car parks was charging hubs in community areas. This indicates that higher powered charging options local to residents are popular options.

The largest discrepancy between current charging habits and desired charging provision is charging hubs. This is followed by on-street provision and charging provision at public transport links. These 3 options receive the least existing usage as this type of provision is currently scarce. Therefore, it is expected that the demand would be higher than the current reported usage.

The four charging options with significantly higher demand than current provision are public car parks, charging hubs, on-street provision, and public transport links. These options consist of a range of charging speeds i.e., fast charging options are charging hubs and public car parks and standard charging options for on-street provision and public transport links.

Charging at motorway services also received slightly more demand than current usage indicating respondents want an expansion to the current service available.

The demand for different forms of chargepoint provision

One point of interest is how the charging provision demanded by current EV owner's changes based upon whether they currently have access to home charging. As shown in blue, in **Figure 19** below, a total of 232 current EV owners reported they charge at home. 55 reported not currently charging at home.

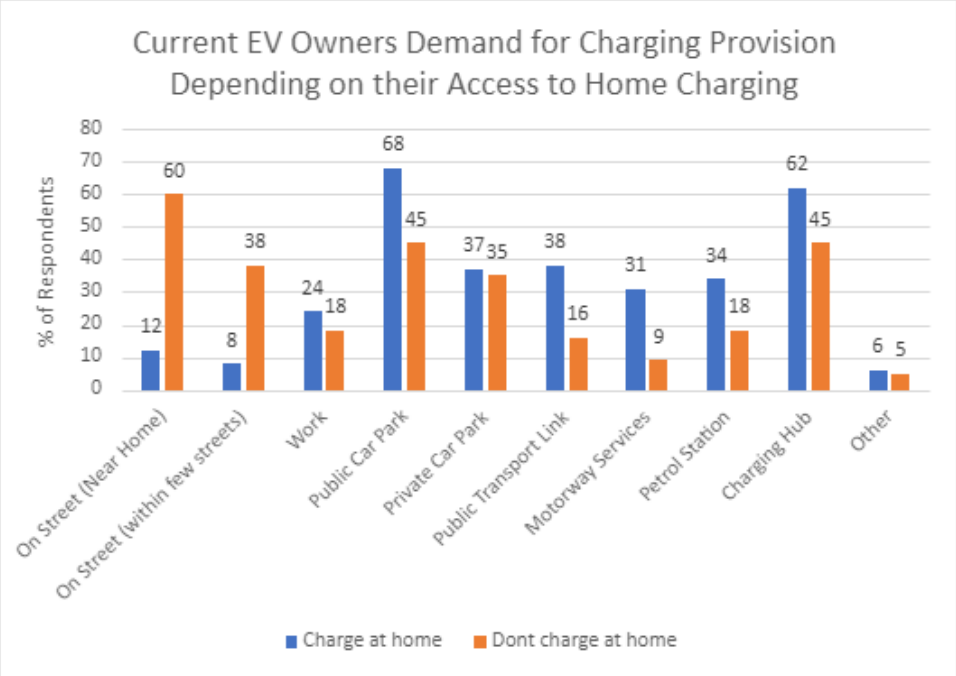

Figure 19: The demand for each form of charging provision by current EV owners depending on whether they currently charge their vehicle at home.

The largest discrepancy between respondents with and without home charging is the demand for on-street charging. 60% of current EV owners who do not currently charge at home want a form of on-street charging near to their home. 38% want chargepoints within a few streets of their home. This is a much higher percentage compared to respondents who currently have home charging (8%). 12% of respondents who currently charge at home, want an on-street provision near to their home and 8% want an on-street charging provision within a few streets.

On-street chargepoints within residential areas are generally expected to provide a standard charging speed therefore it is expected that those with home charging are less likely to want on-street charging in addition. However, those without the option to charge at home are much more likely to require a form of standard charging close to their home to complement their current charging solution.

Current EV owners with access to home charging more frequently wanted chargepoints at Public Car Parks (68% vs 45%), Public Transport Links (38% vs 16%), Motorway Services (31% vs 9%), Petrol Stations (34% vs 18%) and charging hubs (61% vs 45%) than current EV owners without home charging.

The majority of these charging options often provide faster charging speeds. It is expected that respondents with access to home charging are more likely to want a faster charging provision to supplement their current standard charging provision. Respondents without home charging are more likely to want an option with a standard charging speed close to home to supplement the publicly available faster charging options.

Which type of public chargepoint would suit your current charging requirements?

EV owners were asked what type of public chargepoints would suit their charging requirement based on their current charging habits. Respondents were able to select multiple options.

As shown in **Figure 20**, 285 current EV owners responded which type of chargepoint which would suit their charging requirements. Of these 285 respondents 83% consider public rapid chargepoints as part of their charging requirements. 42% identified fast chargepoint and 17% identified standard chargepoints. 6 respondents selected "Other" none of which were specified. As they were unspecified the responses will be discounted leaving 279 responses.

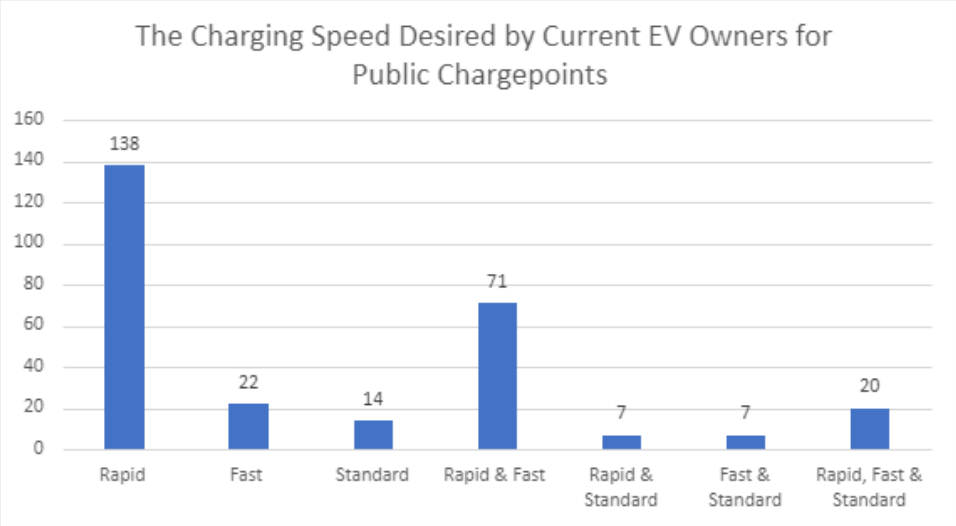

Figure 20: What type of public chargepoints do current EV owners believe will suit their requirements.

- 138 of current EV owners believe that only public rapid chargepoints would suit their charging requirements (49%),
- 22 reported only fast chargers suiting their requirements (8%),
- 14 respondents reported only standard chargers would meet their requirements (5%),
- 71 would want a mix of rapid and fast chargepoints (25%),
- 7 would want a mix of rapid and standard chargepoints (3%),
- 7 would want a mix of fast and standard chargepoints (3%), and,
- 20 believe a mix of rapid, fast, and standard chargepoints would meet their requirements (7%).

81% of current EV owners who responded to the survey currently have access to off-street parking and therefore access to a slower form of charging. This is shown by the lower demand for standard chargepoint provision and the increased demand for rapid chargepoints.

3.2.2 Non-EV Owners

248 respondents reported that they do not currently own or lease an EV. Of these 248, 20 reported their intentions to own or lease an electric or plug in hybrid vehicle in the next year (8%). 95 respondents intend to own or lease an EV or plug in hybrid in the next 5 years (38%), 50 intend to own an EV but not in the next 5 years (20%), 52 do not intend to buy or lease an EV in the future (21%) and 31 did not provide a response (13%).

67% of respondents reported that they intend to purchase or lease an EV in the future. This aligns with the expected increase in demand for electric vehicles prior to the ban on sales of new petrol and diesel vehicles in 2035.

What are the following barriers to you getting an EV?

The 248 respondents who reported not owning an EV were asked what the main barriers to them purchasing or leasing an EV are. The results are presented in **Figure 21** below. Each respondent could respond either "Not at all," "Not very much," "To Some Extent," "A Great Deal" or provide no response to a list of provided barriers that have been identified as commonly stated reasons for not purchasing or leasing an EV.

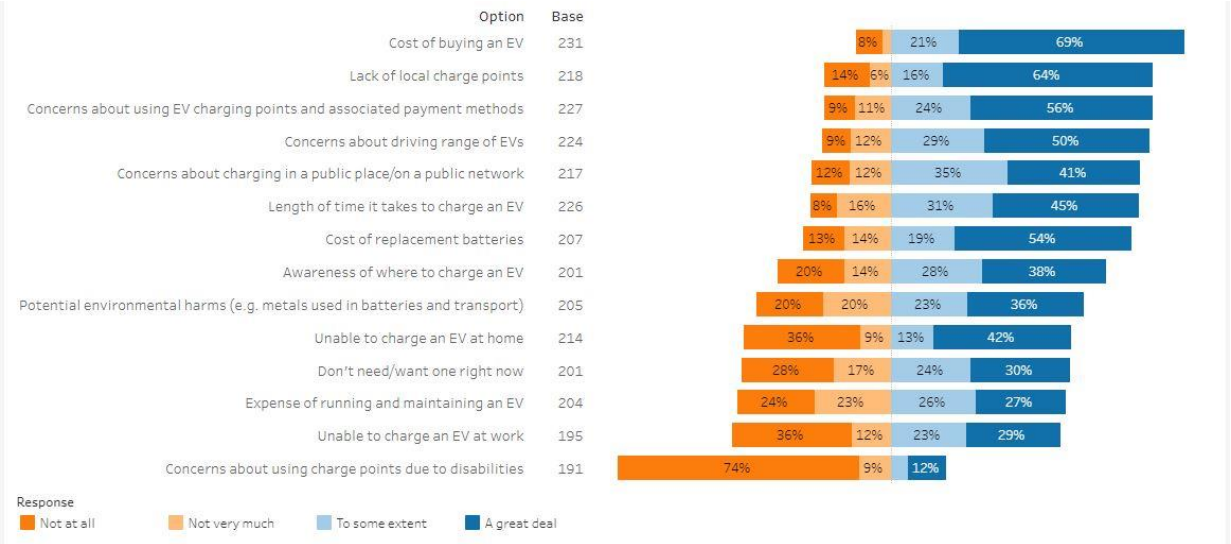

Figure 21: How impactful are identified barriers to purchasing or leasing an EV for non-EV owners.

a) Cost of buying an EV:

90% of respondents identified the cost of buying an EV as a barrier to purchasing or leasing an EV. This was the most identified barrier by respondents. This is expected as the current second-hand market for EVs is small meaning few cheaper EVs are available for purchase. This is expected to increase as the number of EVs manufactured is set to increase towards 2035 due to governmental restrictions outlined in the Zero Emission Vehicle mandate.

b) Lack of local charge points:

80% of respondents identified the lack of local chargepoints as a barrier to purchasing or leasing an EV. As of April 2024, there are currently 540 publicly

accessible chargepoints within Leicestershire which are primarily focused within the larger settlements across the County. It is expected that 3200 publicly accessible chargepoints will be required across the county to meet demand by 2030.

There is a clear discrepancy between the number of currently available public chargepoints and the expected demand. It is therefore expected that the majority of respondents would have concerns about the lack of local chargepoints available to them.

c) Concerns about using EV charging points and associated payment methods:

80% of respondents identified concerns about using EV chargepoints and associated payment methods as a barrier to purchasing an EV. This implies people want chargepoints to be intuitive and easy to use with a consistent charging payment method, such as contactless payment, to be available.

d) Concerns about driving range of EVs:

79% of respondents identified the driving range of EVs as a primary barrier to purchasing or leasing an EV. The reporting of this barrier was consistent between respondents planning to purchase an EV within the next year, next 5 years and in over 5 years' time.

This concern is likely connected to the lack of local chargepoints. If more chargepoints are available, a reduction in concerns relating to the maximum distance of travel an EV is capable is likely to follow. It is also important to note that with the development of battery technologies the driving range of EVs is likely to increase.

e) Concerns about charging in a public place/on a public network:

76% of respondents identified concerns about charging in a public place as a barrier to purchasing or leasing an EV.

This barrier can cover a range of concerns including the safety of leaving an EV in a public location for a long period of time, ability to access chargepoints consistently, personal safety when using chargepoints and the ability for disabled users to be able to use the chargepoints.

These concerns show that it is important to ensure that any chargepoints installed on Leicestershire's highways are easily accessible for a range of users and are in attractive and safe locations. Concerns due to access are likely to improve with an increase in the number of chargepoints available to residents.

f) Length of time it takes to charge an EV:

76% of respondents identified the length of time it takes to charge an EV as a barrier to purchasing an EV. This follows the previously identified demand for faster charging options such as charging hubs and public car park charging to be provided locally to them to keep the length of time it takes to charge down.

g) Expense of running and maintaining an EV:

The four possible responses received approximately equal selection. This indicates that while there are concerns about the maintenance and operating costs of EVs they are not a primary barrier to purchase. This is likely due to current ICE owners being familiar with running and maintenance costs and therefore it not being seen as an extra expense of owning an EV.

h) Cost of replacement batteries:

73% of respondents identified the cost of replacement batteries as a barrier to purchasing or leasing an EV. 68% of respondents who plan to own an EV see this as a concern as opposed to 87% who don't plan on buying an EV.
There is a significant difference in the reporting of this barrier by prospective owners and respondents who have no plans to purchase an EV.

The cost of a replacement battery can be seen as a large extra expense compared to driving an ICE car. Therefore, it is understandable that many see it as barrier to purchasing an EV. Reducing this perceived barrier is likely a key requirement to increasing the number of residents who would consider purchasing an EV in the future.

The high reporting rate of this barrier also shows that the primary operating concern of owning an EV are the extra costs of ownership such as replacement batteries as opposed to usual running costs which are more acceptable.

i) Awareness of where to charge an EV:

66% of respondents consider their awareness of where to charge electric vehicles to be a barrier to purchasing or leasing an EV. This barrier is related to the lack of local chargepoints and the driving range of EVs barriers. It's expected that as the number and visibility of EV chargepoints increase so will the awareness of where residents can charge their vehicles.

j) Potential environmental harm (e.g., metals used in batteries and transport):

59% of respondents consider the potential environment harm of using an EV as a barrier to purchasing or leasing an EV.

The concerns about potential environmental harm may cover a range of different aspects such as the mining of precious metals and materials, the manufacturing process of batteries, the lifecycle of the vehicle and the production of the electricity required not being generated from renewable sources.
Many of these barriers are outside the responsibilities of LCC as the Local Highways Authority and are instead under the influence of governmental influence and wider market forces. However, it is important to identify where LCC may have a role in reducing environmental concerns of the transition to electric vehicles.

k) Unable to charge an EV at home:

55% of respondents identified their inability to charge an EV at home as a barrier to purchasing an EV. It is expected that residents with off-street parking would not

see this as a barrier aside from the purchasing or installation of a chargepoint. It is expected that this is a major barrier to ownership for residents without access to off-street parking.

l) Unable to charge an EV at work:

52% of respondents identified being unable to charge an EV at work as a barrier to purchasing or leasing an EV. It is likely that this barrier is only reported by 52% of respondents as the majority of Leicestershire's residents have access to off-street parking and therefore may not require access to a secondary form of standard charging. Work charging is likely seen as more of a requirement for residents without access to off-street parking.

m) Concerns about using chargepoints due to disabilities:

40% of residents who reported having a disability identified their concerns about using chargepoints due to disabilities.

Respondents were also provided with a list of common barriers to purchasing an EV. Where these options did not cover the respondent's concerns, they were asked to provide further barriers they felt would prevent them from purchasing an EV.

The commonly identified barriers included:

- Fire risk due to malfunction,
- The cost of insurance,
- The requirement to replace batteries and their warranty,
- Inability to tow using an EV,
- Limited access to charging when not having access to off-street charging, and,
- The cost to maintain the vehicle.

It is important to recognise that these are real concerns raised by the public in relation to EVs and chargepoints. As the Highways Authority it is important to consider these concerns within the rollout of chargepoints when they are within the authorities control. However, it should be noted that many of these factors are not specific to Leicestershire and are dictated on a Governmental level or by the private industry.

How do reported barriers to EV purchase differ between respondents who plan to purchase an EV in the future and those who do not?

It is important to understand the difference in reported barriers between prospective EV owners and respondents who do plan to purchase an EV as it will indicate which barriers are more likely to be seen as a prevent the consideration of EV purchase entirely.

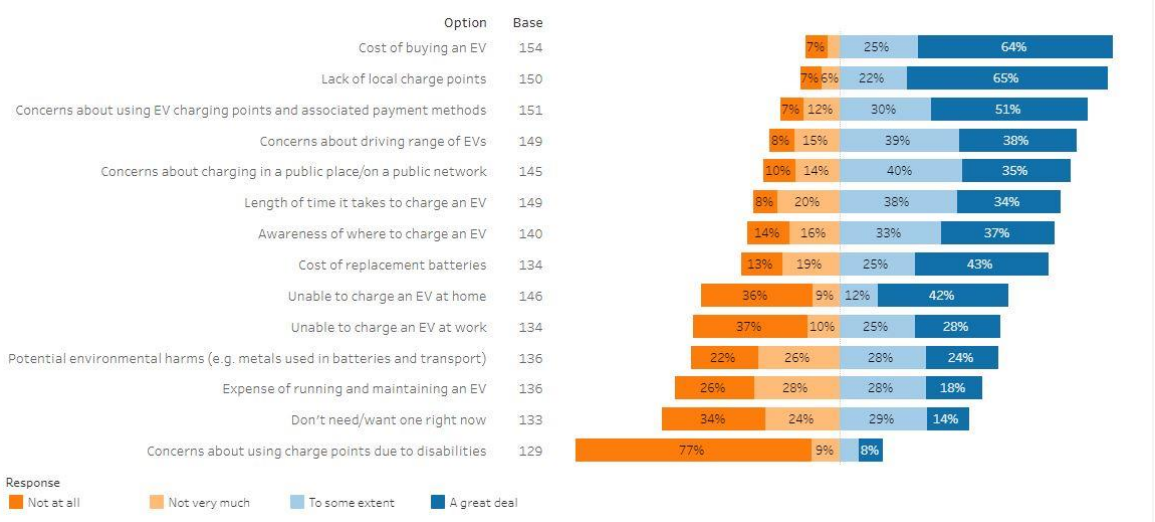

Figure 22: How impactful are identified barriers to purchasing or leasing an EV for prospective EV owners?

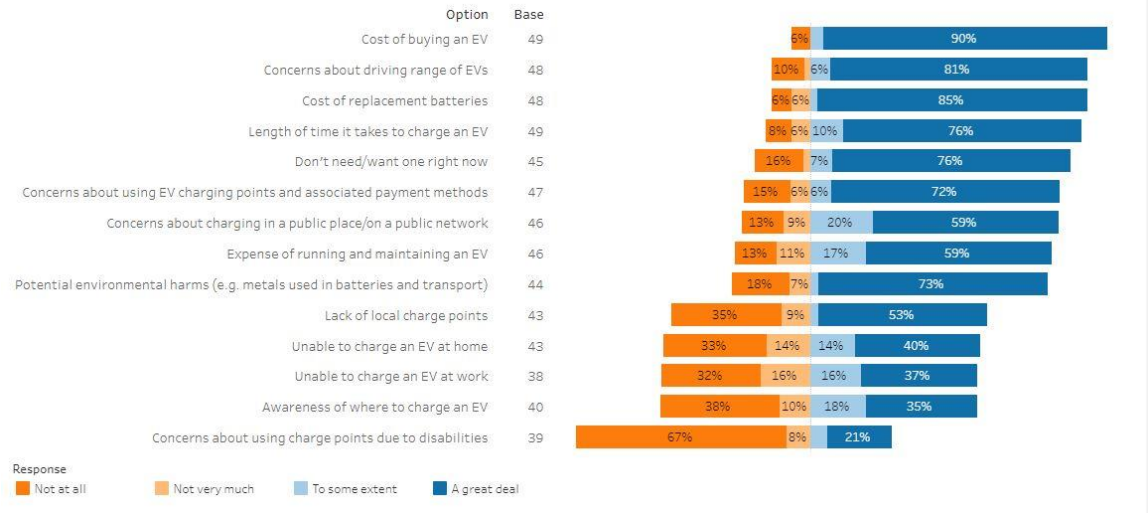

Figure 23: How impactful are identified barriers to purchasing or leasing an EV for respondents who reported having no intention to own or lease an EV?

As shown in **Figures 22** and **23** above, respondents who are not currently considering purchasing or leasing an EV more often report the extent of barriers affecting them as 'a great deal' while prospective EV owners were more likely to report a barrier as affecting them to 'some extent.'

80% of prospective EV owners consider the lack of local chargepoints to be a much larger barrier to purchase than the 55% of respondents who don't plan to purchase an EV.

This indicates that respondents considering purchasing an EV see day to day barriers such as local chargepoint accessibility as a more significant barrier than respondents not considering purchasing an EV. Therefore, the barriers preventing respondents who do not plan to purchase an EV are centred around the purchase of the vehicle and extra costs of owning an EV compared to an ICE vehicle such as the cost of replacement batteries.

A primary short-term barrier to EV purchase is the low number of EV chargepoints available to residents.

Improving visibility of public chargepoints is vitally important to supporting the uptake of EVs and a primary method of this is to increase the number of chargepoints available to residents.

Would you need access to an on-street public chargepoint?

Respondents who reported not owning an EV were asked whether they believed they would need access to an on-street public chargepoint. The results are presented in **Figure 24**. Respondents could select multiple responses including "Yes, at Home," "Yes, at Work," "Yes, at another location," "No" and "Don't Know." Of the 195 respondents, 62 said No (32%) and 23 said they didn't know (12%). None of these 85 respondents selected a second response.

The remaining 110 (56%) respondents reported requiring a form of on-street charging.

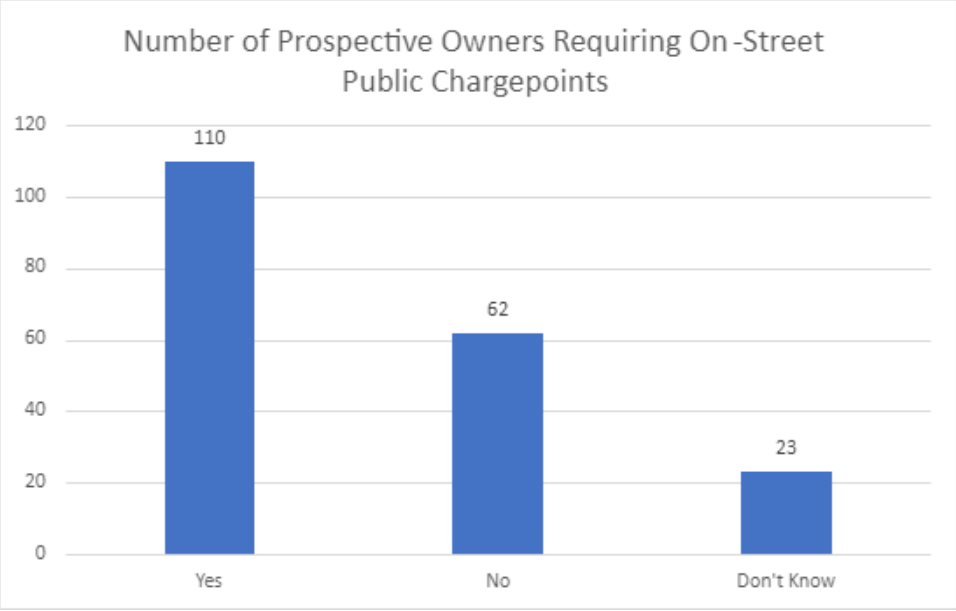

Figure 24: How many prospective EV owners reported requiring on-street public chargepoints.

The 110 respondents who reported requiring an on-street public chargepoint could also specify the purpose they would need the on-street chargers for, as shown in **Figure 25**.

Of these 110 respondents:

- 44 reported only requiring home charging,
- 17 only require work charging,
- 6 only require charging at another location,
- 26 require home and work charging,
- 7 require charging at home and another location,
- 2 require charging at work and another location, and,
- 8 require charging at home, work, and another location.

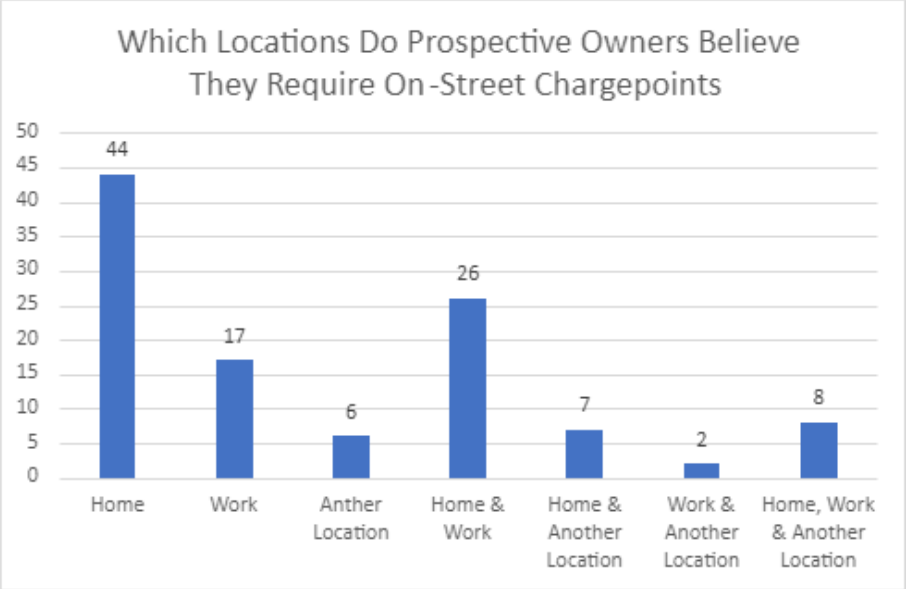

Figure 25: What locations do prospective EV owners report wanting on-street charging points.

As expected, home charging was seen as the most popular option as it is generally the most convenient for residents. This was followed by home & work charging and then solely work charging. This shows that residents want on-street chargepoints at locations where they will be spending extended periods of time. This would allow them to take advantage of standard chargepoints which are generally cheaper to use than rapid or fast chargepoints.

Which type of public chargepoint would suit your charging requirements?

Non-EV owners were asked what type of public chargepoints would suit their charging requirement based on their expected charging habits. Respondents were able to select multiple options.

As shown in **Figure 26**, 73% of the 184 respondents who do not currently own an EV identified 'rapid' chargepoints as a part of their charging solution. 33% identified 'fast' chargepoints and 34% identified 'standard' chargepoints.

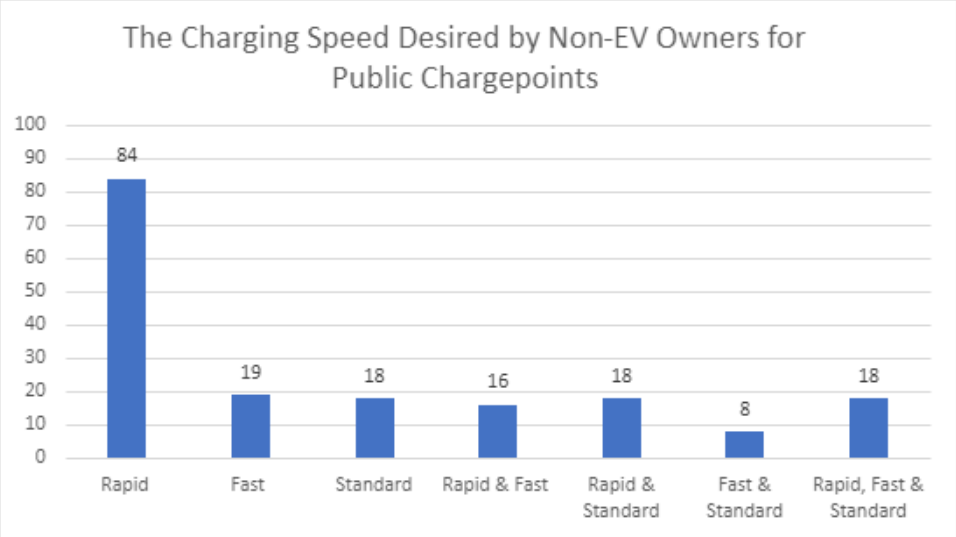

Figure 26: What type of public chargepoints do non-EV owners believe will suit their charging requirements.

- 84 respondents responded that solely public rapid chargepoints would suit their charging requirements (46%),
- 19 reported only fast chargers suiting their requirements (10%),
- 18 respondents reported only standard chargepoints would meet their requirements (10%),
- 16 would want a mix of rapid and fast chargepoints (9%),
- 18 would want a mix of rapid and standard chargepoints (10%),
- 8 would want a mix of fast and standard chargepoints (4%), and,
- 18 believe a mix of rapid, fast, and standard chargepoints would meet their requirements (10%).

5 respondents selected "Other" when answering this question. 4 of these 5 responses referenced planning to charge at home the majority of the time. The other referenced concerns with cost of charging at public chargepoints.

The majority of non-EV owners believe that public rapid chargepoints would be a part of their charging solution if they were to own or lease an EV in the future with almost half solely wanting a rapid charging provision.

3.2.3 Prospective EV Owners

If you were to own an EV, where would you wish to charge your vehicle?

The 196 respondents who had reported their intention to purchase an EV at some point in the future were asked where they would wish to charge their vehicles. Respondents were provided the same list as current EV owners and could select multiple responses. The results are shown below and presented in **Figure 27**.

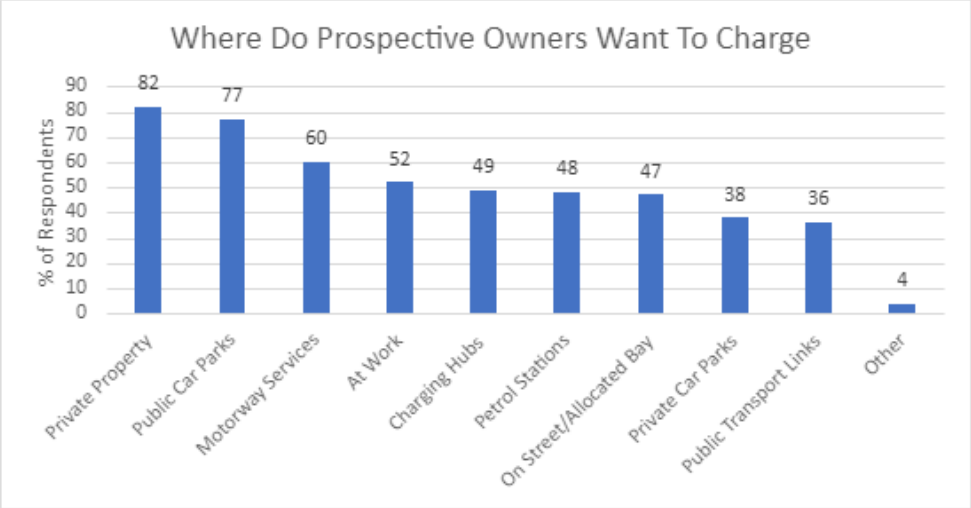

Figure 27: What percentage of prospective EV owners want to charge their vehicles during the day and/or overnight using each form of chargepoint provision.

- 160 respondents wish to be able to charge on their private property (82%),
- 150 wish to charge in public car parks such as supermarkets, shopping centres and council car parks (77%),
- 117 wish to charge at Motorway services (60%),
- 100 at work and in work car parks (52%),
- 95 in charging hubs in community areas (49%),
- 93 at petrol stations (48%),
- 92 on-street or allocated bays within a few streets of their houses (47%),
- 74 in private car parks such as NCP car parks (38%),
- 70 at public transport links (36%), and,
- 7 at other unspecified locations (4%).

The three most popular options were charging at home on private property, charging in public car parks and charging at motorway services. This mirrors the three most popular charging options utilised by current EV owners.

Faster charging options such as charging hubs and enroute charging options at petrol stations and motorway services were popular.

Almost half of respondents reported wanting to charge on-street outside their houses or within a few streets of their home. The majority (76%) prefer for the chargepoints to be placed on their street as opposed to within a few streets distance.

The demand for different forms of charging provision from prospective owners

If we assume that all prospective owners who responded as wanting to charge at home as having access to home charging, we can understand how demand for different forms of chargepoint provision differs between residents who have and do not have access to home charging.

As shown in **Figure 28**, 85% of residents who do not want to charge at home want a form of on-street chargepoint provision near to their home. 24% of respondents want to charge on-street within a few streets of their homes. These figures are much greater than the 26% of prospective owners who reported wanting a form of on-street charging provision in addition to home charging. 9% want on-street charging provision within a few streets of their home in addition to home charging.

All other suggested charging options received similar interest from prospective owners who want and don't want to charge at home.

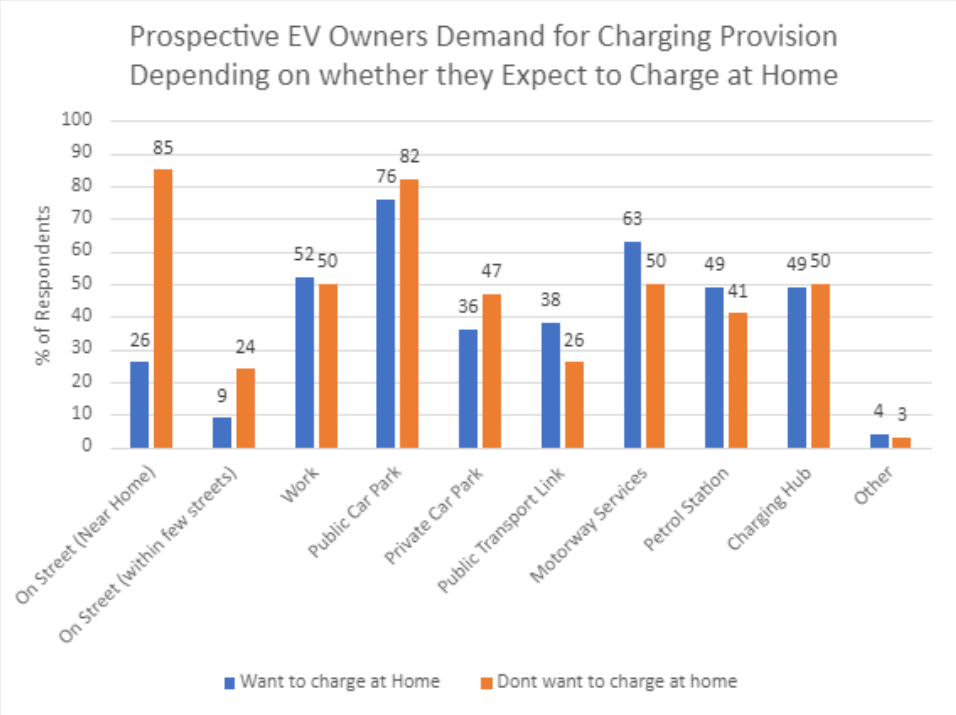

Figure 28: The demand for each form of charging provision from prospective EV owners depending on whether they expect to charge their vehicle at home.

3.2.4 Current & Prospective EV Owners

Where do current and prospective owners what to charge?

The desired charging locations of the 196 prospective EV owners and the 287 current EV owners has been compared below in **Figure 29**.

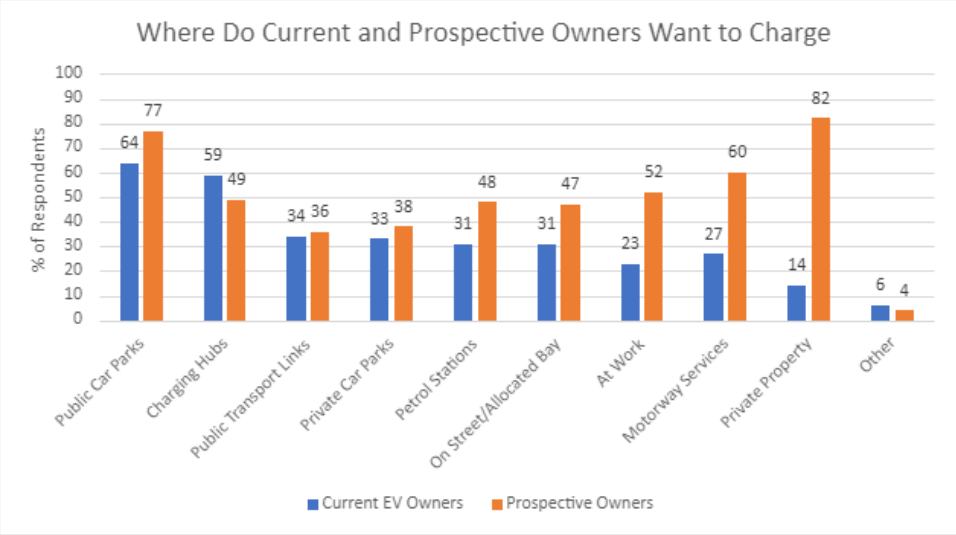

Figure 29: A comparison between where current and prospective EV owners want to be able to charge their EVs.

The demand for the majority of chargepoint provision is greater from prospective EV owners. Prospective owners selected 958 individual forms of charging provision selected by the 196 respondents for an average of 4.9 forms of charging provision selected by each respondent. This is greater than the average of 3.2 forms of charging provision selected by current EV owners. (936 selections from 287 respondents).

Prospective EV owners believe they require a wider range of charging options to be available compared to current EV owners. It is however important to note that current EV owners have a higher rate of home charging accessibility so would likely require fewer alternative options. Even so, the charging requirements of EV vehicles is seen as higher by prospective EV owners than current EV owners.

Home charging on private property is most popular option for prospective owners. As stated previously, 81% of current EV owners already charge on their private property therefore the demand for this option would be lower as shown in the graph. Overall, home charging is the most popular option for current and prospective EV owners.

The charging options which received a similar amount of demand from both current and prospective owners include destinations, off-street hubs and charging hubs in community areas. This indicates the desire by residents to see these locations have expanded charging facilities.

On-street chargers received some demand from current and prospective EV owners. As a vast majority of respondents have or want to charge on private property, it is likely the population of survey respondents who would need to rely on on-street chargers is lower than an accurate representation of Leicestershire's residents. It is expected that

demand for on-street chargers would be higher for residents without access to off-street parking. Therefore, it can be assumed that the population of prospective owners is more representative of the County's population demand for off-street charging access.

Which type of public chargepoint would suit your current charging requirements?

Current and prospective EV owners were separately asked what type of public chargepoints would suit their charging requirement based on their current and expected charging habits. Respondents were able to select multiple options.

The percentage for each combination of charging speed provision was calculated to compare the populations of non-EV owners and current EV owners.

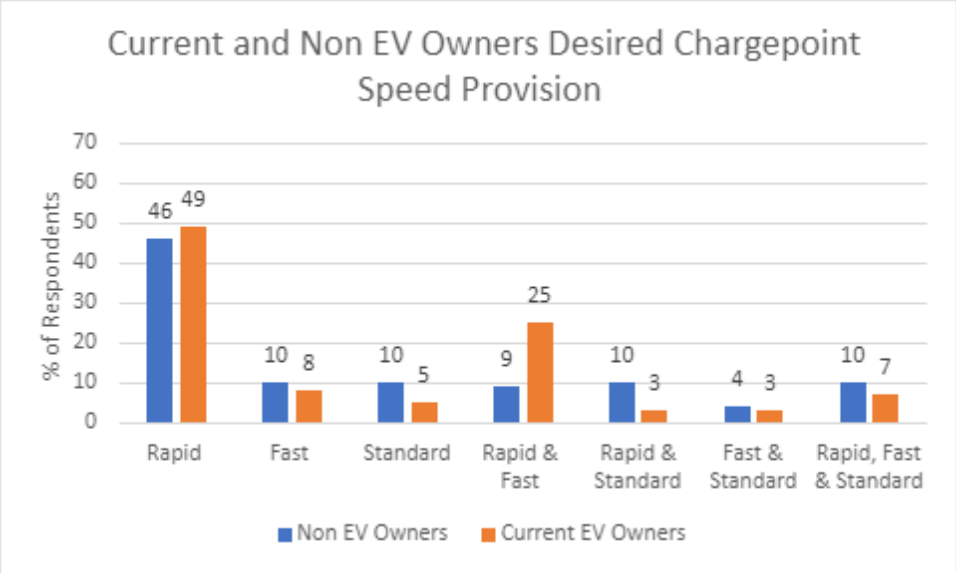

Figure 30: What is the demand from current and non-EV owners for different combinations of on-street chargepoint types.

Figure 30 above, shows that the percentage of residents solely wanting rapid chargepoints is consistent between current and prospective owners. The primary difference between the populations is that significantly more current owners want public rapid and fast chargepoints to complement their current charging solution.

The percentage of non-EV owners requesting solely standard public chargepoints was double the demand from current EV owners. Further to this 34% of non-EV owners want standard charging speeds as part of the public provision compared to 18% of current EV owners. This is expected as current EV owners are more likely to have a slower form of charging available to them at home compared to non-EV owners.

Thinking about what you want from a chargepoint, how important, if at all, are the following factors?

Current and prospective EV owners were asked what factors they consider important for on-street chargepoints to include. The respondents were asked to respond whether the factor was "Not at all important," "Not very important," "Fairly important" or "Very important." The results are listed below and presented in **Figure 31**.

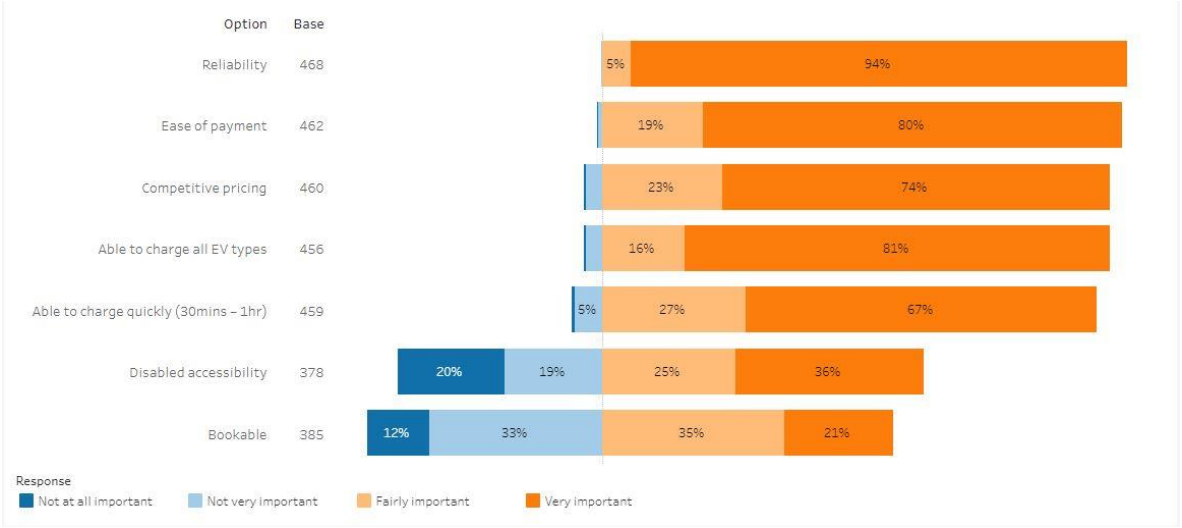

Figure 31: What factors do current and prospective EV owners consider to be important for public chargepoints to possess.

- 99% of respondents consider Reliability to be important,
- 99% of respondents consider the Ease of Payment at a chargepoint to be important,
- 97% consider competitive pricing as important.
- 97% consider that being able to charge all EV types is important,
- 94% consider being able to charge within 30m-1hr as important,
- 56% consider chargepoints being bookable in advance to be important,
- 61% consider that it is important that are accessible for disabled users.

It is important to note that 85% of respondents who reported having a long-standing illness, disability or infirmity consider disabled accessibility to be important.

All current EV owners who responded to this question except for 1 identified reliability as an important factor for chargepoints. 98% of current EV owners consider ease of payment as important and 96% consider competitive pricing as important.

100% of prospective owners consider reliability to be important, 99% consider ease of payment to be important and 98% consider chargepoints being able to charge all EV types as important.

Respondents across all the demographics consider the 5 most popular factors (reliability, ease of payment, competitive pricing, able to charge all EV types, Able to charge quickly) to be important for public chargepoints.

The location of EV chargepoints could be limited by connection to the electricity grid. How far would you be happy to park from your home?

The location of public chargepoints may be limited due to factors such as electrical grid capacity and connections. Current and prospective EV owners were therefore asked how long they would be willing to walk from their home to use a public on-street chargepoint.

127 of the 462 respondents responded to this question as non-applicable. These 127 respondents are likely to not require on-street charging due to charging at home and so did not provide a response.

Of the remaining 335 respondents, 86 would only use a chargepoint on the same street (26%), 74 would walk no further than a 2-minutes from their home to use a chargepoint (22%), 96 would walk no further than 5-minutes from their home to use a chargepoint (29%), 54 would walk no further than a 10-minutes from their home to use a chargepoint(16%) and 25 would be willing to walk over 10 minutes (7%).

It is expected that if a respondent were to be willing to park over a 10-minute walk from a chargepoint, they would be willing to walk less than 10 minutes to a chargepoint. Using this principle, the cumulative number of respondents willing to walk each distance has been provided below and presented in **Figure 32**.

- 335 would use a chargepoint on the same street (100%),
- 249 would use a chargepoint that is no more than a 2-minute walk away (74%),
- 175 would use a chargepoint that is no more than a 5-minute walk away (52%),
- 79 would use a chargepoint no more than a 10-minute walk from their home (24%) and
- 25 would be willing to walk over 10 minutes from their home to use a chargepoint (7%).

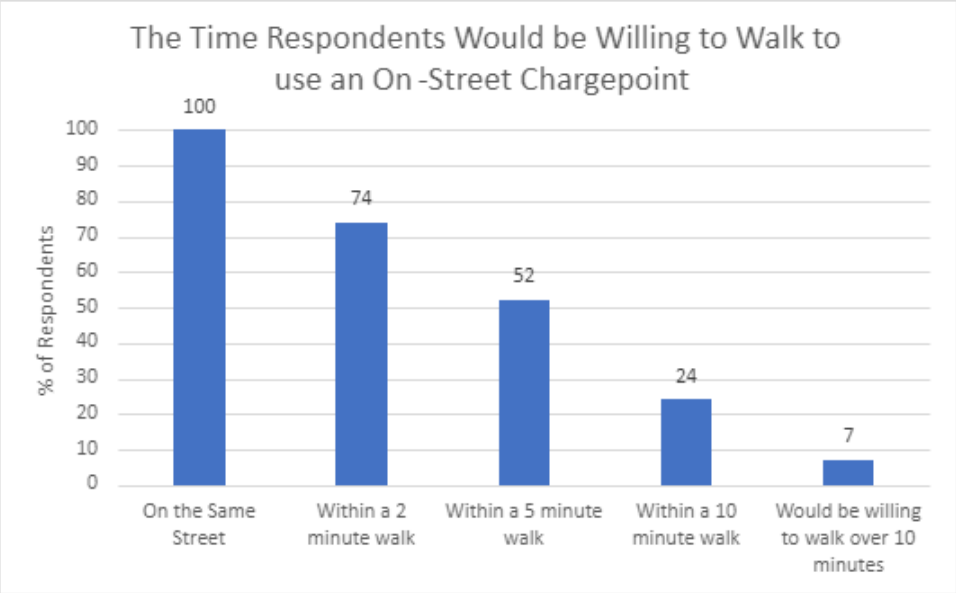

Figure 32: How far would current and prospective EV owners be willing to walk to access an on-street chargepoint.

Would you be willing to use a charging hub car park with multiple EV bays?

457 current and prospective owners responded to this question. 364 of the respondents commented they would be happy to use a charging hub (80%), 27 of the respondents would not be willing to use a charging hub (6%) and 66 respondents commented the use of charging hubs would not apply to them (14%).

Of the 391 respondents who believe charging in a charging hub is applicable to them, 93% would consider using a charging hub. This shows a high willingness of residents to use a charging hub.

Of the 364 respondents willing to use a charging hub, 190 would only be willing to use the charging hub if it was within a 5-minute walk from their home (52%). The other 174 respondents would be willing to use a charging hub if it was over a 5-minute walk from their home (48%), as shown in **Figure 33**.

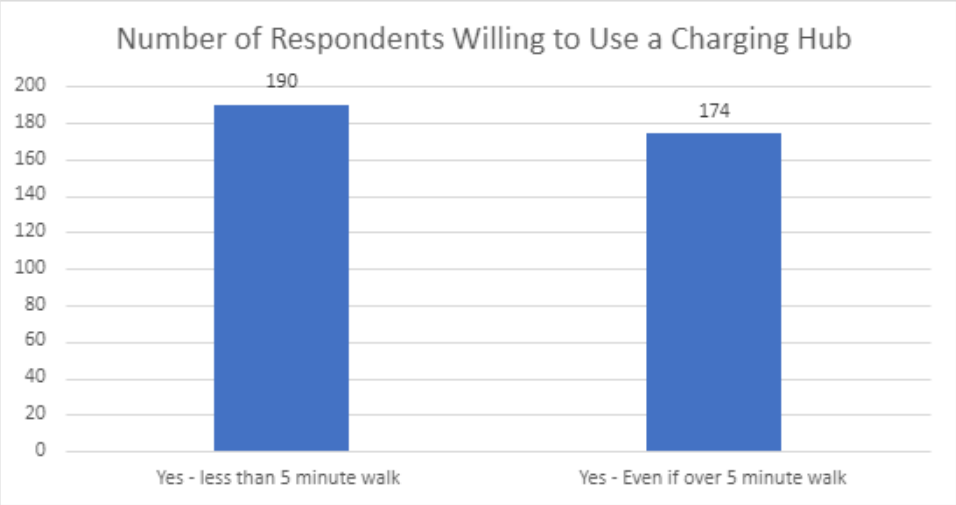

Figure 33: The reported willingness to use a charging hub by current and prospective EV owners.

What do current and prospective EV owners want from a chargepoint, how important, if at all, are the following?

Respondents could rate how important they believed reliability, ease of payment, competitive pricing, ability to charge different EV types, ability to charge quickly, disabled access and ability to book etc was for public charging infrastructure. Respondents could then comment other factors they believed to be important.

One commonly raised factor was a requirement for an available and useful customer support option to assist with reporting faulty/broken chargepoints, usage and payment concerns.

The safety of chargepoints was commonly raised by respondents. This point covered multiple aspects of safety including concerns with the chargepoint itself, the environment surrounding the chargepoint and the safety of the chargepoint in scenarios where it had been vandalised i.e., exposed wires.

Concerns relating to the environment were primarily raised by female respondents. This concern covered the site of the chargepoints themselves and the walk between

the chargepoint and the resident's home. The presence of lighting, security camaras and placing the chargepoints in non-isolated locations were commented as measures to reduce these concerns.

Respondents commented that preventing the usage of EV parking spaces by petrol and diesel cars and EVs that are not charging would be important. Respondents suggested measures to prevent this problem included fines, waiting restrictions on parking spaces and ensuring idle fees are in place in high turnover areas for EVs that have finished charging.

Multiple respondents reported wanting chargepoints to be located close to local facilities and amenities such as shops and toilets.

Respondents also requested chargepoints be placed under shelter to prevent being exposed to bad weather when using and paying to use the chargepoint.

Respondents reported wanting up-to-date information on Zap-Map to know where chargepoints are located. This also extended to being able to access live information for when chargepoints are being used and if the bays are being occupied by other vehicles.

The final factor respondents reported as important was preventing footpath and cycle path space being taken away when installing chargepoints on public highway.

Do you have any further comments or suggestions about EV charging you'd like to share?

Respondents were asked to provide any further comments or suggestions on any aspect of EV charging that hadn't been addressed during the survey.

The factors outlined within question 10 were commonly restated by respondents. This primarily included reliability, use of an easy payment method such as contactless, competitive pricing and being able to charge quickly.

Some respondents expressed a desire for rural areas to be prioritised when installing chargepoints due to having limited access to public transport.

Respondents also requested that the placement of chargepoints within conservation areas is carefully considered and that any street furniture introduced accounts for the street scene and is non-obtrusive.

Some respondents also encouraged the placement of chargepoints in car parks wherever possible. This included LCC, District, Parish and privately owned car parks which are either free or pay to enter. Respondents also encouraged LCC to consider the additional cost burdens placed on EV owners with combined charging and parking costs.

The final factor raised was the consideration of solar energy generation opportunities in charging areas. This covered both the placement of solar panels on shelters over chargepoints and the opportunities to use them for sustainable power generation.

3.2.5 Demographic Information

Where do you live?

512 respondents reported living within Leicestershire (95%), 13 respondents reported living in the City of Leicester (2%), 1 respondent lived in Rutland (>1%), 10 (2%) respondents live outside of Leicester, Leicestershire, and Rutland and 4 respondents declined to answer (1%).

Of the 512 respondents reporting living in Leicestershire, 67 live in Blaby, 176 in Charnwood, 72 in Harborough, 69 in Hinckley & Bosworth, 47 in Melton, 71 in North West Leicestershire and 10 live in Oadby & Wigston.

Where do you work?

Of the 540 respondents, 91 respondents reported working in Blaby (17%), 121 in Charnwood (22%), 54 in Harborough (10%), 54 in Hinckley & Bosworth (10%), 30 in Melton (6%), 70 in North West Leicestershire (13%), 20 in Oadby and Wigston (4%), 8 in Rutland (1%), 60 in Leicester (11%) and 123 outside of Leicester, Leicestershire and Rutland (23%). 63 respondents provided no response the question (12%).

What is your gender?

322 respondents self-identified as Male (60%), 198 respondents self-identified as Female (37%), 5 respondents reported using a different term (1%) and 15 respondents declined to answer (3%).

What was your age on your last birthday?

5 respondents reporting being aged between 15 and 24 (1%), 41 were aged 25-34 (8%), 87 were aged between 35-44 (16%), 138 were aged between 44-54 (26%), 128 were aged between 55-64 (24%), 84 were aged between 65-74 (16%), 26 were aged between 75 and 84 (5%), 1 respondent reported being over 85 years of age (>1%) and 30 respondents declined to answer (6%).

What is your ethnic group?

477 respondents reported their ethnicity as being White (88%), 23 were Asian or Asian British (5%), 8 were Mixed ethnicity (1%), 11 were another unspecified ethnic group (2%) and 21 declined to answer (4%).

Do you have a long-standing illness, disability, or infirmity?

97 respondents reported having a long-standing illness, disability, or infirmity (18%), 423 reported not having a long-standing illness (78%), disability or infirmity and 20 declined to answer (4%).

Are you a carer of a young person aged 17 or under?

146 respondents reported being a parent or carer of a young person aged 17 or under (27%), 376 reported not being a parent or carer of a young person aged 17 or under (70%) and 18 declined to answer (3%).

Are you a carer of a person aged 18 or over?

59 respondents reported being a carer of a person ages 18 or over (11%), 461 respondents were not a carer of a person aged over 18 (85%) and 20 declined to answer (4%).

3.3 Suggested Recommendations

- Feedback received from the survey should steer the development and content of LCC's EV Charging Strategy and any associated chargepoint delivery plans.
- Consider actively tackling the identified barriers to purchasing an EV that are within LCC's control as the Local Highway Authority, such as the lack of local charging options available within the highway.
- Provide EV chargepoints on land LCC own or maintains, i.e. Public Highway and LCC owned sites, to help expand the network of public charging network across the county.
- Provide a form of on-street chargepoint provision to residents without access to off-street parking to replicate home charging as closely as possible.
- Focus the placement of chargepoints in more densely populated urban areas while ensuring rural areas are also catered for.
- Provide a form of high powered, rapid charging provision for residents.
- Explore, and facilitate where applicable, the provision of a form of charging hub provision for residents at car parks in centralised locations to the community.
- Adopt chargepoint design specifications and standards for EV infrastructure within the public highway to ensure chargepoints are accessible, easy to use and in attractive, safe locations.
- Encourage the provision of off-street hub chargepoints by working alongside District and Parish Councils.
- Explore opportunities to embrace new technology and other innovative charging solutions such as a cross-pavement charging solutions to allow residents to access an alternative form of home charging.
- Consider the placement of multiple chargepoints at a location to account for future demand.

Following on from this engagement exercise, it will be important to maintain an open dialogue with local communities and for LCC to continue to actively seek and capture feedback through the EV section on LCCs website. Community engagement will help to understand the evolving needs and expectations of local residents, ensuring that the EV charging infrastructure installed by the LCC focuses on the user and effectively addresses their requirements.

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