COUNCILLORS' INFORMATION BULLETIN (FORMERLY SCRUTINY BULLETIN)

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The provision of this information does not override the authority of the Standing Orders as set out in the Council's Constitution. For example, Councillors remain entitled to ask for a specific item to be placed on a Scrutiny agenda, request a call-in or to ask questions of a Portfolio Holder.

If require further information please contact Jo Quinnell, Assistant Democratic Services Officer at democratic.services@exeter.gov.uk

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Councillors' Information Bulletin: 7 April 2025

Title of Update: City EV Infrastructure Plan

Relevant Officers: Jo Pearce, Net Zero Project Manager

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1. What is the update about?

The report is to inform members of the City EV infrastructure Plan commissioned in 2023. The purpose of the study was to determine the requirement for Electric Vehicle Infrastructure (EVI) across Exeter, to support city wide aspirations for EV Charging and to secure Local Electric Vehicle Infrastructure (LEVI) funding from government.

2. Background

A key factor in the transition to a zero-carbon future, includes the growth of EVs by ensuring all drivers are confident they can equitably access EV infrastructure. The approach outlined in this report will support the City Council to deliver consistent, accessible, and innovative EV infrastructure in their car parks, while advocating for integrated, comprehensive coverage across the city.

Previously LEVI funding was offered to all authorities to support expansion of EVI, with government grant criteria requiring LA's to provide a EV plan/strategy. However, funding rules changed, and whilst still a government priority, funding is awarded only to Tier One local authorities. Subsequently, Exeter CC together with Devon districts, have formed a collaboration with Devon CC and Torbay, to support the provisions set out in the City EV Infrastructure Plan.

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3. Current position

The City EV Infrastructure Plan's approach allows collaboration for resourcing bids into LEVI funding. To deliver consistent, accessible EV infrastructure in Exeter's car parks, a reliable EV charging service with comprehensive coverage across the city. To deliver on the Council's Corporate Plan, to improve air quality and pollution, and to support residents to take action and mitigate the impacts of climate change. Overall outcomes of the report include to:

- Analyse and summarise the context within which ECC will deliver EVI locally, regionally, and nationally, including funding sources and joint strategies;

- Baseline the current situation regarding road transport, Electric Vehicles (EVs), EV Infrastructure (EVI) and emissions;
- Project the number of EVs and EVI demand in the area;
- Calculate the benefits associated with the EV uptake;
- Analyse all council car parks and estimate the future infrastructure demand at the locations;
- Suggest an approach to EVI provision for residents without off-street parking;
- Analyse and make recommendations of potential commercial arrangements for the installation of EVI;
- Outline an implementation plan to deliver;

4. Future position

The implementation plan is a useful resource and already used to shape the Council's allocation of the joint district and Devon and Torbay LEVI funding bid. The LEVI Partnership project secured LEVI funding to provide fully funded EV Charging facilities and is currently being procured, delivery of which will commence across the city in 2025/26.

5. Are there any other options?

To explore alternative approaches to EVI, based on emerging technologies and trends, including market engagement to assess commercial opportunity if presented.

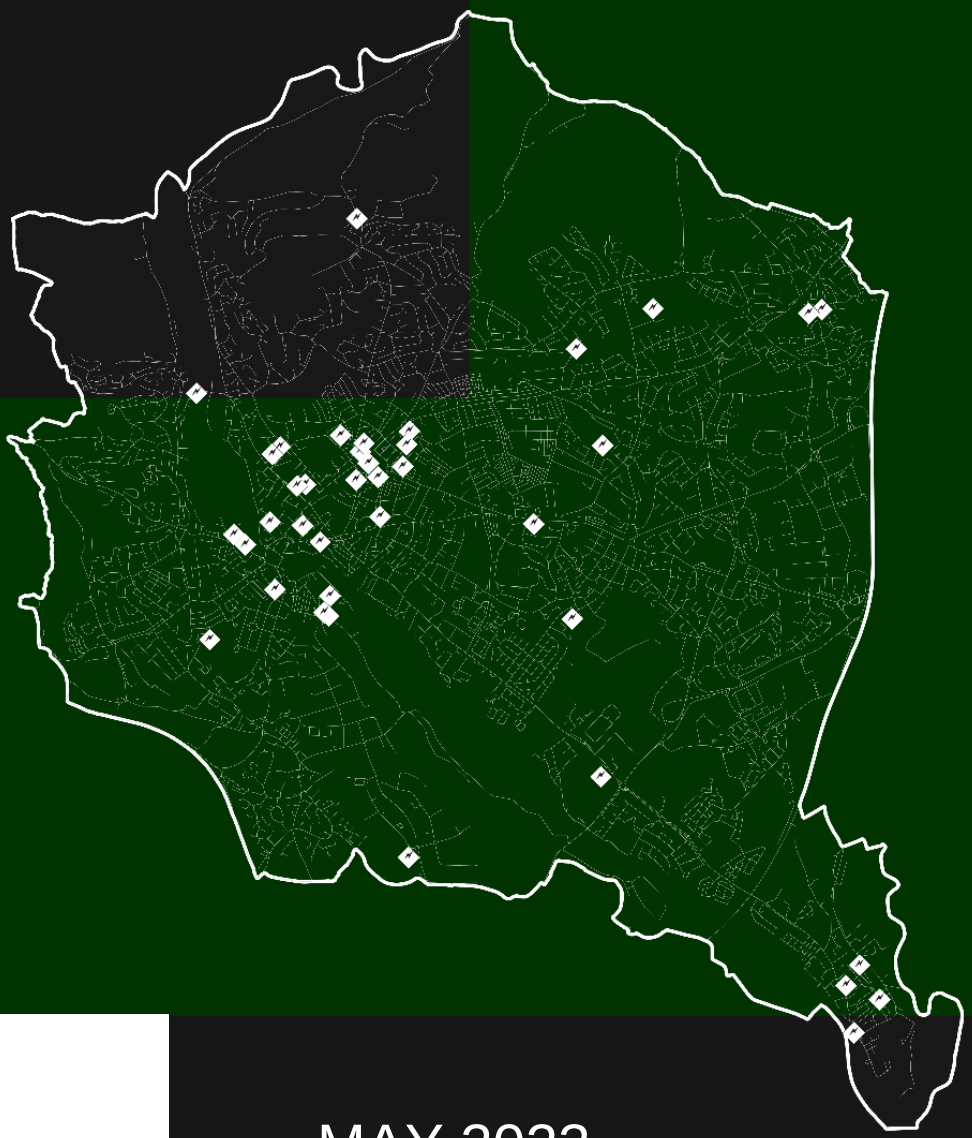
6. Conclusion

The report is shared and is to be used to advocate comprehensive EVI coverage across the city.

Attached : Exeter City Council EV Implementation Plan Report

Exeter City Council

EV INFRASTRUCTURE IMPLEMENTATION PLAN



cenex

MAY 2023

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Terms and Conditions

Document Revisions

No.	Details	Date
1	Final Draft	1st June 2023

Executive Summary

Cenex has supported Exeter City Council (ECC) to develop an Electric Vehicle (EV) Infrastructure Implementation Plan which:

- Evaluates the current policy context, vehicle parc and EV Infrastructure (EVI) across Exeter;
- Outlines EV uptake, infrastructure demand, location of need according to agreed scenarios;
- Projects possible environmental, air quality and economic benefits arising from the scenarios;
- Recommends key focus areas for action, best commercial arrangements, procurement approaches, potential funding sources, likely resourcing needs, and indicates stakeholder and community engagement actions; and
- Articulates an approach to engage with the LEVI Fund.

Policy Context:

An Implementation Plan is needed to respond to the latest national legislative announcements, to align with regional planning and to ensure that EVI activities deliver towards key local policies in Exeter. A review of these policies found that:

- ECC has a critical role to play in delivering the national strategy objectives for its residents so they can find and access EV charging easily, fair pricing, inclusive design, and continued innovation.
- The LEVI Fund is the largest central government funding mechanism, available via Devon County Council, and could provide a significant investment in Exeter's EVI.
- ECC's Implementation Plan must align with the DCC EVI Strategy to ensure a coordinated approach for all of Exeter's residents and businesses.
- Exeter is a forward-thinking and innovative city, which has ambitious plans to transform transport of people and goods over the coming years. The EVI Implementation Plan must support and help to deliver these aims, as articulates in the Exeter Vision 2040, Exeter Transport Plan and ECC Carbon Footprint Report.

More details on the policy context can be found in Section 2 (page 10).

Objective and Aims

Exeter currently leads regional EV uptake across Devon, despite lacking good coverage of the current public charging network and DNO capacity constraints. A clear focus on the delivery of EVI will be needed to both keep pace with current demand and prepare Exeter for the projected sixfold increase in EVs by 2030 compared to today. To support this growth, around 1,500 public charging sockets are projected for 2030, especially in central locations and towards the edges of the city.

To support this transition, the overall objective and guiding aims for the implementation plan are:

Leveraging council assets: ECC aims to use its existing assets, such as council-owned car parks, to serve the needs of the EVI users effectively. This includes extending its ownership of EVI infrastructure and associated renewables to create a sustainable and efficient EV charging network.

Ensuring consistency across Exeter: ECC aims to provide a consistent and reliable EV charging service across Exeter, ensuring that all EV drivers have access to high-quality charging infrastructure.

Catalysing sustainable EV uptake: ECC aims to provide a comprehensive and sustainable infrastructure to support the adoption of EVs in Exeter, while minimising the reliance of private vehicle use in the city centre.

Being innovative, integrated, and accessible: ECC aims to be innovative in its approach to EV charging infrastructure, exploring emerging technologies and trends to provide an integrated and accessible service for all EV drivers in Exeter.

Generating income for reinvestment: ECC aims to generate income from EV charging and reinvest it in net-zero projects, creating a new revenue stream to support the city's sustainability goals.

Having a low environmental impact: ECC aims to minimize the environmental impact of the EVI by using renewable energy sources and promoting sustainable practices in the construction and maintenance of charging infrastructure.

Exeter City Council will deliver consistent, accessible, and innovative EV infrastructure in their car parks, while advocating for integrated, comprehensive coverage across the city.

This emphasises the following themes:

- **Consistent**, where the user experience is recognisable and familiar across the city.
- **Accessible**, by ensuring all users have access to the EVI and are not limited by any factors such as geographical location, socio-demographic status, or disability.
- **Innovative**, through the application of new ideas and approaches to improve the service.
- **Integrated**, with other EVI providers and modes of transport across the city.
- These aspects come together to ensure **Comprehensive Coverage** across the city.

Focus Areas

Four Focus Areas have been identified to deliver the objectives and aims:

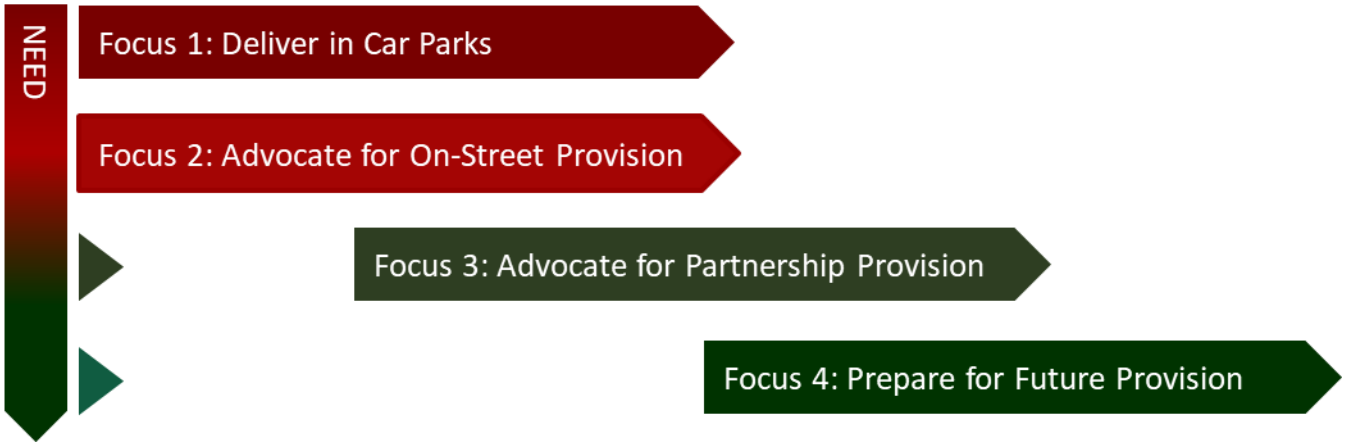


Figure 1 Delivery focus areas

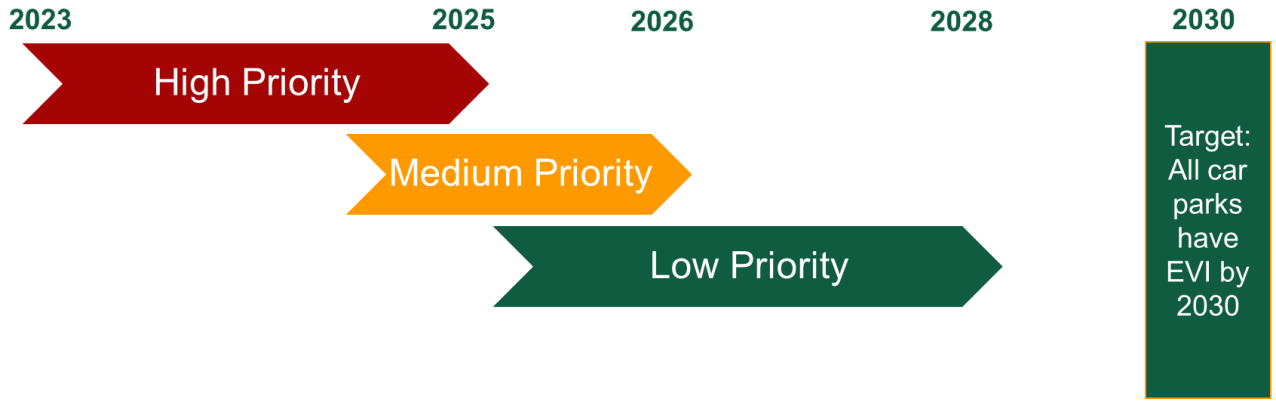
These are summarised as follows:

- **Focus 1** – ECC will leverage its land and assets to deliver standard and fast EVI across their car parks, evolving them to be AC charging locations, charging hubs and multi-modal transport hubs. Around 200 charging sockets will be needed at a total capital cost of £2m plus DNO costs in a programme targeting completion by 2030.
- **Focus 2** – ECC will advocate for provision in areas identified as being in high need of residential charging in the next two to four years through on-street provision by Devon County Council. This will particularly serve areas with a high prevalence of terraces with non-dedicated parking, terraces/semi-detached housing with dedicated parking at a distance, and terraces/semi-detached with non-dedicated parking at a distance. A mix of pedestal chargers, cable channels and lamppost chargers are the best-suited solutions.
- **Focus 3** – ECC should work in partnership with local businesses and organisation to provide charging infrastructure in areas not served by car parks, including workplaces, supermarkets, large public institutions and other high-traffic locations. Deploying charging hubs such as those in Focus 1 with a mix of standard, fast and some rapid provision may be worth exploring with partner organisations to ensure comprehensive coverage across the city by 2035.
- **Focus 4** – ECC should prepare for future EVI need and plan for provision beyond 2030 in lower demand areas not addressed by Focuses 1 to 3. This will require further analysis and are likely to need a variety of charging solutions on-street, in car parks, with partners and from the private sector.

More details on the overall Implementation Plan can be found in Section 7 (page 31).

Phased Implementation Approach for Focus 1

In particular, ECC will be active in Focus 1 as the area in which it has greatest direct control. A three-phase plan has been created to deliver EVI in all ECC-owned car parks by 2030, with car parks allocated High, Medium and Low priority to guide delivery:



Additional considerations for Focus 1 have been highlighted for consideration, including:

- Consolidating infrastructure where car parks are in close proximity;
- Ensuring provision for residence, private drivers and commercial vehicles are balanced;
- Exploring how supporting technologies such as on-site generation, battery storage, load management, lighting, CCTV and canopies can enhance the charging experience for users;
- Integrating these deliveries with parking payment systems, consistent pricing, wider transport subscriptions, 'Park and Charge' permitting, anchor loads and city-wide EVI signage.

All the activities should conform to relevant standards, permissions and regulations for accessibility, customer experience, electrical standards, health and safety, operational safety and fire safety.

More details on the specifics of Focus 1 can be found in Section 7.2 (page 32).

Action Plan

A set of actions has been created as an actionable task list to guide ECC in implementing the plan.

Focus 1: Delivery in car parks	
Conduct site assessments, including surveys.	☐
Engage with commercial drivers and car club operators to understand their needs and requirements for EVI.	
Engage with the DNO on the scope and scale of the proposed programme.	☐
Develop an outline business case for EVI in car parks.	☐
Develop an outline business case for supporting solar generation, and storage.	☐
Develop generic site designs which can be adapted to specific sites.	☐
Explore, develop, and implement supporting initiatives.	☐
Focus 2: Advocate for on-street provision	
Conduct further analysis to understand the demand for on-street EVI.	☐
Work with DCC to establish appropriate locations and technologies for on-street EVI in Exeter.	☐
Focus 3: Partner for wider provision	
Develop an external partnership working group for coordination and best practice sharing.	☐
Develop ECC principles for EVI in Exeter.	☐
Engage local stakeholders to ensure demand is identified and acted-upon.	☐
Focus 4: Prepare for future deployments	
Establish a monitoring process, to inform future EVI roll out.	☐
Engage local stakeholders for potential partners and possible locations for EVI in low demand areas.	☐
Advocate for lower demand areas to be incorporated into DCC LEVI bid by means of additionality.	☐

Prepare for implementation	☐
Determine the commercial arrangement(s):	☐
Action: Assess and understand the commercial arrangements, to review and approve the External Operator model.	☐
Action: Conduct due diligence, ensuring that the council is willing and able to deliver using this model.	☐
Determine the funding approach and seek to secure additional funding:	☐
Action: Determine the funding approach for the EVI programme, as per the options described on page 57.	☐
Action: Develop the business case for securing additional funding and/investment.	☐
Action: Secure additional funding to support the implementation and operation of the programme.	☐
Access LEVI funding:	☐
Action: Engage with DCC to contribute to the LEVI Capital fund EOI.	☐
Action: Prepare to contribute to the full Capital application, ensuring Exeter's delivery priorities are met within the constraints of the fund.	☐
Action: Develop a close working relationship with Devon County Council's EV team.	☐
Resource the EVI programme:	
Action: Seek LEVI Capability funding to support the increase in staff required to deliver the programme.	
Action: Develop the business case for ECC to fund and allocate resource to EVI planning and delivery.	☐
Action: Ensure resource provision is applicable to the requirements of the chosen commercial arrangement. It is recommended that ECC have at least one dedicated, full time EVI Officer.	☐
Action: Identify key team members with applicable skills that can be allocated to support the EVI programme and define their roles and responsibilities clearly.	☐
Action: Identify any skills gaps and devise a plan to fill them, either by upskilling existing staff, recruiting new staff or contracting third party skills/expertise/suppliers.	☐
Action: Establish the structural mechanism to deliver.	☐
Community engagement:	
Action: Develop a community engagement plan that outlines when, how, and why and whether the community shall be consulted, informed or if other methods and inputs are required.	☐
Action: Implement the engagement plan.	☐
Industry stakeholder engagement:	☐
Action: Identify the prospective supplier groups required to deliver such as, chargepoint operators, maintenance contractors etc.	☐
Action: Engage prospective suppliers to ensure they align with the ECC delivery approach and commercial model.	☐
Action: Engage with industry stakeholders such as the DNO and energy suppliers.	☐
Procurement:	
Action: Determine the best approach to procurement for Exeter.	☐
Action: Begin market engagement.	☐
Action: Begin procurement for applicable suppliers for key areas the council will not conduct themselves.	☐
Action: Develop tender requirements or specifications.	☐
Action: Identify and procure delivery partners who will be responsible for the installation, operation, and maintenance of the charging infrastructure.	☐

More details on the action plan and LEVI-specific recommendations can be found in Section 9 (page 69) and Section 10 (page 72) respectively.

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Contents

1 Introduction

1.1 Brief

Exeter City Council (ECC) commissioned Cenex to develop an evidenced infrastructure implementation plan for the Exeter area. The purpose of this plan is to determine the requirement for Electric Vehicle Infrastructure (EVI) to meet ECC's aspirations for EVI delivery in the City.

The objectives of the study were to:

- Analyse and summarise the context within which ECC will deliver EVI locally, regionally, and nationally, including funding sources and joint strategies;
- Baseline the current situation regarding road transport, Electric Vehicles (EVs), EV Infrastructure (EVI) and emissions;
- Project the number of EVs and EVI demand in the area;
- Calculate the benefits associated with the EV uptake;
- Analyse all council car parks and estimate the future infrastructure demand at the locations;
- Suggest an approach to EVI provision for residents without off-street parking;
- Analyse and make recommendations of potential commercial arrangements for the installation of EVI;
- Outline an implementation plan to deliver;
- Conclude what aspects of the strategy would be suitable for a bid into the LEVI fund.

1.2 Scope of Work

To allow this specific piece of work to play its role within the wider tapestry of activities being carried out in Exeter, Devon and beyond, the work was scoped as following:

Study area: This report focuses on the ECC area.

Vehicle Category: This report focuses on EVI provision for cars and Light Goods Vehicles (LGVs, referred to as vans), but includes shared and multimodal transport, where applicable. Heavier vehicles, two-wheelers, three-wheelers, as well as non-road vehicles are out of scope, although considered in the analysis of the vehicle parc in Section 3.1.1 (page 13).

Technology: The report examines Battery Electric Vehicles (BEVs) and other Plug-in Vehicles (Other PiVs) which include Plug-in Hybrid Electric Vehicles (PHEVs) and range extended electric vehicles. These are collectively referred-to as Electric Vehicles (EVs).

This scope has been defined to ensure that the proposed project is targeted and focused on the specific needs of Exeter City.

1.3 Navigation

Key conclusions, recommendations or takeaways are highlighted like this.

! Important notes, assumptions and exclusions are highlighted like this.

2 Policy Context

In order to position the proposed EV Infrastructure (EVI) Implementation Plan for Exeter City Council (ECC) within the broader context of existing policies and initiatives related to EV infrastructure development, a literature review was conducted. This will help to ensure that the resulting Implementation Plan is aligned with the strategic goals of Exeter City Council and has the necessary support to be successfully implemented.

This review focused on relevant national, regional, and local documents related to EV infrastructure and identified key observations and implications for ECC.

2.1 National Policy

The UK EV Infrastructure Strategy, "Taking Charge," aims to increase access and convenience of EV infrastructure through widespread deployment of EV infrastructure, effortless on- and off-street charging, fair pricing, inclusive design, a market-led rollout, integration into the smart energy system, and continued innovation. The strategy seeks to create a sustainable, accessible, and reliable EV infrastructure for all citizens of the UK.

> ECC has a critical role to play in delivering the national strategy objectives for everyone to find and access EV charging easily, fair pricing, inclusive design, and continued innovation.

The Local EV Infrastructure (LEVI) scheme is a fund in England that aims to support the deployment of near-home EVI. The fund is open to local authorities and encourages large-scale, commercially innovative projects that leverage private sector investment.

LEVI has two main objectives: to increase the deployment of low-power, on-street charging infrastructure across England, and to accelerate investment and commercialisation in the local charging infrastructure sector. The program offers two types of funding: the LEVI Capital Fund, which launched in March 2023 with a £400m budget for tier 1 LAs, and the LEVI Capability Fund, which was launched on 21st Feb 2023 with a £50m budget for tier 1 LAs to help resource local authorities.

> The LEVI Fund is the largest central government funding mechanism and is available to Exeter via Devon County Council.

2.2 Regional Policy

Devon County Council (DCC) are the Highways Authority responsible for all roads and pavements in the county, including in Exeter City. By extension, this means that DCC are responsible for delivering on-street charging infrastructure.

DCC Draft EV Strategy[1]: The EV strategy for Devon suggests several ways in which DCC can support the uptake of EVs across the county. These include accelerating charge point deployment, focusing on residential charging, providing on-street residential chargers and off-street residential hubs, testing on-street residential pavement gullies. The EV strategy for Devon also suggests delivering these measures through a concession approach with a private sector delivery partner, leading on local district coordination, intervening in areas where there are grid constraints, higher EVI need, lack of off-street parking, or gap between supply and demand, and prioritising Exeter as a location for all the above factors. DCC forecast the need for 2,000 EV chargepoints (EVCP) across the county by 2030 of which 270 are within Exeter.

> ECC's Implementation Plan must align with the DCC EVI Strategy to ensure a coordinated approach for all of Exeter's residents and businesses.

2.3 Local Policy

Exeter Vision 2040: The Implementation Plan should support the vision to be a sustainable, healthy, inclusive, connected, and innovative city.

[1] Corporate websites - Devon EV Strategy consultation draft.pdf - All Documents (sharepoint.com) (Accessed 16/03/23)

Exeter Transport Plan: The city of Exeter is committed to promoting greater connectivity and linking public transport to provide better places for people to live in. The focus is on shifting towards more active and healthy travel options. Currently, the population is well-served by cycle, bus, and train services, and the majority of commutes are made using sustainable modes. The city is witnessing a decline in car usage, which is a positive trend towards reducing carbon emissions. Exeter is strategically positioned as a gateway to the peninsula, making it the second-largest travel-to-work area in the region. To make travel easier and more flexible, the city is also working on promoting greater innovation, which includes the introduction of a zero-emission transport subscription service for shared low-carbon transport. Additionally, the strategy commits to the development of an Electric Vehicle Strategy to encourage the use of sustainable transport options. These measures seek to contribute towards a cleaner and more sustainable transport system in the city of Exeter.

Exeter Car Park Baseline Report aims to maintain or increase revenue from parking. The report identifies several EVI related opportunities to achieve this goal, including implementing emission-based parking tariffs, improving car park signage, ensuring consistent parking charges, establishing rail-based park and ride sites, and encouraging short commuter distances to switch to active or sustainable modes of transportation.

Exeter City Council Carbon Footprint Report explores multiple sectors to reduce carbon emissions, of which there are three sectors applicable to EVI: transport, procurement, and renewable energy. It proposes electrifying all modes of transportation in Exeter and using quality data to assess carbon impacts. While the report does not extend to public vehicles beyond staff commuting, it highlights the importance of using greenhouse gas emissions as part of the supplier selection process. Additionally, the report recommends solar PV as the primary source of renewable energy, with plans for extensive sites.

Peninsular Transport Strategy: The publication is overdue, but it is anticipated to have implications for Exeter, and it should be examined upon its release to the public.

> Exeter is a forward-thinking and innovative city, which has ambitious plans to transform transport of people and goods over the coming years. The EVI Implementation Plan must support and help to deliver these aims.

2.4 Implications for Exeter

These policies have important implications for ECC and the proposed EVI Implementation Plan. By aligning with national policies and initiatives, collaborating with regional partners, and building on existing local initiatives, ECC will need to lead the development of sustainable and low-emission transport infrastructure in three distinct ways:

Collaboration with Devon County Council

ECC will need to collaborate with DDC to deliver on-street infrastructure and to access LEVI funding. Exeter is a strategic key to delivering infrastructure across the county and to develop a commercially viable LEVI bid for the county. Therefore, ECC should seek to build a close working relationship with DDC and ensure the needs of Exeter are reflected and met in the LEVI application and subsequent delivery. LEVI Capital and Capability Funds are important sources of support for ECC, even if administrated via DCC.

Alignment of EVI with Parking Strategy

Locally, the EVI Implementation Plan should strategically align with identified parking opportunities. For example, ECC could add EVI information to parking signage to encourage EV owners to use the car park. Moreover, introducing consistent payment methods across all car parks in Exeter could simplify the process of paying for EV charging services. Residential park-and-charge facilities should also be included.

Support the delivery of the Transport Strategy

The EVI Implementation Plan is an important component of the Transport Strategy. As part of this plan, ECC should provide for shared modes of transport, such as car clubs, as well as explore

multimodal hubs, to support the city's wider shift towards promoting healthier travel options and reducing car dominance. Additionally, ECC should explore ways to integrate charging infrastructure into the wider priorities for greater connectivity and innovation, such as the zero-emission transport subscription service. ECC should also seek partners committed to net-zero and renewable energy integration.

2.5 Overall Aims

With these three policy implications arising from the national, regional and local context, EVI delivery in Exeter must ensure the wider needs of the city and its drivers are met effectively while contributing to its net-zero goals.

Specifically, this will mean:

- **Leveraging council assets:** Use existing assets, such as council-owned car parks, to serve the needs of the EVI users effectively. This includes extending its ownership of EVI infrastructure and associated renewables to create a sustainable and efficient EV charging network.
- **Catalysing sustainable EV uptake:** Provide a comprehensive and sustainable infrastructure to support the adoption of EVs in Exeter, while minimising the reliance of private vehicle use in the city centre.
- **Generating income for reinvestment:** Generate income from EV charging and reinvest it in net-zero projects, creating a new revenue stream to support the city's sustainability goals.
- **Ensuring consistency across Exeter:** Provide a consistent and reliable EV charging service across Exeter, ensuring that all EV drivers have access to high-quality charging infrastructure.
- **Having a low environmental impact:** Minimize the environmental impact of the EVI by using renewable energy sources and promoting sustainable practices in the construction and maintenance of charging infrastructure.
- **Being innovative, integrated, and accessible:** Innovatively approach to EVI, exploring emerging technologies and trends to provide an integrated and accessible service for all EV drivers in Exeter.

3 Current Status

The policies and their implications for Exeter set the context within which this Implementation Plan must deliver and the overall aims for the Council.

This section examines the vehicle parc and EVI in Exeter to give a baseline snapshot of the current status, with relevant comparisons to Devon and the UK.

! **Note:** All data is accurate and up to date at the time of writing (April 2023), but updated values are available to council staff through Cenex's NEVIS service[2]. The vehicle parc data is based on Q3 2022, which are the most up-to-date data from DfT at the time of writing.

3.1 Vehicles

3.1.1 Vehicle Parc Composition

Table 1 and Figure 2 illustrate the number and type of vehicles registered in Exeter, Devon, and the UK for Q3 2022.[3]

The data show that cars are by far the most common vehicle type in the region, followed by LGVs.

Table 1: breakdown of the number of vehicles by body type and area

	Cars	LGVs	HGVs	Motorcycles
Exeter	64,034	14,376	518	2,892
Devon	453,051	92,217	7,208	26,791
UK	33,154,687	4,633,551	539,660	1,458,477

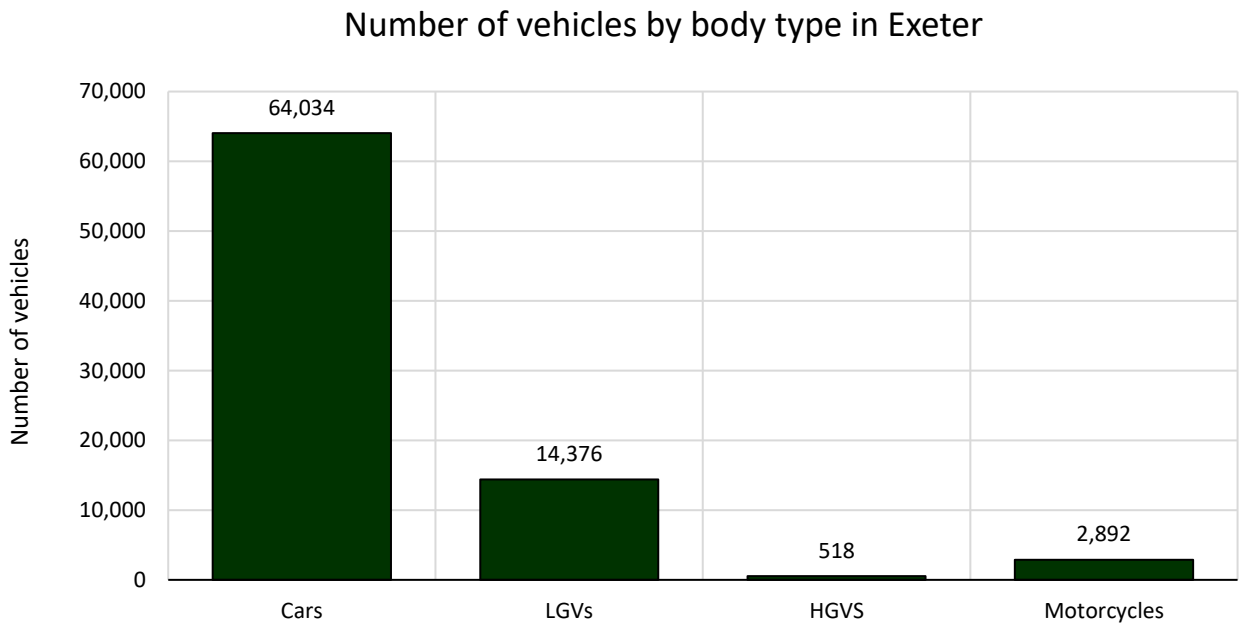

Figure 2: Vehicle parc in Exeter

The primary focus of this EVI Implementation Plan will be on cars and light-goods vehicles, which represent most of the registered vehicles in Exeter.

[2] https://nevis.cenex.co.uk/insights accessed 16th March 2023
[3] VEH0105, DfT & DVLA, https://www.gov.uk/government/statistical-data-sets/vehicle-licensing-statistics-data-tables accessed 16th March 2023

3.1.2 EV Penetration

Table 2 shows the breakdown of EVs in Exeter, Devon and the UK.

Table 2: Breakdown of EVs in Exeter, Devon, and the UK

	Total Vehicles (Cars and LGVs)	Total BEVs (Cars and LGVs)	% cars and LGVs that are BEVs	Total other PiVs (Cars and LGVs)	% cars and LGVs that are other PiVs	Total EVs (Cars and LGVs)	% All cars and LGVs that are EVs
Exeter	78,410	702	0.90%	1,105	1.41%	1,807	2.30%
Devon	545,268	4,775	0.88%	3,620	0.66%	8,395	1.54%
UK	37,788,238	586,982	1.55%	393,359	1.04%	980,341	2.59%

EV uptake in Exeter is 2.3%, which is below the national average (2.6%) but above the average for Devon (1.5%).

3.2 EV Infrastructure

3.2.1 Chargepoint Power Categorisation

The power of chargepoints is classified below, in accordance with OZEV's categorisation:

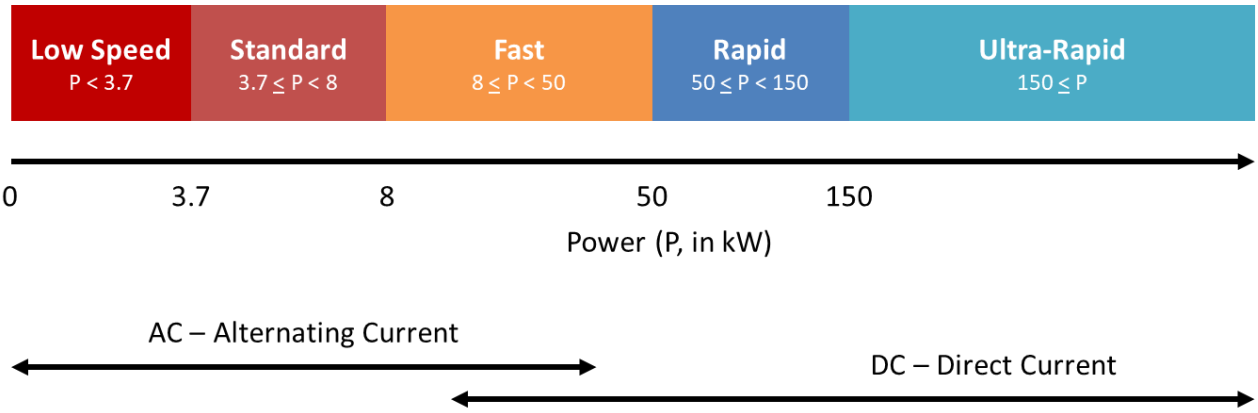

Figure 3: Chargepoint classification criteria according to power

3.2.2 Current EVI Coverage

Current EVI provision in Exeter was identified using data from the National Chargepoint Registry[4]

The existing EVI across the study area is not evenly distributed (Figure 4, below). The majority of chargepoints are located towards the city centre, leaving areas of housing without nearby chargepoints. These include the areas around and including Heavitree, Countess Wear and Topsham, as well as the areas across the river Exe from the city centre, including Foxhayes and Redhills. There is also limited provision of EVI in the areas immediately outside of the Exeter City boundary.

There are 57 publicly accessible sockets installed in Exeter. This represents approximately 32 EVs per socket in Exeter, in comparison to the UK average of 9 EVs per socket. Of these, roughly 32 are standard units, 18 are fast chargepoints, and 7 are 50 kW rapid chargepoints.

[4] https://chargepoints.dft.gov.uk/login, DfT, 2023 accessed 16th March 2023

Some of these chargepoints are owned by Exeter City Council and have offered free charging since installation in 2014 until fees were introduced recently. These chargepoints are likely coming to their end of life, are limited in number, and are unevenly distributed.

There is only a small amount of EVI in Exeter and there are significant areas lacking any EVI.
Provision of EVI is very likely to include replacing existing, old chargepoints which will improve confidence in EVI and support the potential for EV uptake in Exeter.

Existing Public EV Infrastructure in Exeter

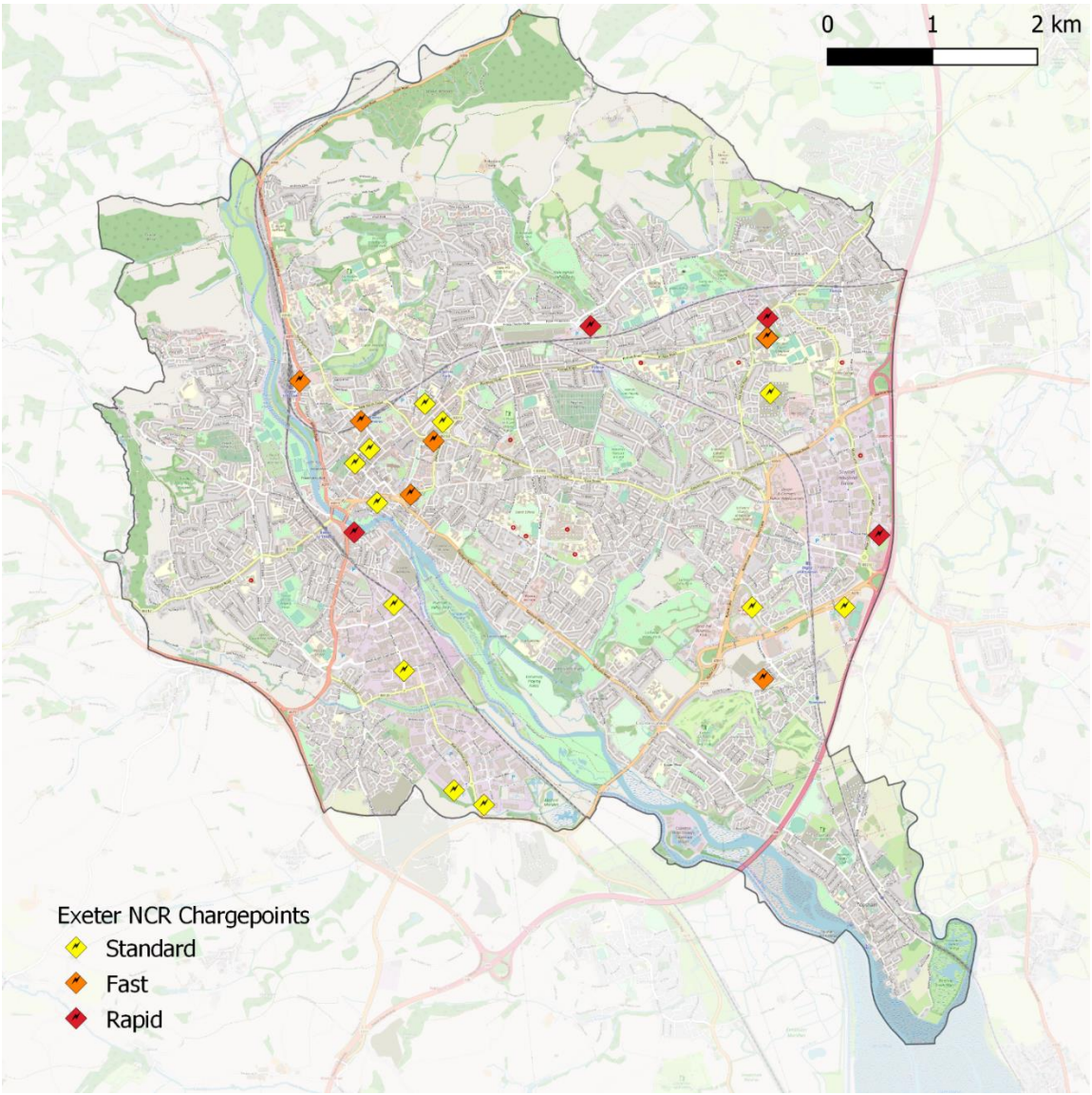

Figure 4: Map showing existing chargepoints in Exeter from the NCR

3.2.3 Grid Capacity

The installation of EVI requires the grid to have available capacity to allow the infrastructure to be served. In areas where there is insufficient capacity, connection upgrades or even new substations can be required which can add time, cost, and complexity to EVI installations. It is preferable to install EVI in areas with sufficient grid capacity to mitigate these factors.

Exeter's excess substation capacity was provided by National Grid Electricity Distribution (NGED) through their EV Capacity map[5], which is replicated in Figure 5 below. This shows 29 substations within the city have low substation capacity, as displayed by the yellow dots below. Roughly 509 substations in the city have medium-to-high excess capacity, with a majority of 324 having extensive capacity available.

The main areas of low capacity are within the city centre, with the areas of housing surrounding having mostly medium capacity. The areas of extensive capacity are generally further out from the centre, though there are a significant number of substations in the city centre having extensive capacity also.

NGED data[6] for demand and generation capacity for higher-level primary substations in Exeter show issues with both generation and demand capacity, especially around the city centre, as mentioned in the draft Devon EV Strategy document[7]. This may be a limiting factor for installations of EVI and included generation such as solar PV. As such, some sites may not be viable for installation of rapid chargepoints, though this is likely to be on a site-by-site basis.

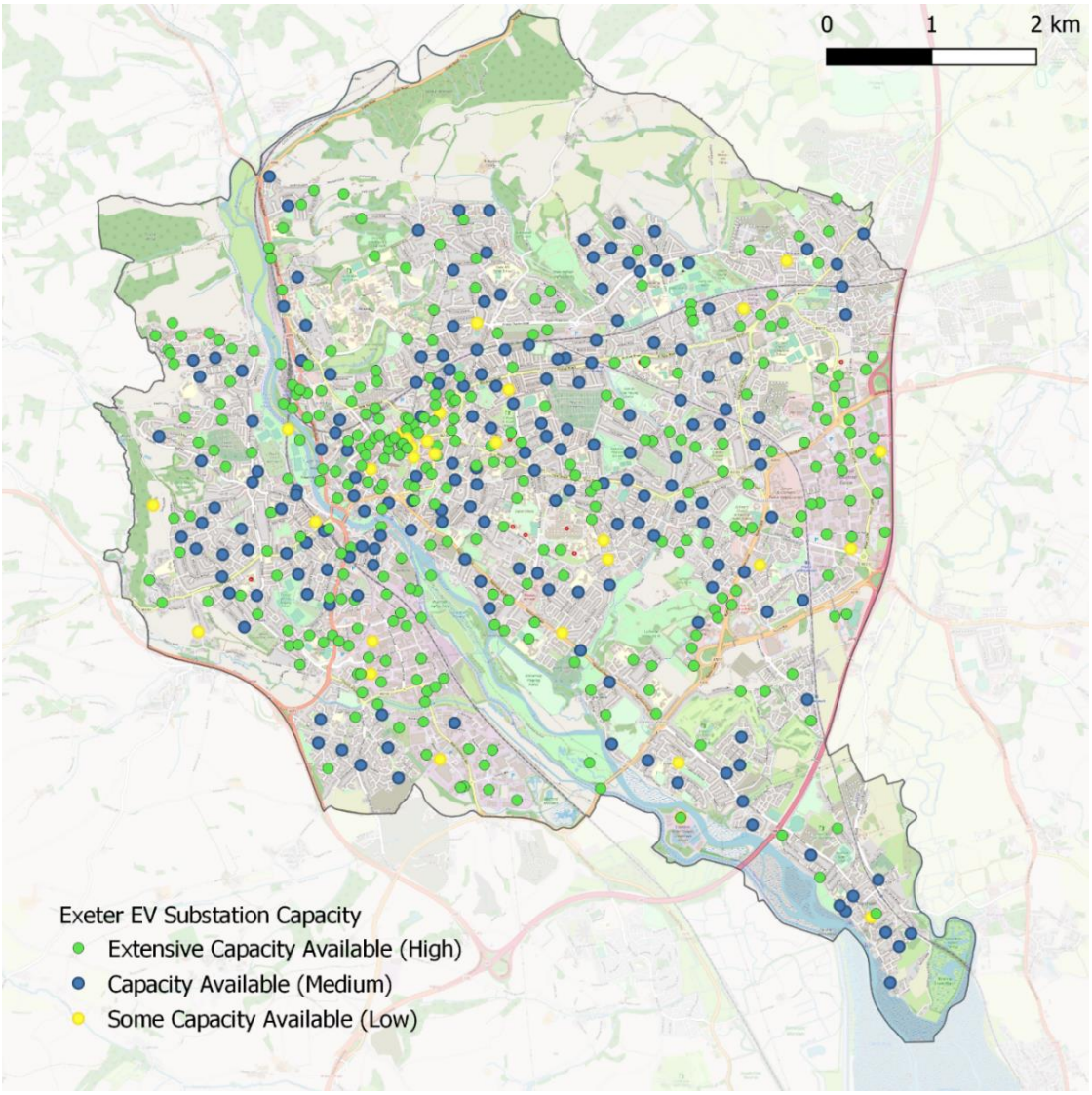

Figure 5: Excess substation capacity in Exeter

[5] https://www.nationalgrid.co.uk/smarter-networks/electric-vehicles/ev-capacity-map, NGED, 2023, accessed 16th March 2023

[6] National Grid - Network Capacity Map Application accessed 23rd March 2023

[7] Devon Electric Vehicle Charging Strategy - Have Your Say accessed 23rd March 2023

3.2.4 DNO Engagement

Early engagement with the Distribution Network Operator (DNO) offers a range of benefits for electric vehicle infrastructure (EVI) planning and deployment. By engaging early, ECC can gain valuable insights into potential network upgrade requirements, as well as any constraints that may impact the plans. This helps to avoid costly design changes and unpicking committed spend later down the line. Additionally, early engagement ensures that ECC are aware of any connection queues in the area and potential lead times, giving ample time to plan ahead. Moreover, early engagement helps ensure that the planned connection size is suitable for future expansion, promoting a "build it once, build it right" philosophy. Finally, DNOs may be able to provide alternative connection options that can reduce the overall cost of the EVI deployment, such as timed connections and flexibility options.

National Grid Energy Distribution were contacted on ECC's behalf to obtain initial guidance for installing infrastructure. However, at the time of writing, no response has been received.

3.3 Summary

Vehicles
Cars are by far the most common vehicle type in the city, followed by vans. However, the Exeter vehicle parc is lagging behind the UK in average EV uptake, but it is ahead of the Devon average.
Current EV penetration in the UK is 2.59%, EV uptake in Devon is 1.54% and EV uptake in Exeter is 2.30%, meaning that ECC is leading Devon County in the transition to EVs.

Chargepoints
Public chargepoint network coverage is relatively uneven within the city and access to public charging varies significantly.
Current infrastructure is mostly standard chargepoints, with roughly 32 EVs per charging socket.

Grid Capacity
Substations across the city have varying capacity: 324 have extensive capacity, 185 have reasonable headroom, and 29 are constrained, many of which are in the city centre. While substations generally have good capacity, limitations at primary substations may affect the installation of rapid charging and energy generation. Engaging with the DNO will help clarify constraints and opportunities on a site-by-site basis.

4 Projections

Having established the current status, this section presents EV uptake projections and the implied likely infrastructure demand in the area as vehicles electrify.

! **Note:** All data is accurate at the time of writing (March 2023), but updated values are available to council staff through Cenex's NEVIS system.[8]

Three uptake curves were constructed which represent a local or national acceleration of transport decarbonisation, the current policy pathway and a slowing of local or national ambition (Figure 6), as follows:

- **High:** based on 100% of the sale of new cars and LGVs being EVs by an accelerated date of 2027;
- **Medium:** follows the ZEV mandate target of 100% of the sale of new cars and LGVs being EVs by 2030; and
- **Low:** based on the Road to Zero high target of 70% of the sale of new cars and LGVs being EV by 2030.

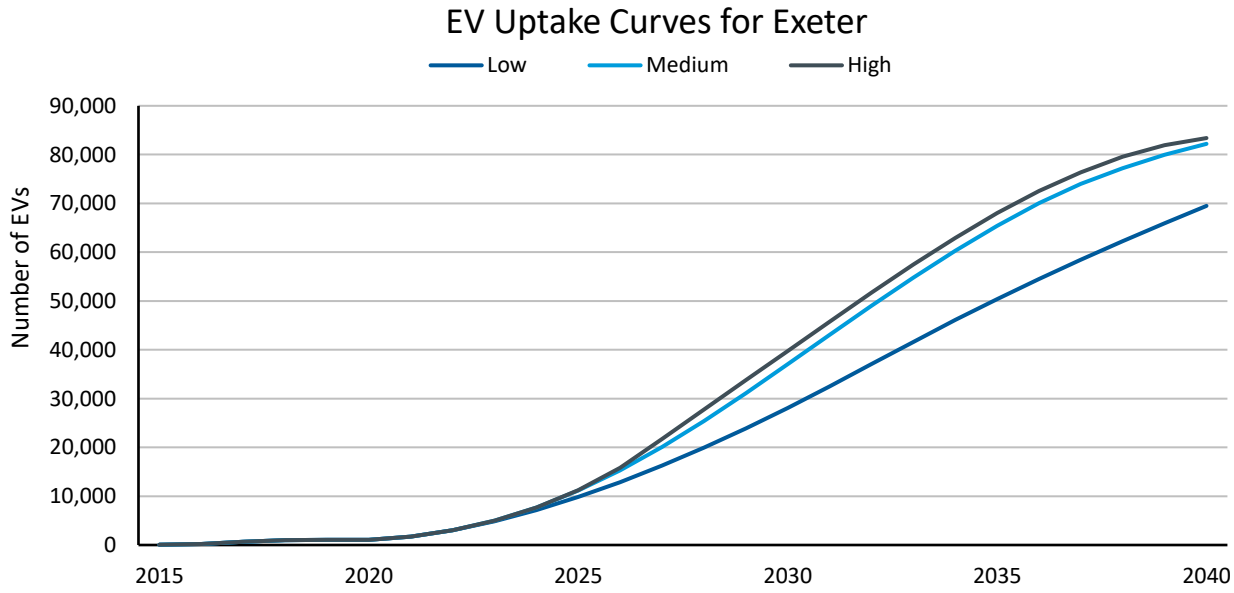

Figure 6: EV uptake curves

The medium uptake curve follows the ZEV mandate without assuming any acceleration in EV uptake, so has been selected as the most likely scenario for this Implementation Plan.

! All further analysis in this report is based on the **Medium** EV uptake curve.

4.1 EV Projections

The projected uptake of EVs in Exeter and transition of the vehicle parc is presented in Figure 7 (below).

[8] https://nevis.cenex.co.uk/insights accessed 16th March 2023

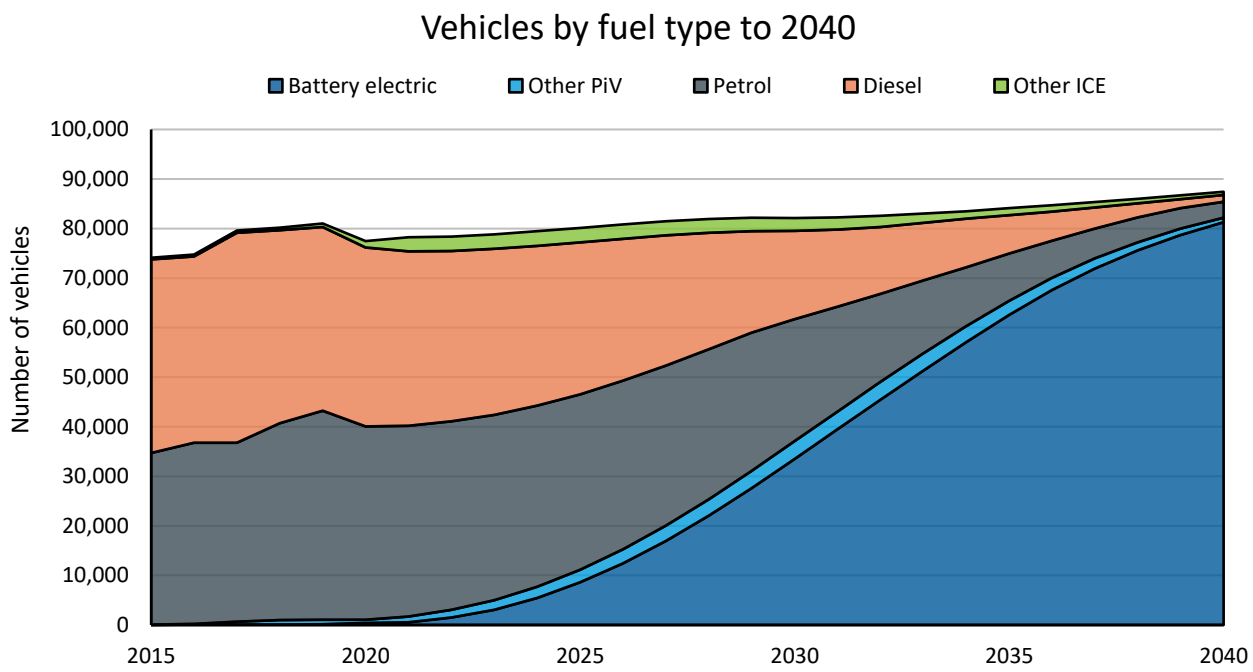

Figure 7: Exeter vehicle parc size grouped by fuel type.

Table 3: Projected number and percentage of cars and LGVs in the vehicle parc in Exeter by fuel type[9]

	Fuel Type	Q3 2022	%	2025	%	2030	%	2035	%	2040	%
Car	BEV	668	1.0	7,024	11.1	25,475	40.6	45,654	74.5	56,460	93.0
	Other PiV	1,101	1.7	2,440	3.8	3,242	5.2	2,420	4.0	673	1.1
	Petrol	38,561	60.2	34,890	54.9	24,145	38.5	9,225	15.1	2,959	4.9
	Diesel	20,466	32.0	16,260	25.6	7,244	11.6	2,608	4.3	0	0.0
	Other ICE	3,238	5.1	2,889	4.6	2,581	4.1	1,379	2.3	623	1.0
LGV	BEV	34	0.2	1,565	9.4	8,014	41.2	16,909	74.1	24,820	92.9
	Other PiV	4	0.0	105	0.6	347	1.8	414	1.8	253	1.0
	Petrol	554	3.9	526	3.2	483	2.5	352	1.5	229	0.9
	Diesel	13,777	95.8	14,393	86.7	10,598	54.5	5,125	22.5	1,402	5.3
	Other ICE	7	0.1	19	0.1	18	0.1	12	0.1	7	0.0

By 2025, around 11,000 EVs are estimated to be registered in the area, representing an electrification of just under 15% of the car parc and 10% of the LGV parc – a sixfold increase on the current number. This increases to 37,078 in 2030 (45.8% of cars and 43.0% of LGVs) and to 82,206 in 2040 (94.1% of cars and 93.9% of LGVs).

[9] Home - National EV Insight & Strategy | Delivered by Cenex, Projections from 2025 to 2040

A substantial growth in EV is projected in Exeter in the near future, with a sixfold growth in Electric Vehicles by 2025, and rapid growth projected in the second half of the decade.

4.2 EVI Projections

The estimated number and power of EVI that will be required to service the growing demand has been modelled based on the medium scenario.

The estimates are modelled using assumptions of the mean annual mileage, current and future EV battery sizes, proportion of off-street parking available, likely number of vehicles of different specifications and typical charging profiles. These assumptions allow the likely output by charger and charging sessions per day to be calculated, from which the volumes and type of infrastructure required to meet this demand can be evaluated. The full assumptions and projection methodology is included in Appendix A (page 80).

! **Note:** the projected number of EVI in this section represents the total demand for public charging across the city, not necessarily what might be delivered or procured by ECC itself.

Three different scenarios to EVI deployment are commonly adopted by LAs in the UK:

- **Residential** - a preference towards standard charging near-home
- **Hub-based** - a preference towards ultra-rapid charging, similar to the fuel station model
- A **blended** approach which is a middle ground between the two previous approaches

The **blended** scenario is judged to best represent the Devon County Council EV Strategy, so was utilised for this Implementation Plan to offer a mix of chargepoint speeds.

Figure 8 shows the projected total number and powers of charging sockets required to service the EV demand.

! **Note:** All infrastructure scenarios are calculated by number of **sockets**. Freestanding 7 kW chargers are typically fitted with two sockets, meaning that a requirement for 300 standard 7 kW sockets potentially only necessitates 150 standard 7 kW chargepoints.

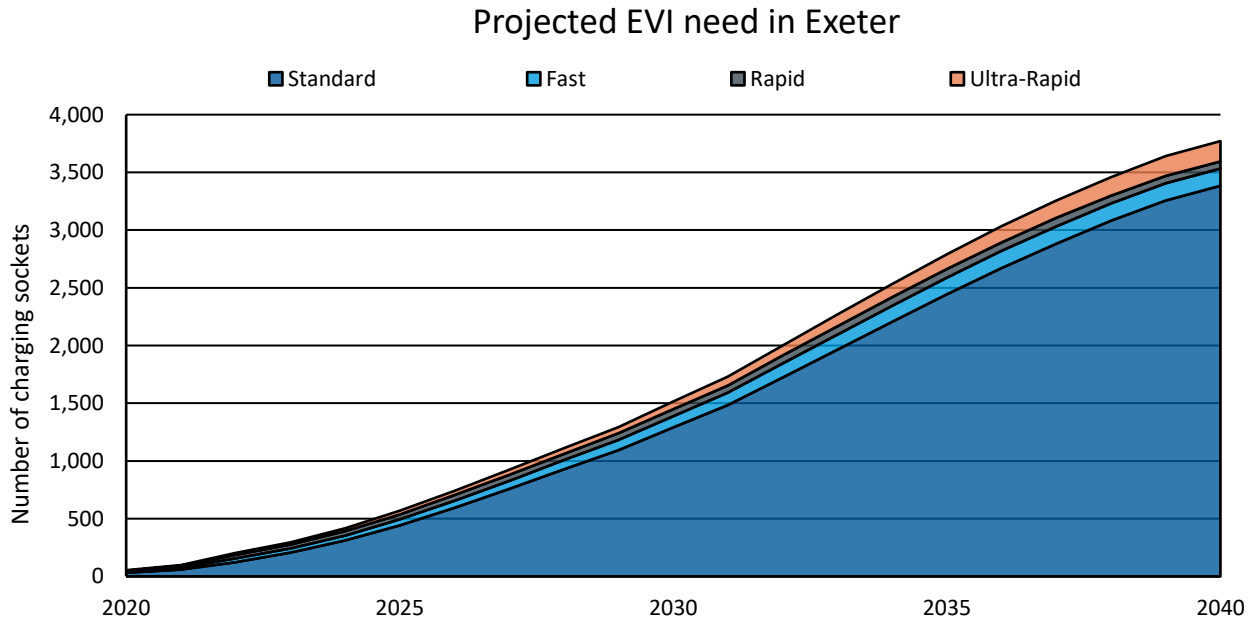

Figure 8: Projected charging sockets by category to 2040.

Table 4: Projected number of charging sockets by category to 2040

	Present	2025	2030	2035	2040
Standard	47	442	1,290	2,440	3,380
Fast	6	52	99	144	148
Rapid	4	43	60	75	61
Ultra-Rapid	0	31	66	127	178
TOTAL	**57**	**568**	**1,515**	**2,786**	**3,767**

Compared to the 57 current sockets, a substantial increase in the number of EVI sockets will be required as the share of EVs on the road increases. Many of these are projected to be standard 7 kW sockets to serve residents without driveways and businesses, since one 7 kW socket can only support fewer vehicles than a higher powered chargepoint.

4.3 Summary

EV Uptake: substantial growth in EVs is projected in Exeter in the near future
A sixfold growth in Electric Vehicles by 2025 in the Medium Projection
Rapid growth is projected for the second half of the decade.

Infrastructure: Required to increase significantly in response to the rising EV uptake.
The medium uptake curve, blended scenario represents a significant step-change in the number and rate of charging socket provision in response to rising EV uptake.
By 2025, around 600 sockets are projected to be needed, rising to 1,500 in 2030 and 3,800 in 2040.
The vast majority of these are standard 7 kW charging sockets, which provide the most efficient, convenient, and practical route to support the electrification of cars and vans, particularly in residential areas and long-stay car parks.

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5 Benefits

If EV uptake proceeds as projected and is facilitated by an expansion in EVI, Exeter may benefit from a wide range of environmental, air quality and social improvements. This section presents some of the benefits which may materialise.

5.1 Emissions Reductions

If EV uptake increases as projected in the medium scenario and blended approach, the resulting emissions reductions over a 2019 baseline can also be projected (Table 5).

! A 2019 baseline is used due to emissions in 2020 and 2021 being affected by the coronavirus pandemic.

Table 5: Projected emissions reductions in Exeter 2025-2040

	2025	2030	2035	2040
CO_2e	13.3%	44.8%	76.8%	92.0%
NO_X	28.3%	58.2%	83.6%	96.5%
PM2.5 - Tailpipe	35.6%	65.8%	86.3%	98.6%
PM2.5 - Wear	-8.93%	-12.5%	-17.3%	-24.4%

EVs can significantly reduce local pollutant and GHG emissions. Therefore, the projected CO_2e, NO_X and PM2.5 figures are displayed in Figure 9, Figure 10, Figure 11, broken-down by vehicle fuel type.

! 'Other PiVs' include plug-in-hybrid EVs and range-extended EVs, 'Other ICE' vehicles include fuels such as LPG or CNG.

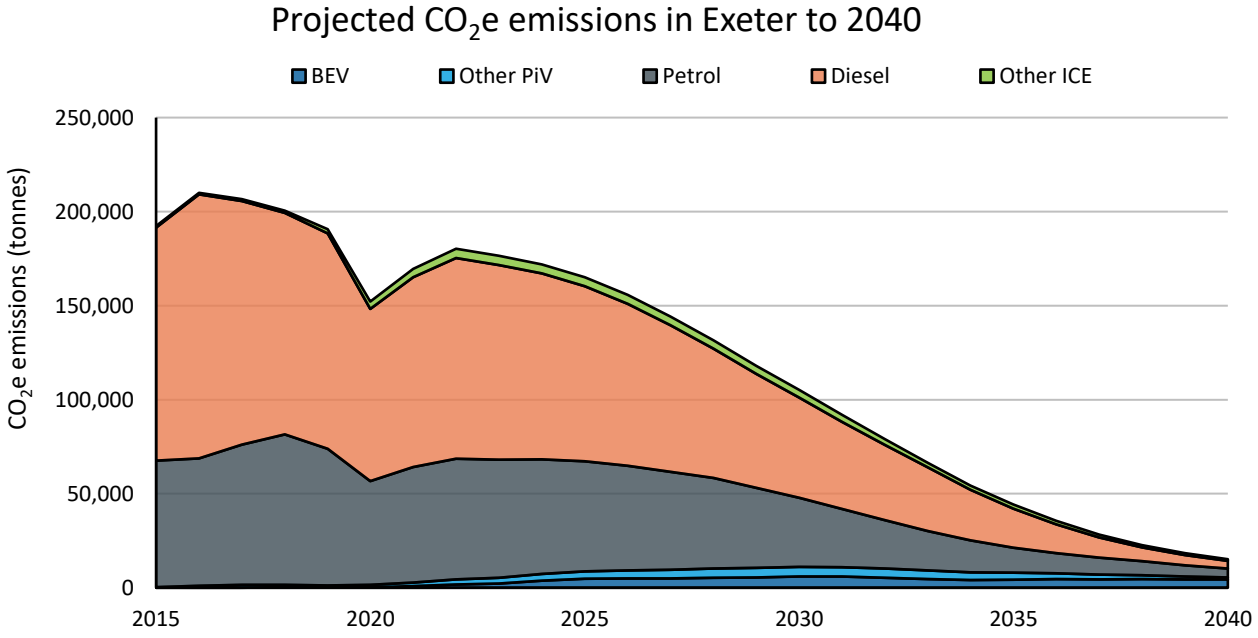

Figure 9: Historic and projected CO_2e emissions in Exeter 2015-2040

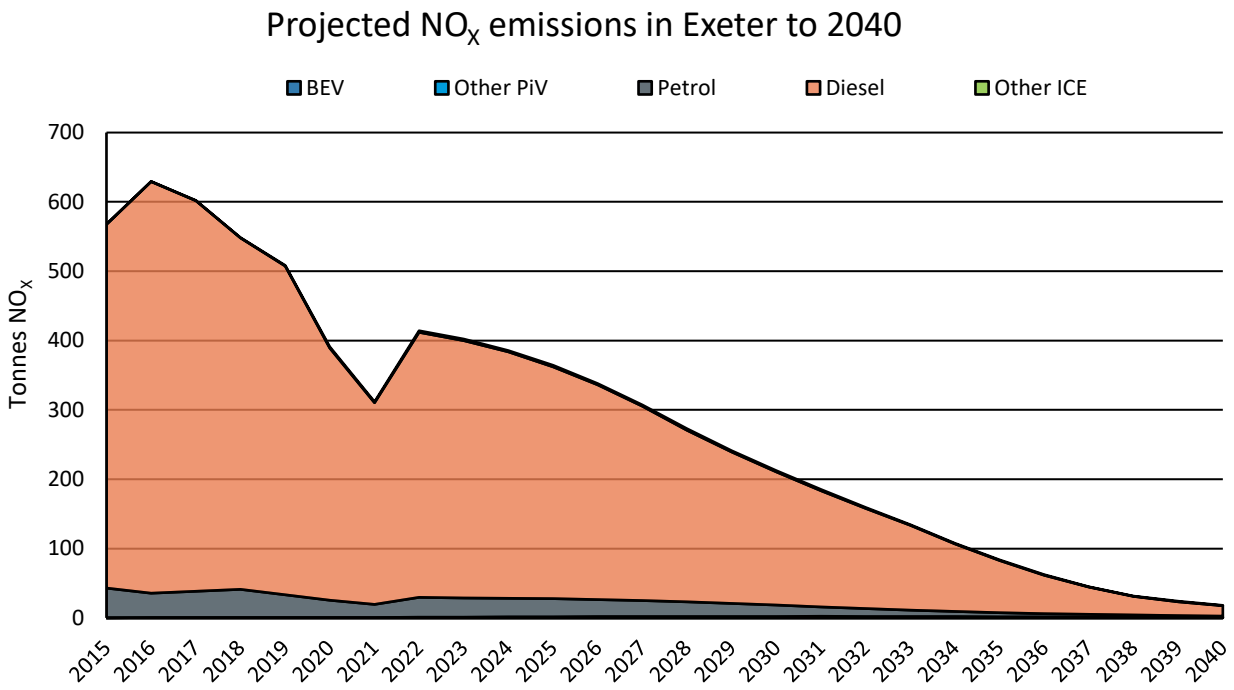

Figure 10: Historic and projected NO_X emissions in Exeter 2015-2040

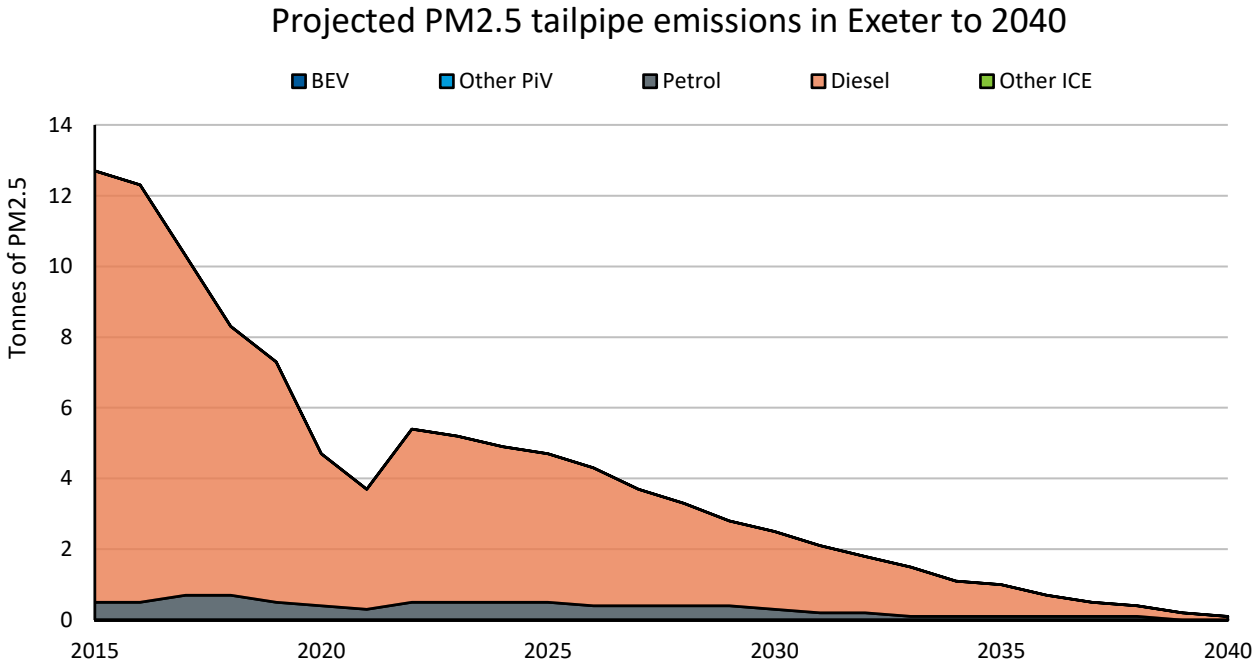

Figure 11: Historic and projected PM2.5 tailpipe emissions in Exeter 2015-2040

PM2.5 emissions from road, tyre, and brake wear were also calculated. As all road vehicles with tyres and brakes will produce these emissions, transitioning to EVs will not directly reduce the PM2.5 emissions from these sources. There is early evidence that EVs are less reliant on their brakes and that emissions from this source may reduce. However, EVs tend to be heavier than their ICE counterparts and therefore may offset this with higher emissions from road and tyre wear[10].

10 https://www.rac.co.uk/drive/electric-cars/running/do-electric-vehicles-produce-more-tyre-and-brake-pollution-than-petrol-and/, RAC, 2022 accessed 28th March 2023

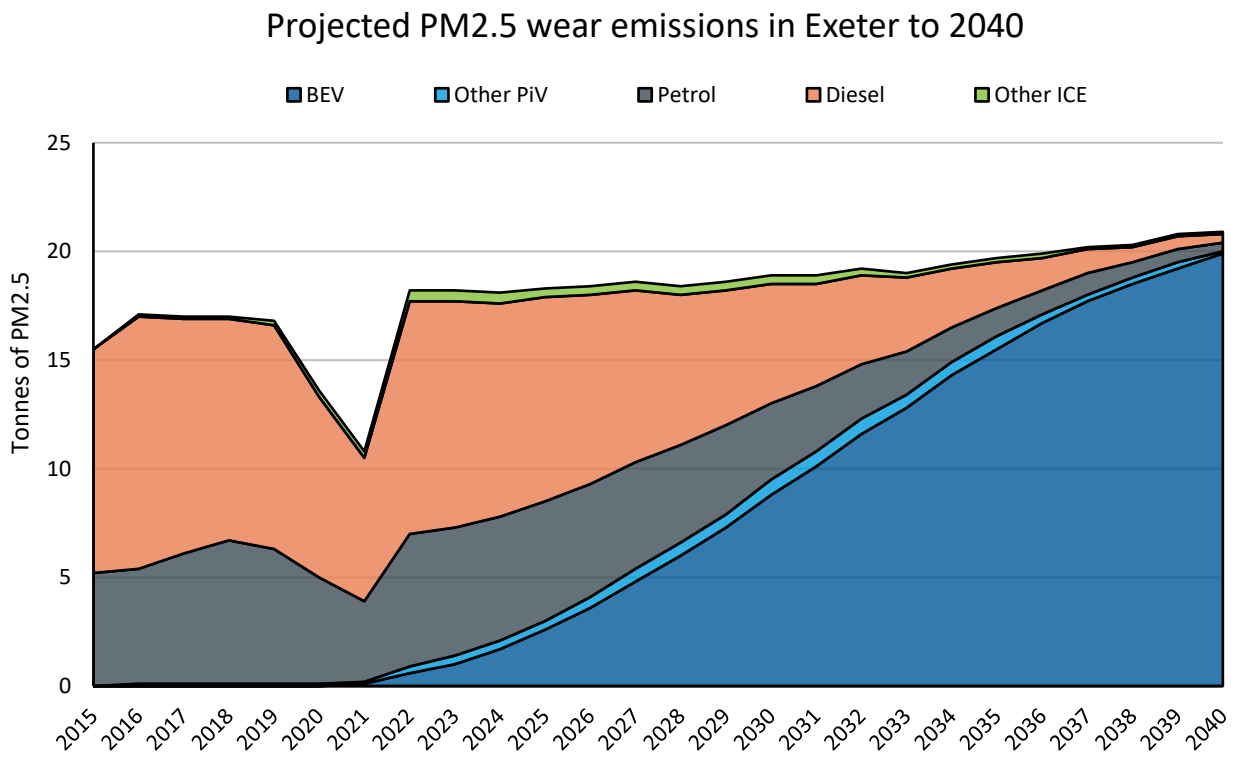

Figure 12: Historic and projected PM2.5 emissions from road, tyre, and brake wear in Exeter 2015-2040

Emissions Reduction Summary:
CO_2e is projected to start to reduce rapidly by 2025 as the share of EVs grows, dropping to near-net zero by 2040.
NO_X and $PM_{2.5}$ emissions reduce consistently through the years as the proportion of EVs in the vehicle parc increases and the number of diesel vehicles decrease.

5.2 Damage Costs Mitigated Due to Emissions Reductions.

Mitigated damages are the estimated social and financial cost savings resulting from a reduction in emissions, such as savings to the NHS because of a reduction in air quality related illnesses, or costs associated with meeting carbon reduction targets. The mitigated damages are calculated starting in 2021 and against a baseline of a low EV uptake scenario. The difference in emissions between this and the medium or high scenario is then multiplied by a factor[11] to determine the mitigated damages.

The mitigated damages presented for a specific year are the sum of all annual mitigated damages of the years after 2021.

Table 6 shows the projected cumulative mitigated damages across the emission types.

Table 6: Projected cumulative damage costs mitigated in Exeter from transitioning to EV cars and LGVs.

	CO_2e	NO_X	PM2.5
2025	£1,510,000	£193,000	£22,100
2030	£16,800,000	£1,950,000	£186,000
2040	£80,800,000	£8,170,000	£722,000

It is beyond the scope of this Implementation Plan to undertake a detailed air quality damage cost assessment. However, the estimates provided here show that the monetised social benefits of

[11] GOV.uk, https://www.gov.uk/government/publications/tag-data-book, Accessed 09/02/2023.

reducing emissions through EV uptake can be significant, especially as the values accumulate year-on-year. These results are indicative based on average damage cost values and costs will vary depending on factors such as whether emissions occur in an urban or rural location. Therefore, a scheme which reduces emissions in a dense urban area will have a greater monetary value than a similar scheme in a sparsely populated rural area.

More precise, local appraisals should be undertaken as part of business case analysis to support investment in targeted local measures to promote EV uptake.

5.3 Summary

Emissions Reduction: Significant reductions possible if the projections are achieved.
If the vehicle parc transitions as shown in the medium projection, a substantial reduction in emissions will be realised. CO_{2e} emissions in 2030 from cars and vans may drop by around 45% on a 2019 baseline driven by the switch to EVs. There will also be a substantial reduction in the emissions of PM2.5 and NOx, primarily driven by a reduction in the number of diesel vehicles on the road.

Mitigated Damage Costs: The monetised social benefits of reducing emissions through EV uptake could be significant.
Substantial mitigated damage costs will be realised as the vehicle parc transitions away from ICE vehicles. By 2030, this may be as much as £2.m from improvements in air quality (NOx and PM2.5) and a further £17m from a reduction in CO_2e emissions.

6 Location of EVI Need in Exeter

The Medium scenario projects an increasing uptake in EVs and significant environmental, air quality and social benefits to the city are available if these scenarios materialise. The distribution of the resulting need for public charging must be analysed to identify the areas in Exeter where EVI will be most needed.

This section presents a demographic analysis based on factors such as socio-economic status, vehicle ownership, access to off-street charging, and availability of charging infrastructure.

! It should be noted that at the time of writing there is very poor data on the likely location of commercial vehicle charging need. Therefore, this analysis is driven by data on residents but may need to be updated in future if better insights on the location of van electrification become available.

6.1 Location Identification

6.1.1 Location of Early Adopters

There is a known strong demographic trend in terms of EV early adopters across the UK. A survey of around 850 EV drivers conducted by the Department for Transport (DfT) in 2022 showed that the majority are male, over the age of 45, tertiary-educated, affluent and have access to two cars or more. Of the respondents, 76% were male, 45% declared earnings of over £55k (with almost half of these earning over £83k), and 78% had multiple vehicles in their household[12]. This is further supported by the 2022 Zap-Map EV Charging Survey, which had 4,358 responses from BEV and PHEV owners. 88% of respondents were male and around 78% were between the ages of 45 and 74[13].

Likely early adopters have been mapped using demographic and census data to create an adoption index, which indicates the locations where EVs may be adopted in the next two to four years before the 'early majority' market is engaged.

Areas with residents more likely to be early adopters are assumed to have higher proportions of households with:

- High value occupations;
- No deprivation on any dimensions;
- Ownership of multiple vehicles;
- Higher annual mileages; and
- Detached or semi-detached properties.

Geospatial data is freely available that can be used to map these demographics so areas that include a relatively higher proportion of early EV adopters can be identified. It is worth noting that the location of demand is particularly important in the short-term when infrastructure provision should outpace demand to address range anxiety and concerns over the reliability and accessibility of chargepoints. Therefore, a good knowledge of the likely demand is needed to best-position initial EV infrastructure installations.

Figure 13 (below) shows the outputs of this analysis and identifies the locations of potential EV adopters in the next two to four years.

[12] Electric vehicle drivers: attitudes and behaviours - GOV.UK (www.gov.uk) accessed 21st March 2023

[13] Zap-Map EV Charging Survey - Zap-Map accessed 21st March 2023

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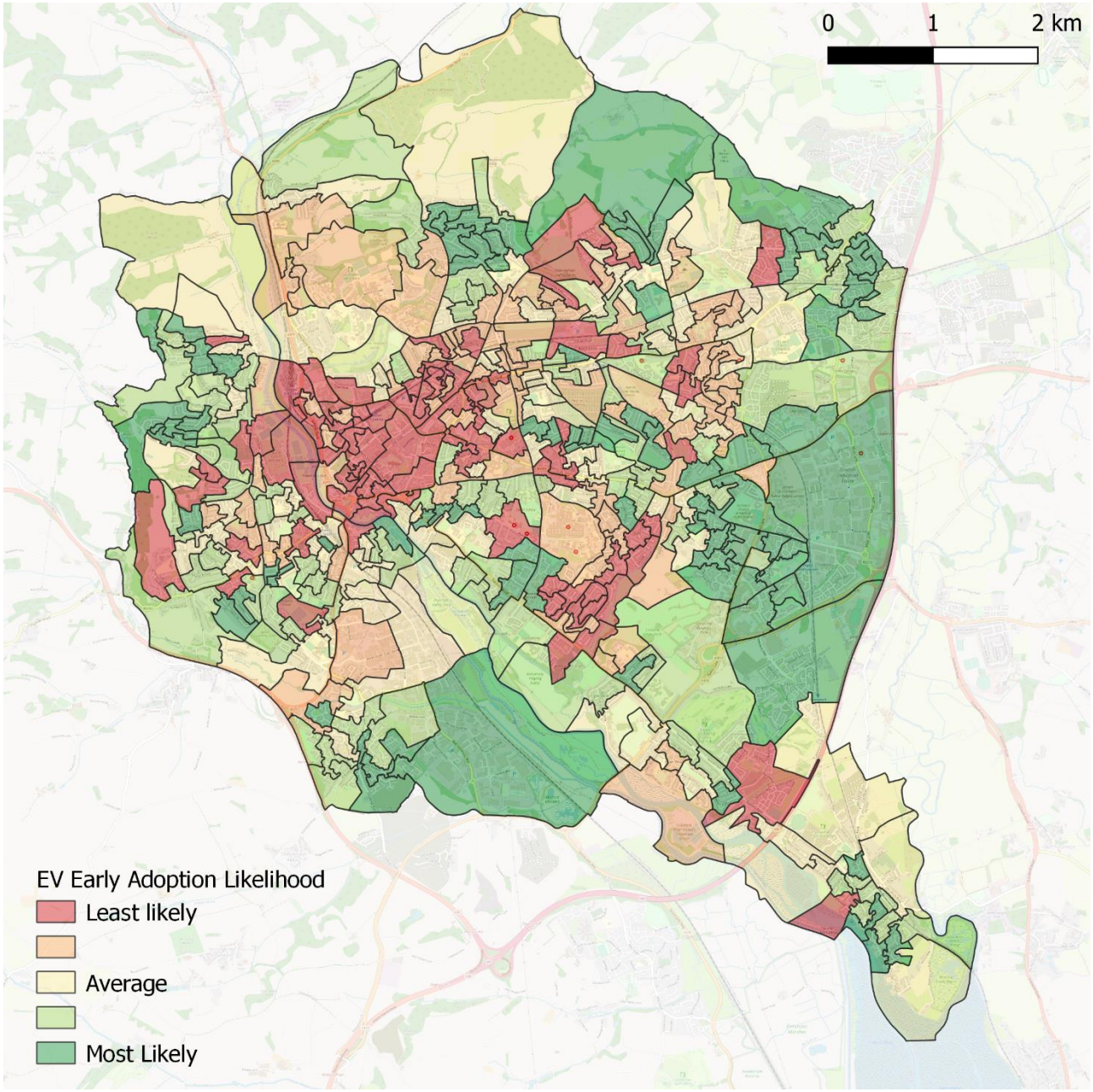

Figure 13: Areas of Exeter where EV Early adopters are most likely to live.

Areas towards the edge of Exeter are more likely to have EV early adopters than in the city centre.

6.1.2 Likely Locations for Residential Public Charging

Taken in isolation, the demographics favourable to EV adoption presented in Figure 13 do not necessarily show the locations where public residential charging infrastructure is likely to be required in the same timeframe. EV users with access to off-street parking can install domestic charging equipment, enabling them to charge at home and reducing their dependence on public infrastructure.

To take this into account, further analysis was completed to systematically identify parts of Exeter that are relatively more likely to require the installation of public residential EV infrastructure by including analysis of the proportion of off-street parking availability. This allows ECC to recognise the areas needing delivery of residential charging, which will inevitably be the council's responsibility.

! Note: The full methodology for how the Residential Charging Index is calculated is documented in Appendix A (page 80).

Figure 14 below, can be used to guide early identification of potential locations for public residential charging infrastructure.

Exeter's city centre areas, along with areas out towards Foxhayes, Newtown, Heavitree, St Loyes, Whipton, Polsloe and Beacon Heath are most likely to need public residential EV infrastructure.

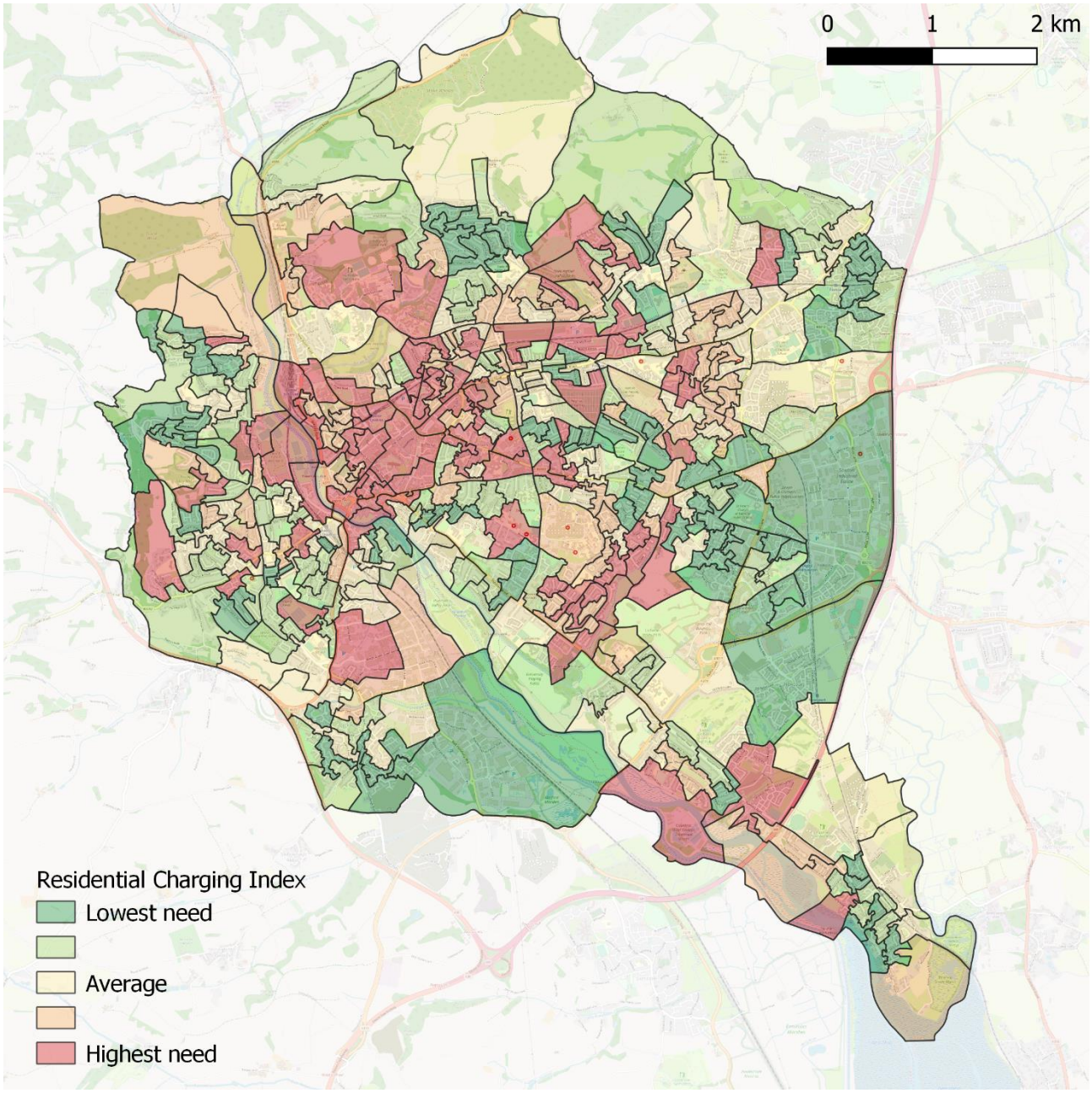

Figure 14: Areas of Exeter likely to need public residential charging infrastructure

6.1.3 Prioritisation by Need

By highlighting the areas of highest need shown in red above, the areas of Exeter which are likely to need public EVI earliest can be highlighted (Figure 15, below). This is not to say that these areas are the only ones in need of charging infrastructure but are instead likely to need more, and sooner.

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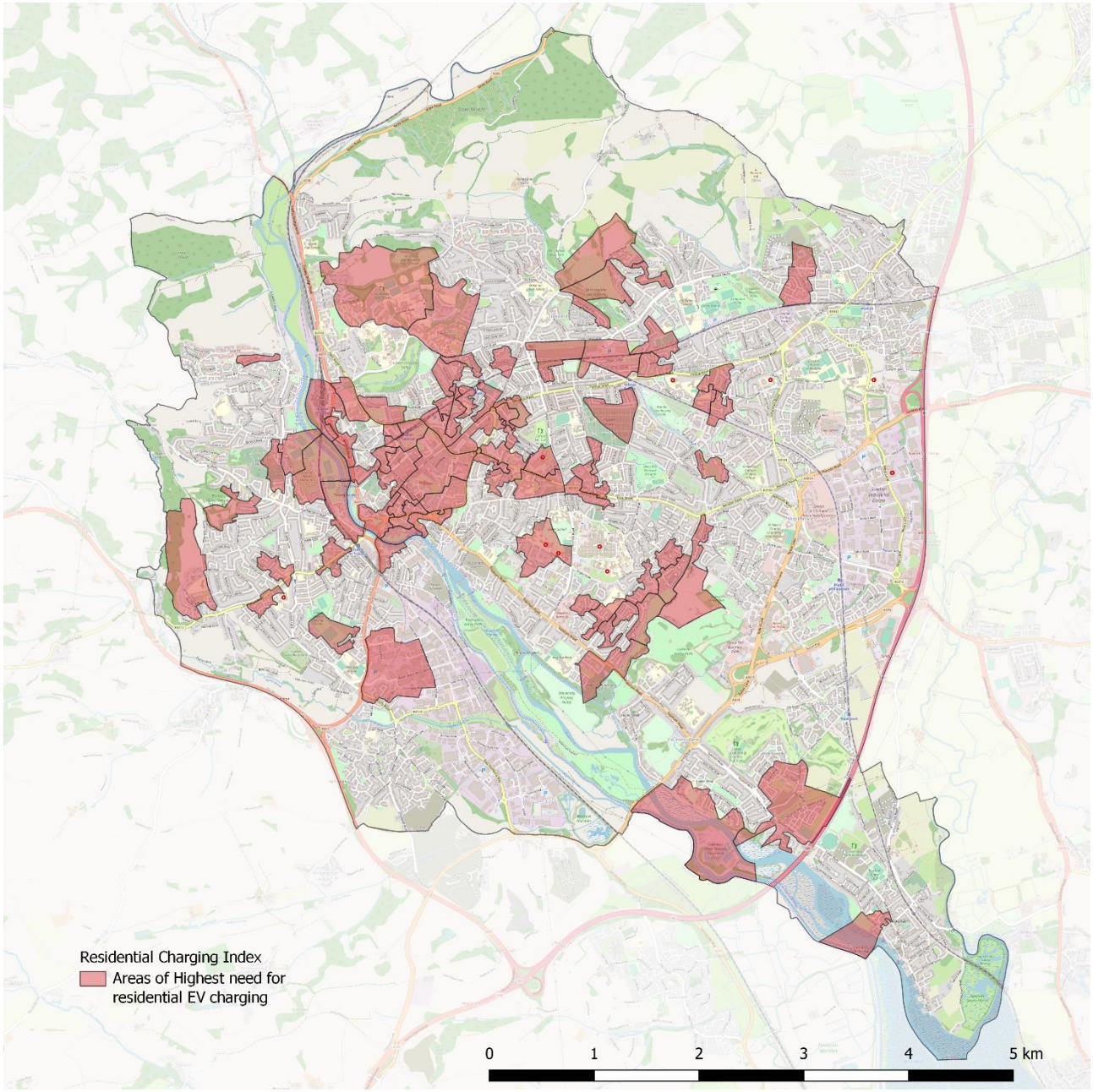

Figure 15: Areas of highest need for public on-street residential charging

6.1.4 Area Classification

One of the key policy conclusions Section 2.5 (page 12) was 'leveraging council assets', namely council-owned car parks. With this in-mind, the areas of highest public residential charging in Figure 15 were compared to the locations and catchment areas of council-owned car parks. A 5-minute walk was defined as the likely maximum distance that residents might travel to charge their vehicles at these sites.

Figure 16 shows that the majority of areas with high need in the city centre are within a 5-minute walk of an existing car park. These could be supported were EVI to be installed there.

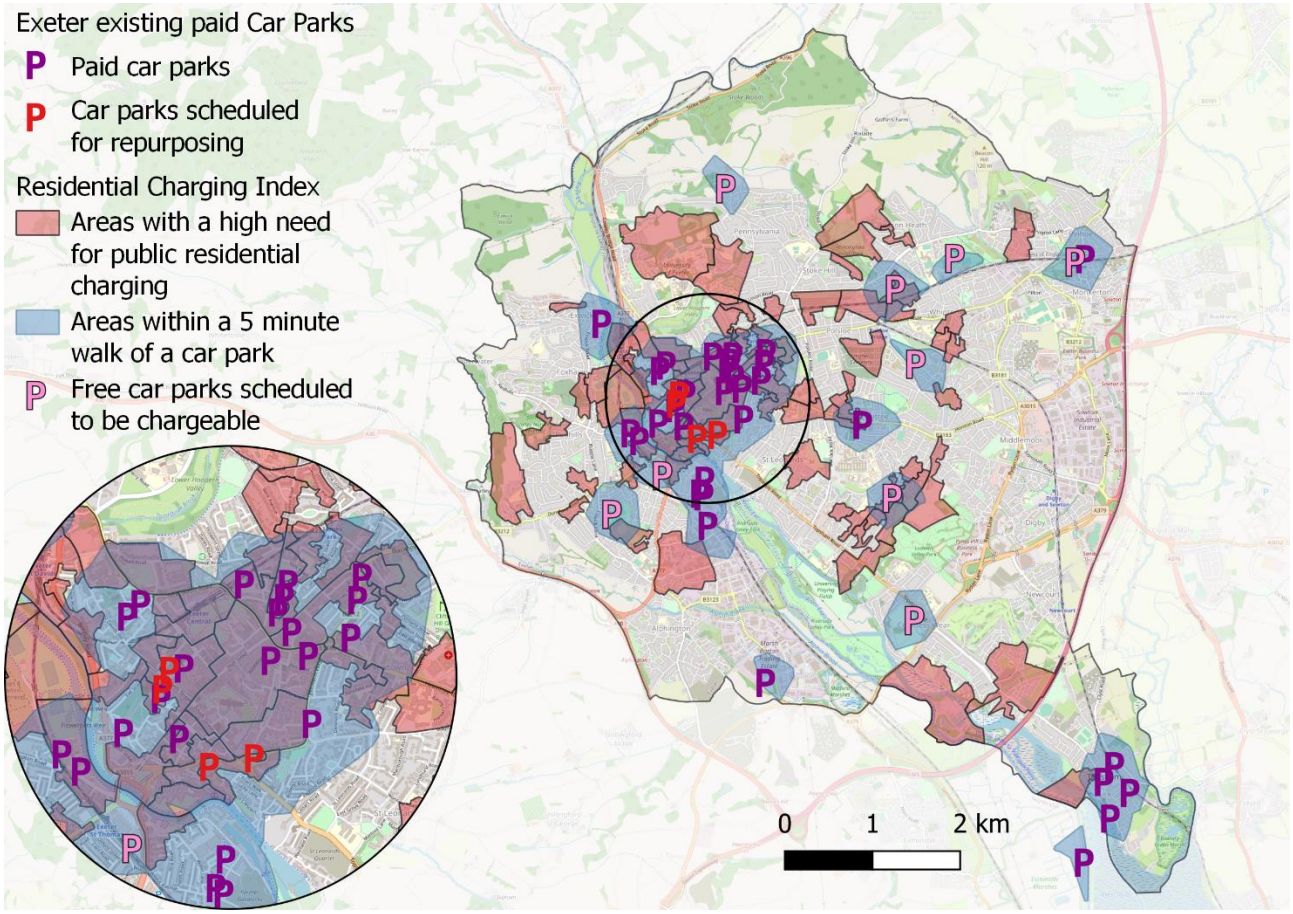

Figure 16: Map of areas of high need for residential EV charging in Exeter servec by existing car parks

There are 78 output areas with the greatest need of public residential EVI in Exeter (Figure 15), approximately 38 of which are partially or completely covered by nearby car parks (Figure 16). This means that almost half of high need areas can be served by EVI in ECC Car Parks.

However, Figure 16 also shows that there are significant areas of the city which are not covered by existing car parks for instance large areas of St Loyes, Redhills and surrounding the University. These areas will therefore need a different approach to deliver residential charging.

6.2 Summary

The majority of people likely to be early adopters of EVs in Exeter are located outside of the city centre, towards the edges of the city in Exeter.

However, the majority of locations in need of public residential EVI in Exeter are concentrated towards the city centre and surrounding areas, with significantly fewer out towards the outskirts.

Almost half of the high need for public residential EVI could be geographically met by installing EVI in council-owned car parks in Exeter.

Other approaches will be needed to support the remaining high need areas as well as those parts of the city identified as medium or low need in the immediate future.

7 Implementation Plan

The current status, future projections, potential benefits and location of early adopters needing public EVI have been identified and articulated. This section combines these findings into an Implementation Plan with key focus areas to address the different situations in the city.

7.1 Summary

Currently, Exeter is leading regional EV uptake across Devon, despite lacking good coverage of the current public charging network. A clear focus on the delivery of EVI is needed to both keep pace with current demand and prepare Exeter for the projected sixfold increase in EVs by 2030 compared to today. To support growth, around 1,500 public charging sockets are expected to be needed in total, especially in central locations and towards the edges of the city.

To support this transition, Exeter City Council's EVI Implementation must deliver consistent, accessible, and innovative EV infrastructure in their car parks, while advocating for integrated, comprehensive coverage across the city.

This strategy emphasises the following themes:

- **Consistent**, where the user experience is recognisable and familiar across the city.
- **Accessible**, by ensuring all users have access to the EVI and are not limited by any factors such as geographical location, socio-demographic status, or disability.
- **Innovative**, through the application of new ideas and approaches to improve the service.
- **Integrated**, with other EVI providers and modes of transport across the city.
- These aspects come together to ensure **Comprehensive Coverage** across the city.

This Plan is supported by the six Exeter Aims articulated in section 2.5 (page 12), as shown in Figure 17:

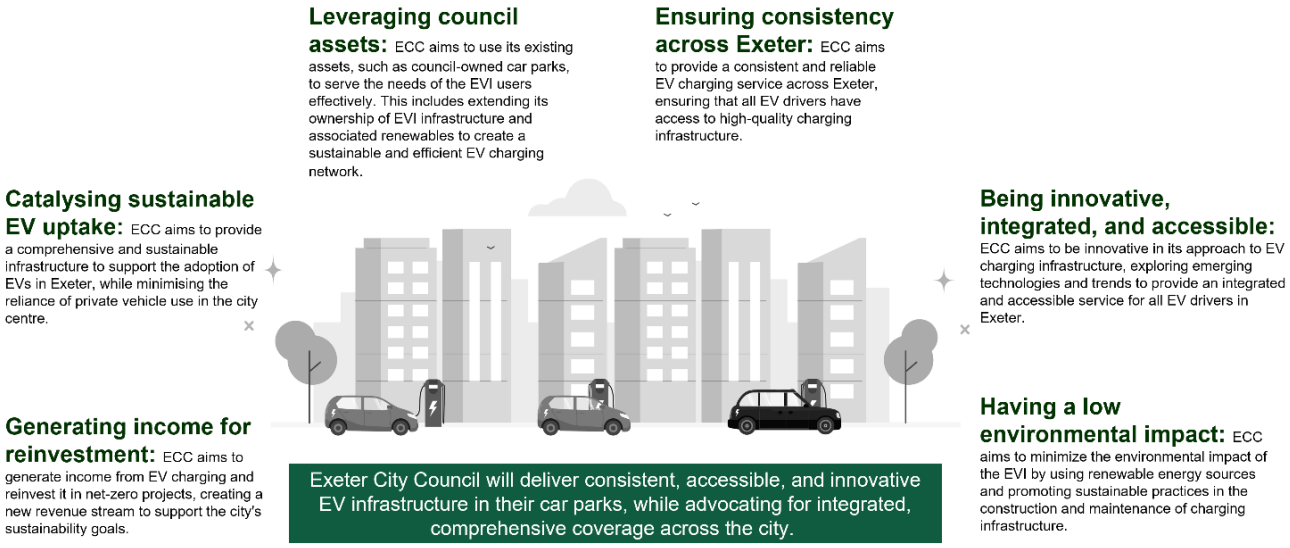

Figure 17: Exeter EVI Aims

Four Focus Areas have been identified to deliver consistent, accessible, and innovative EVI and to advocate for integrated, comprehensive coverage across the city.

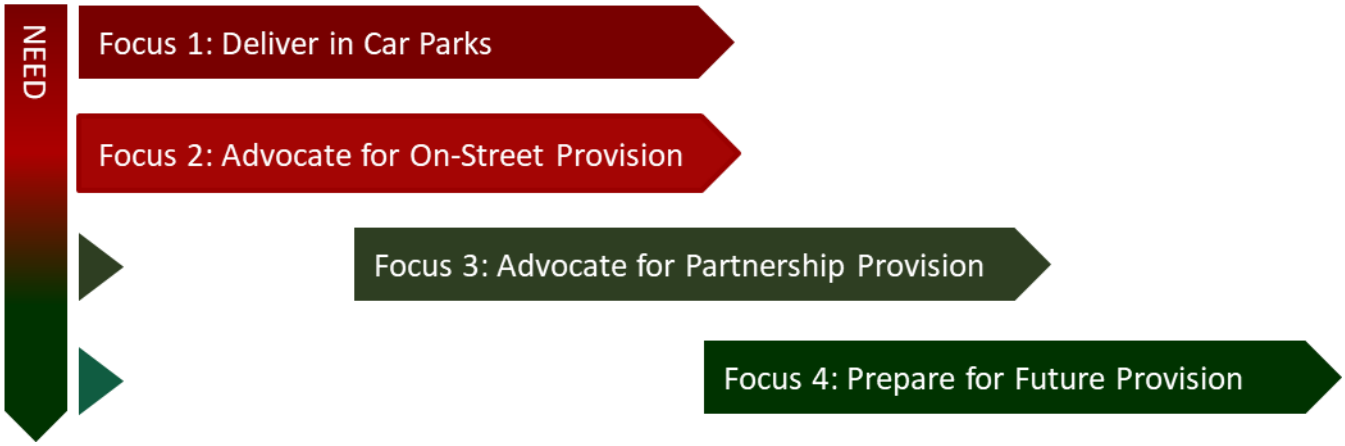

Figure 18 Delivery focus areas

These focus areas are summarised as follows:

- **Focus 1** – ECC will leverage its land and assets to deliver standard and fast EVI across their car parks, evolving them to be AC charging locations, charging hubs and multi-modal transport hubs. Around 200 charging sockets will be needed at a total capital cost of £2m plus DNO costs in a programme targeting completion by 2030.
- **Focus 2** – ECC will advocate for provision in areas identified as being in high need of residential charging in the next two to four years through on-street provision by Devon County Council. This will particularly serve areas with a high prevalence of terraces with non-dedicated parking, terraces/semi-detached housing with dedicated parking at a distance, and terraces/semi-detached with non-dedicated parking at a distance. A mix of pedestal chargers, cable channels and lamppost chargers are the best-suited solutions.
- **Focus 3** – ECC should work in partnership with local businesses and organisation to provide charging infrastructure in areas not served by car parks, including workplaces, supermarkets, large public institutions and other high-traffic locations. Deploying charging hubs such as those in Focus 1 with a mix of standard, fast and some rapid provision may be worth exploring with partner organisations to ensure comprehensive coverage across the city by 2035.
- **Focus 4** – ECC should prepare for future EVI need and plan for provision beyond 2030 in lower demand areas not addressed by Focuses 1 to 3. This will require further analysis and are likely to need a variety of charging solutions on-street, in car parks, with partners and from the private sector.

7.2 Focus 1: Deliver in Car Parks

7.2.1 Summary

ECC will leverage its land and assets to deliver predominantly low powered AC EVI across their car parks, serving as AC charging, charging hubs and multi-modal transportation hubs. ECC will provide for both private cars and commercial vehicles, wherever possible. The use of ECC's renewable energy assets will be utilised or installed to manage energy supply costs and minimise environmental impact.

ECC car parks are a strategically important asset as ECC have control and autonomy over their use. The analysis in Section 6.1.4 (page 29) shows that the council car parks are well positioned to serve the initial high demand. Approximately half of the locations identified as being in high need of public residential EVI can be served by ECC Car parks in close proximity. The remaining high need and areas of lower need will be accommodated through the remaining three focus areas (see Section 7.4, Section 7.5 and Section 7.6 respectively).

7.2.2 EVI Demand

The Medium EV uptake curve from Section 4.1 (page 18) was combined with information about the usage of Exeter's car parks and length of stays to calculate the likely need for EVI at these locations.

! A full methodology for this analysis is presented in Appendix C - Car Park Data (page 86).

Figure 19 shows that Exeter is projected to need approximately 200 sockets distributed across their car parks by 20203, which roughly equates to 13% of the overall projected need for public charging in Exeter in 2030.

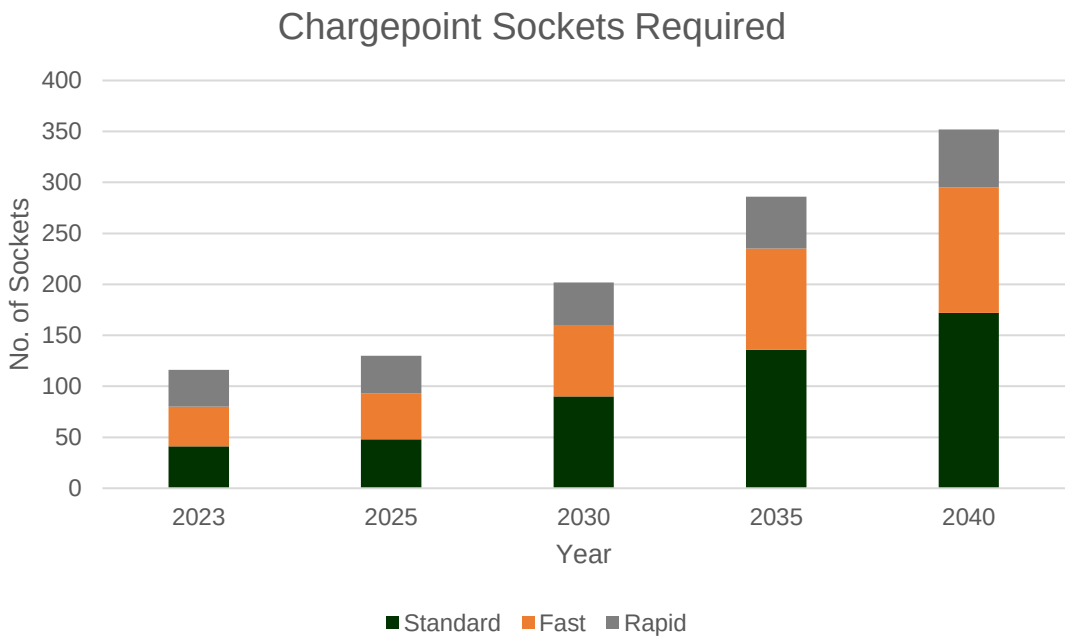

Figure 19 Total sockets required in ECC car parks.

From these projections, ECC needs to focus these sockets on predominantly standard and fast chargepoints due to the significantly higher projected need for lower speed provision. Rapid charging will form a part of the investment within the Implementation Plan but will be much lower in terms of number of units.

ECC should target delivery of 200 EV charging sockets in their car parks by 2030 to provide around 1/8 of the total public charging demand.

7.2.3 Capital Investment

Delivery of the projected 200 EV charging sockets in ECC car parks will require approximately £2 million capital investment by 2040.

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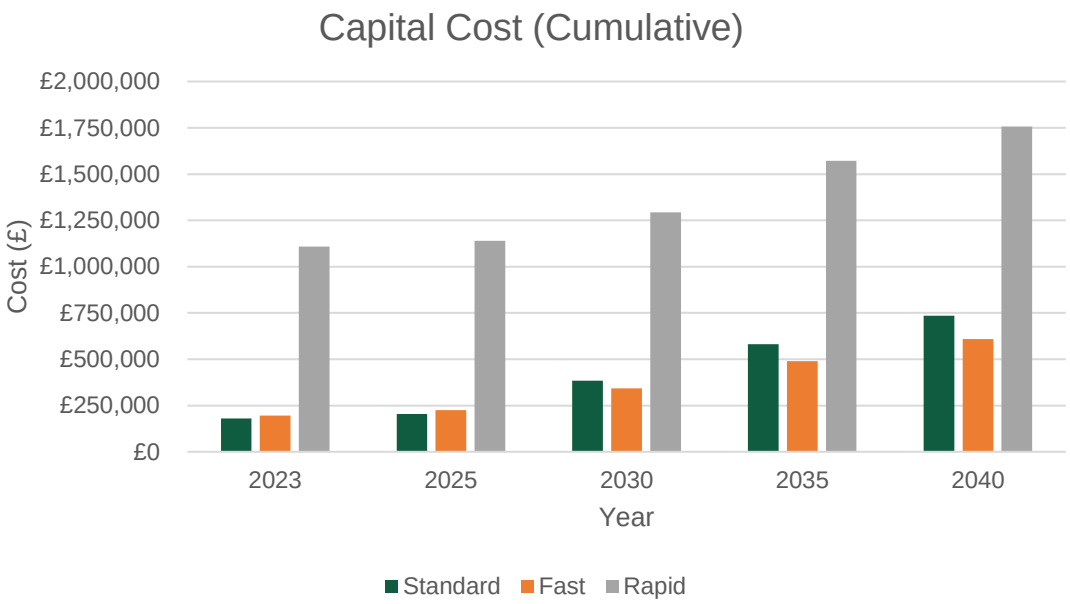

Figure 20 Projected capital costs for EVI

7.2.4 Car Park Archetypes

The specific provision of EVI in each of ECC's car parks will vary according to the car park characteristics, its usage and situation.

Three archetypes have been developed based on the average amount of time vehicles are parked, as well as their proximity to residential areas with a need for EVI parking, transportation links, and other nearby car parks. This will allow ECC to cater to a wide range of users across the city by providing the necessary infrastructure in the appropriate locations.

- **AC Charging Locations**: This archetype provides Standard or Fast Alternating Current (AC) charging with 1 – 5 chargepoints per location and is suitable for long-stay use such as residential overnight parking or commuter workday parking.
- **Charging Hub:** This archetype includes mixed-speed charging facilities, along with on-site generation and storage, wherever feasible. This hub will be equipped with 4 or more chargepoints and serve a range of users, including visitors, commuters, and businesses as well as residents.
- **Multimodal Hub:** This archetype encompasses all the features of an Urban Charging Hub, as well as supporting transport modes such as e-bikes and car clubs. It is located near public transport bus stops, train stations and park & rides.

All ECC owned car parks have been allocated to the most suitable archetype in Table 7 and then prioritised for delivery into low, medium, and high based on the projected demand for infrastructure (shown in Appendix D - Modelling Outputs: Car Park EVI Numbers), proximity to residential need (shown in Section 6), proximity to transport links, and whether the car parks have residential permits, and existing solar generation.

Table 7 ECC car park delivery priority by archetype.

Car park Archetype	Delivery Priority		
	High	**Medium**	**Low**
AC Charging	Bartholomew Terrace King William Street Car Park Magdalen Road Car Park Cathedral & Quay Car Park Flowerpot Car Park Okehampton Street Car Park Gordons Place Car park Betty's Mead Playing Field	Bampfylde Street Car Park Richmond Road Car Park Princesshay 3 Car Park Belmont Road Haven Banks 1 Car Park	Princesshay 2 Car Park Smythen Street Car Park Parr Street Car Park Holman Way Car Park ISCA Arena Cowick Barton Playing Field Hamlin Lane Playing Field King George V Playing Field Tappers Close Car Park
Charging Hub	Guildhall Car Park John Lewis Car Park Matthews Hall Car Park Wonford Sports Centre	Riverside Leisure Centre	Topsham Quay Car Park Haven Banks 2 & 3 Car parks Station Road (Exwick) Car park Duryard Park
Multimodal Hub	Bystock Terrace Car Park Howell Road Car Park Triangle Car Park Matford Park and Ride		Station Road Playing Field (Pinhoe) Pinhoe Station

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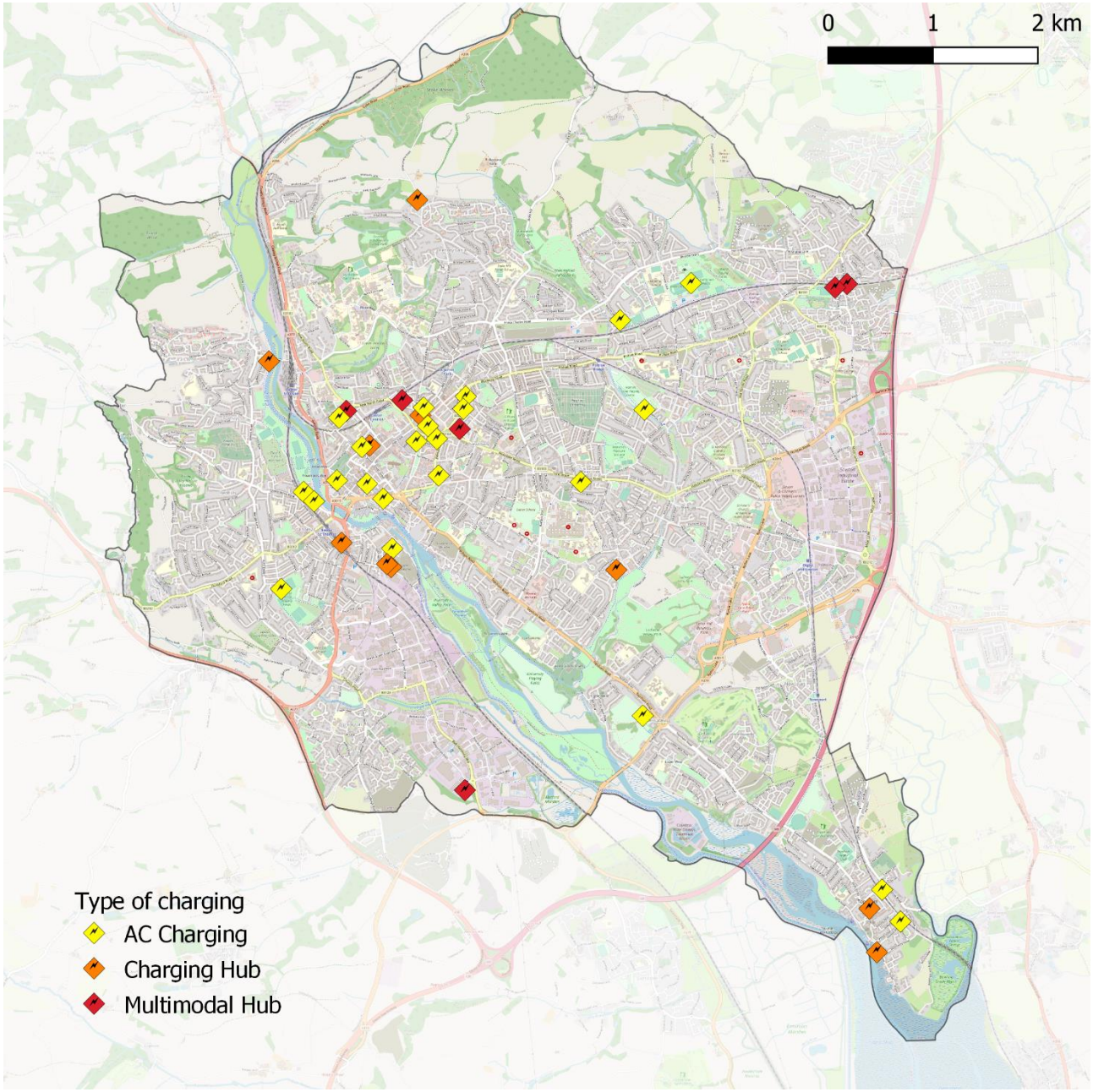


Figure 21: Classification of car parks owned by Exeter city council, by type of charging.

Serving the Rapid Need

Although less numerous than standard or fast chargepoints, the projections indicate that at least one rapid socket may be needed in nearly all the car parks, totalling 42 sockets by 2030. Due to limitations of the input data to the model, this projection is considered a disproportionately large share of the overall need for rapid infrastructure projected for Exeter in section 4.2 (page 20).

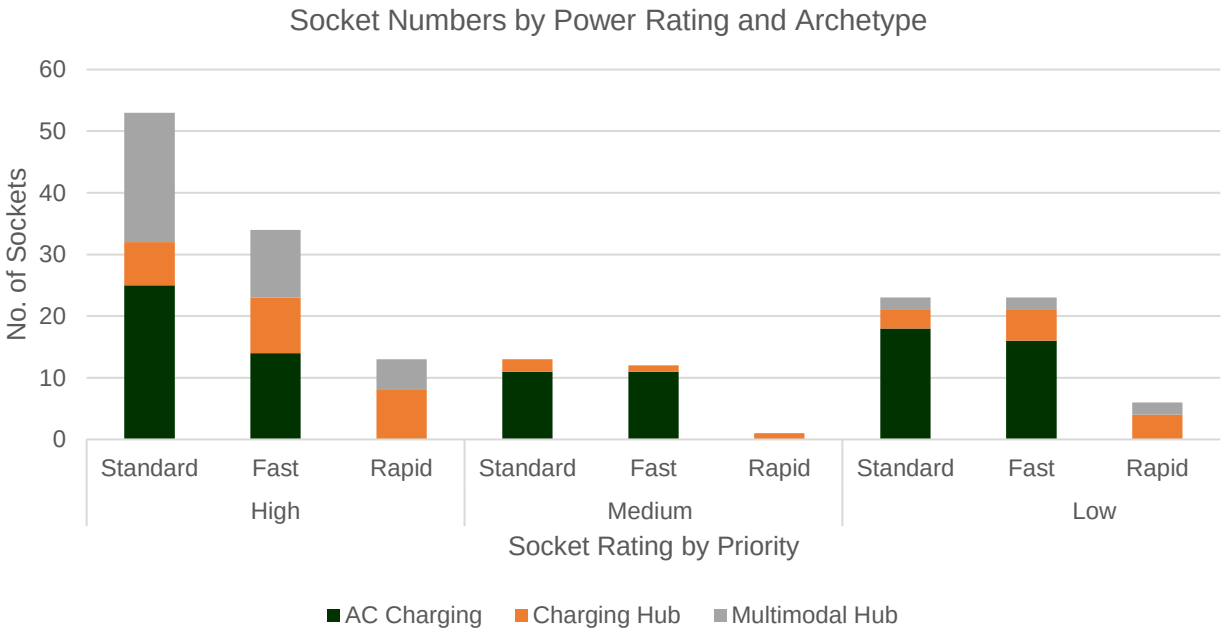
Rapid EV charging infrastructure is more expensive, costing about ten times more than less-powerful AC units. The projected capital investment for Exeter is £2 million, with £1.3 million needed for rapid charging alone, not including DNO costs. The DNO analysis in section 3.2.3 (page 14) suggests that while there is some substation capacity in the city, primary substations are limited. This will affect higher power chargepoints more than low power ones, requiring significant additional capital investment.

Therefore, it is recommended that rapid charging infrastructure be strategically located only in car parks categorised as "charging hubs". This would reduce the need for rapid EVI projections by half, down to approximately 20 units, resulting in a savings of around £600,000 in capital investment.

ECC should only deliver rapid charging infrastructure at strategically located 'charging hub' sites to minimise the level of capital investment.

The resulting breakdown of charging socket numbers by car park archetype are shown in Table 8:

Table 8 Socket numbers by power rating and archetype



Projections for each car park can be found in Appendix D - Modelling Outputs: Car Park EVI Numbers.

Passive Provision

Passive infrastructure (sometimes known as passive provision) refers to the installation of everything required for EV charging except for the electrical connection and the chargepoint itself.

Passive infrastructure facilitates later installations by delivering all the necessary underground cable routes (i.e., trenches and conduits) required to allow the chargepoint to be connected to the electricity network without the need to dig or excavate.

Passive provision is a way of reducing costs for future EV chargepoint installations whilst limiting short-term capital and revenue expenditure to only what is expected to be required in the short-term.

ECC should deliver passive infrastructure for the provision of sockets projected for beyond 2030. Where feasible, provision should be installed concurrently for cost efficiency and to enable easy expansion in the future to meet growing demand from 2030 onwards.

ECC should monitor utilisation to inform when additional units are required to be installed.

Passive infrastructure should be installed to support charging demand beyond 2030.

7.2.5 Timelines

Delivering EV infrastructure can be a lengthy process and is very much dependent on the site parameters. It is recommended that all high prioritised car parks be planned for delivery by 2025, medium by 2026 and low by 2028. This will enable all ECC owned car parks to have EVI infrastructure provision by 2030, aligning with Devon County Council's strategy, whilst also delivering demand ahead of need, to catalyse EV uptake in the city.

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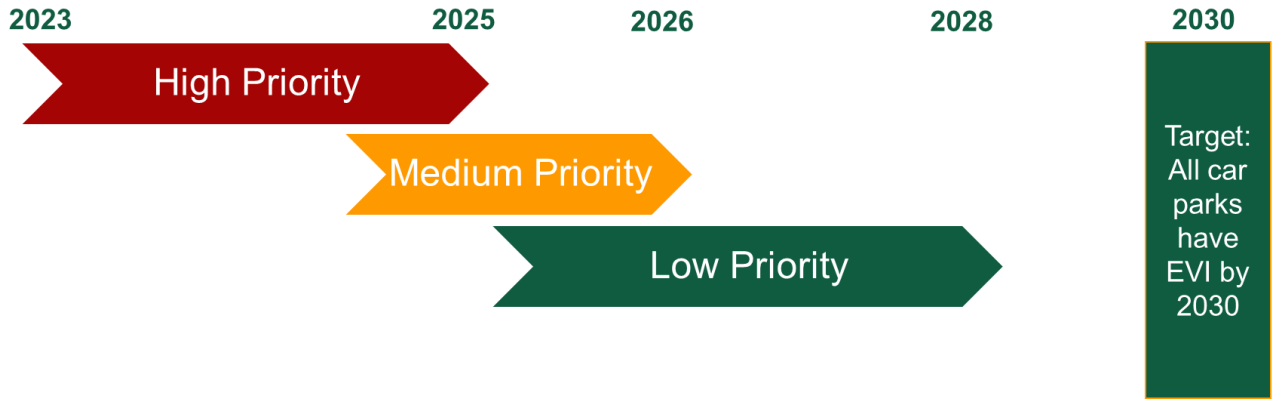

Following site surveys, the sites can be further prioritised into those that are easier to install and can be delivered expediently and those that may require further site works. It may be that some high priority sites are not economically feasible following further investigation and should be downgraded seeking other solutions to meet the demands apportioned to that site.

Equip high priority sites by 2025, medium priority sites by 2026 and low priority sites by 2028.

7.2.6 Additional Considerations

Consolidated Charging Hubs

In delivering the actions outlined above, it is important to consider balancing the provision of EV infrastructure ahead of need with the likely utilisation. Given the proximity of some car parks to each other and that only a few sockets are required per site, ECC may wish to consider consolidating demand across nearby car parks to create larger charging hubs where the power supply allows, and demand can still be met. Potential sites for consolidation into a single hub include:

- **Flowerpot hub**: serving Flowerpot Lane and Okehampton street.
- **Haven Banks hub**: serving Haven Banks 1, 2 and 3
- **Topsham hub**: serving Matthews Hall, Topsham Quay, Holman Way and Tappers Close

Whilst this will slightly decrease the catchment area served by ECC car parks, it may make the eventual portfolio of sites more commercially viable if external investment is sought.

Serve All Users

ECC should provide charging infrastructure for all prospective users. This includes provision for residents within a 5-minute walk of an ECC car park via Standard AC charging, provision for commuters, visitors, local businesses, and last mile delivery users via charging hubs, and the provision of multimodal hubs to integrate with existing public transport links, reduce car dependency, and improve mobility and accessibility. This may require slightly longer bays to accommodate commercial vehicles.

Deliver with Supporting Technologies

EVI should be delivered with supporting technologies such as on-site solar generation, battery storage and load management where possible. ECC should install canopies with lighting and CCTV to protect drivers from the elements and provide a safe charging environment. The CCTV also offers ECC some protection from incidents or vandalism. These canopies can be solar canopies or can be retrofitted with solar in the future.

Installing EVI with renewable generation and energy storage may support onsite power challenges, mitigate against energy price fluctuations, and deliver low carbon power to drivers. However, the business case will need to be made to secure greater levels of funding. Likewise, any procured suppliers will need to have the capability to work with integrated renewable technologies, which may include the provision of additional hardware.

Deliver with Supporting Initiatives

Several supporting initiatives should be explored alongside the installation of EVI to help achieve the ECC EVI aims outlined in section 7.1 (page 31). Here are some examples of potential initiatives for ECC to evaluate:

Integration with parking payment systems

Exeter could explore integrating EV charging systems into the parking systems. Parking payment operators and services are increasingly supporting EV charging and there is scope for innovation in this area. Exeter's existing parking payment operator, RingGo are already exploring digital solutions to combine parking and charging payments. Additionally, there are some providers exploring integration into payment kiosks such as Metric.

The is scope to procure both these services in one tender, noting that Exeter are due to retender their parking payment provider service in the next year.

Consistent payment methods and pricing

Additionally, the introduction of consistent payment methods across all car parks in Exeter could simplify the process of paying for EV charging services. This could also extend to consistent tariffs across all infrastructure.

Integration with the low carbon transport app/service

The Exeter Transport Plan includes a project to develop a low carbon public transport subscription service. At this time, it does not appear to include EV charging, but this should be explored as a method to further integrate EV charging into the wider sustainable transport provision and provide consistency via an innovative access method.

Park and Charge Permits

In addition to revenue from chargepoint utilisation Exeter should explore implementing Park and Charge Permits. Park and Charge permits can be purchased and issued to users. There can be various permits with different benefits to serve residents, visitors, commuters, and commercial user's needs. Park and Charge permits could either supplement or substitute the proposed emission-based parking tariff in the Exeter Car Park Baseline Report.

Securing 'anchor loads'

To ensure income generation even during the early phases of low utilisation, ECC should focus on securing regular and guaranteed chargepoint usage, commonly known as an "anchor load." This can be achieved by establishing agreements with commercial users, such as last mile delivery and EV car clubs, who require regular charging. The use of Park and Charge Permits can facilitate this. By securing anchor loads in commercial users, Exeter is mitigating low revenue risks whilst supporting the broader EVI users' needs and facilitating the commercial transition to EVI. Exeter should engage with potential anchor loads to identify their needs and explore possible solutions. EV car clubs are an ideal candidate for anchor loads, as they provide additional value to the community and contribute to wider transport goals of reducing private vehicle usage.

EVI signage across Exeter

The Exeter Car Park Baseline Report highlights the need for improved car park signage, both in the car parks and around the city. Physical EVI signage is an important method to help drivers find and access chargepoints while driving. There is no standard however for EVI signage and there is scope to trial approaches and develop best practise. The PAS 1899 offers some direction and guidance for both physical and digital signage from an accessibility perspective and the Traffic Signs Manual has guidance on EV parking signage specifically[14].

[14] Traffic Signs Manual – Chapter 3 - Regulatory Signs (publishing.service.gov.uk) page 167 Accessed 5/04/23

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7.2.7 Delivery Standards, Permissions and Regulations

ECC should seek to deliver against the following standards, permissions, and regulations in all car park installations as a minimum.

- **Accessible design**: the PAS:1899 British Standard[15] provides guidance to design EV infrastructure installations to be accessible. The standard has stipulations for chargepoint design, site design and signage and information. Designability[16] provide guidance on this standard, as do Energy Saving Trust[17]. This guidance is also consolidated on the NEVIS Knowledge Repository[18]. Exeter must ensure that the sites are designed to this guidance and installers are equipped to deliver accordingly.
- **EV Charging Customer Experience Regulations**: at the end of March 2023 the government shared the response to consultation[19] for the upcoming regulations intended to ensure that users have a good charging experience. The regulations will cover, payment approaches and transparency methods, open data requirements, and service reliability targets. Exeter should work to these regulations (see summary in Appendix E - Consumer Experience Regulations for Public EV Charging Infrastructure Summary).
- **The Alternative Fuels Infrastructure Regulations** (AFIR) 2017[20].
- **Electrical standards and regulations**: including BS 7671 for the requirements for electrical installations, and the IET Wiring Regulations (although these are non-statutory).
- **Charging equipment:** compliance with BS EN 61851 series of standards with outlets/connectors to BS EN 62196. As well as the Measuring Instruments Regulations (MIR) 2016, the Electrical Equipment (safety) Regulations 2016, and Electromagnetic Compatibility Regulations (EMC) 2016. All chargepoints should support OCPP v1.6 or above.
- **Installers and Installation:** Installers should be working to the Construction (Design and Management) Regulations (CDM) 2015 and construction should be in compliance with Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) and disposal (and preparation for eventual disposal) should comply with Waste Electrical and Electronic Equipment (WEEE) regulations. Installation should be aligned with the latest edition of the IET Code of Practice for Electric Vehicle Charging Equipment Installation (latest edition is the 4th with the 5th due later this year).
- **Installation and operational safety:** There are lots of safety regulations which apply depending on the work activity. The key thing is the overall approach to safety management and how contractors or subcontractors are likewise managed. The IET Code of Practice for EV Charging Installation is the best resource for guidance.
- **Fire safety:** EVI installations should be addressed in line with a suitable fire risk assessment, by a competent qualified professional. Key issues to consider are available in RISC Authority RC59[21]. EVI can be installed in underground or in multi-story car parks if adequate mitigations are in place to mitigate fire risk.

Other notable regulations, standards, and permissions:

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[15] PAS-1899 | BSI (bsigroup.com) Accessed 23/03/23

[16] Designability | Design Guidance | Accessible EV charging Accessed 23/03/23

[17] Electric vehicle accessibility for disabled drivers and passengers (local authority information) - Energy Saving Trust Accessed 23/03/23

[18] Knowledge Repository - National EV Insight & Strategy | Delivered by Cenex Accessed 23/03/23

[19] Consumer Experience at Public Chargepoints (publishing.service.gov.uk) Accessed 03/04/23

[20] Alternative Fuels Infrastructure Regulations 2017 (publishing.service.gov.uk) Accessed 23/03/23

[21] RC59 - Recommendations for fire safety when charging electric vehicles.pdf

- **Planning permission**: It is likely that EVI installation in ECC car parks will be classed as a permitted development under Class D and E of the Town and Country Planning Order[22]. There are however clear conditions to meet that Exeter should ensure suppliers and sites designs comply with. These include stipulations of the size of the units, proximity to a highway and any listed buildings or monuments.
- **Building regulations**: The 2021 update to national Building Regulations[23] mandates that new buildings with associated car parking or those undergoing major renovation must provide active and passive infrastructure to a minimum proportion of bays within the car park[24]. This may apply to a few ECC car parks, but passive provision is recommended for car parks nevertheless as it offers a cost-efficient expansion route to meet future EVI need.

! This is a selection of the key standards and regulations and is not exhaustive. As part of the LEVI Support Body offering, Cenex will be publishing detailed technical specifications to support local authorities. ECC will be able to access these on publication.

7.2.8 Replacements of Existing Chargepoints:

As the existing Pod Point units across the city are proprietary units that have been installed for some time, the best course of action would be to remove the units and replace. This will need to be done in consultation with Pod Point. ECC should promote the safe and responsible disposal of units and encourage the reuse or recycling of all components if feasible.

7.2.9 Focus 1 Recommendations

The following recommendations are made for ECC to deliver consistent, accessible, and innovative EV infrastructure in their car parks:

- ECC should leverage its land and assets to deliver predominantly low powered AC EVI across their car parks, serving as AC charging, charging hubs and multi-modal transportation hubs for commercial vehicles and private cars.
- ECC should plan to complete the programme by 2030 with intermediate milestones as follows: 2025 for high-prioritised car parks, 2026 for medium, and 2028 for low-prioritised car parks.
- ECC should deliver 200 sockets in their car parks by 2030 with passive provision for future needs beyond 2030.
- ECC should deliver rapid infrastructure only at strategically located ‘charging hub’ sites and consider consolidating demand across nearby car parks to create larger charging hubs.
- ECC should provide charging infrastructure for all prospective users, including residents, commuters, visitors, local businesses, and last mile delivery users, via charging hubs and multimodal hubs.
- ECC should utilise its renewable energy assets to manage energy supply costs and minimize environmental impact.
- ECC should install canopies with lighting and CCTV to protect drivers and provide a safe charging environment.
- ECC should explore several supporting initiatives alongside the installation of EVI to help achieve the ECC EVI aims.
- ECC should deliver to industry standards as a minimum.

7.2.10 Actions and Next Steps

The following actions and next steps are suggested to deliver EV infrastructure in ECC car parks:

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[22] The Town and Country Planning (General Permitted Development) (Amendment) (England) Order 2011 (legislation.gov.uk) Accessed 23/03/23.

[23] Approved Document S: Infrastructure for the charging of electric vehicles (publishing.service.gov.uk) Accessed 23/03/23

[24] Approved Document S: Infrastructure for the charging of electric vehicles (publishing.service.gov.uk) (Accessed 23/03/23)

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Actions	Conduct site assessments, including surveys	☐
	Engage with the DNO	☐
	Develop business case for EVI in car parks	☐
	Develop business case for supporting solar generation, and storage.	☐
	Develop site designs	☐
	Engage with commercial drivers and car club operators to understand their needs and requirements for EVI.	☐
	Explore, develop, and implement supporting initiatives	☐

7.3 Advocacy

Delivering EVI in ECC car parks is an effective method to meet a good proportion of the high need areas but will only serve a small proportion of the overall need for EVI in the city.

Apart from delivering EV charging facilities in their own car parks, ECC is responsible for promoting the development of EV infrastructure throughout the city, ensuring that everyone has easy access to EV charging points. This advocacy role includes two specific delivery focuses:

- Focus 2: advocating for on-street charging provided by Devon County Council.
- Focus 3: partnership charging provision.

By exploring additional routes to EVI delivery, ECC can provide charging solutions to areas where ECC car parks cannot meet the demand. This approach will help achieve comprehensive EVI coverage across Exeter and ensure a consistent and reliable experience for EV drivers, regardless of the method of provision. By diversifying the delivery methods, ECC can effectively meet the varying needs of different areas within the city and ensure a consistent, accessible, innovative and integrated EV charging network across the city.

To successfully advocate for a comprehensive delivery of electric vehicle infrastructure (EVI) in Exeter, it is important to manage the different priorities of stakeholders involved. While ECC cannot expect to have full control over all EVI provision in the city, it should strive to encourage operators and stakeholders to align with the ECC's goals. It is also crucial for ECC to remain flexible to facilitate commercial delivery and accommodate other providers priorities, while advocating for accessible EVI to be provided throughout the city.

7.3.1 Supporting Initiatives

Several supporting initiatives should be explored to help achieve consistency across delivery with DCC and partners. Here are some examples of potential initiatives:

ECC could explore emerging Plug & Charge technology. This will be facilitated by ISO15118, a new communications protocol that enables users to simply plug their car in to begin charging, without needing to provide any other form of identification for payment. The protocol enables an electric vehicle to automatically identify and authorize itself to a compatible chargepoint. This is an emerging technology that could be applied across the differing providers in Exeter to enable a consistent and simple user experience. Additionally, the requirement for OCPI, and roaming in the upcoming customer experience regulations should be explored for its application in simplifying the user experience across Exeter.

Another route to ensure consistency across the EVI provision is to encourage all providers to integrate into the Exeter plans for a low carbon transport subscription service. This would mean users have one interface to access all low carbon transport services in the city.

To support and encourage EVI providers across Exeter to deliver within the City's EVI aims, Exeter could explore the development of ECC EVI principles and external working groups to share plans and aspirations for the cities EVI and encourage collaboration.

7.4 Focus 2: Advocate for On-Street Provision

7.4.1 Summary

Figure 16 (page 30) showed that around half of areas identified as being in high need of residential charging in the next two to four years could be served by ECC car parks. The previous section has identified that around 13% of the projected number of city-wide charging sockets will need to be deployed in these locations.

The high need areas which cannot be served by car parks are the subject of this focus, these areas need standard EVI for residential users.

As Devon County Council is the highways authority for the entire region including in Exeter, on-street provision requires a joint approach. Exeter must advocate for their residents to ensure on-street EVI can be installed, and Devon must ensure flexibility to allow use of highways land to deliver EVI.

7.4.2 EVI Demand

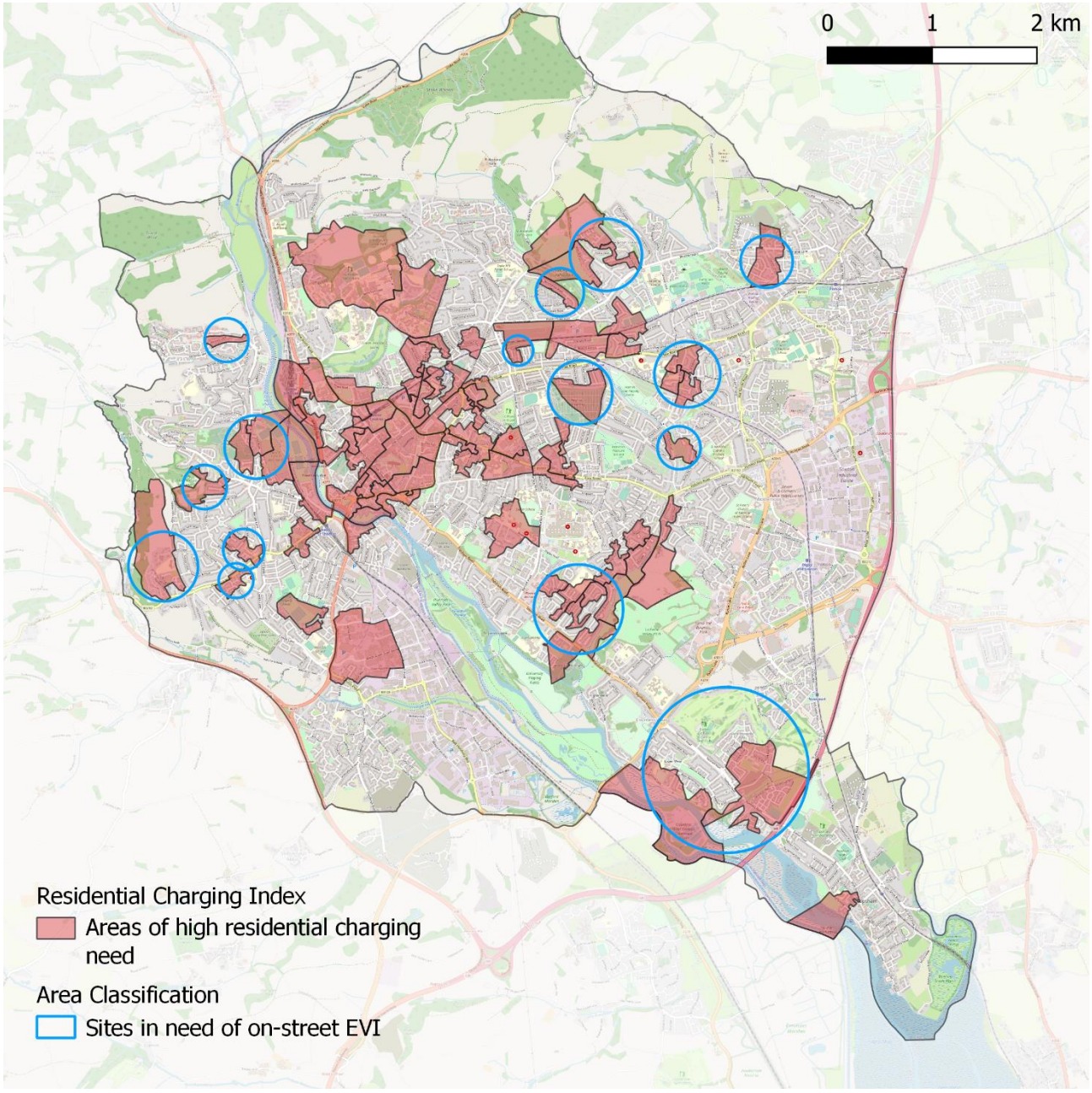

Figure 22: Areas of high need for on-street EVI

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The DCC EVI Strategy projects the need for 2,000 chargepoints across the county, of which 270 of are required in Exeter City[25]. ECC should conduct further analysis in to on-street demand in Exeter to corroborate DCC numbers. ECC should advocate that every resident who relies on public infrastructure has access to a chargepoint within a 5-10 minute walk of their home.

7.4.3 Archetypes

As part of the analysis in section 6.1.3, areas that were not covered by ECC-owned car parks were identified as locations that would benefit from the provision of on-street EVI. These sites are generally areas of highest residential charging need and can generally be split into three main archetypes:

1. **Terraced houses with non-dedicated parking** - Locations with parking often directly outside the houses, which typically has a small front garden.

Figure 23: Street view of terraced houses with non-dedicated parking[26]

2. **Terraced or semi-detached with dedicated parking a short distance away** - Locations with parking further away from the housing, often in courtyards or shared spaces

Figure 24: Street view of terraced of semi-detached houses with dedicated parking a short distance away[27]

[25] Corporate websites - Devon EV Strategy consultation draft.pdf - All Documents (sharepoint.com) (accessed 23/03/23)

[26] Google Maps Jubilee Road, Exeter, Google, 2023 (accessed 5th April 2023)

[27] Google Maps Nichols Way, Exeter, Google, 2023 (accessed 5th April 2023)

3. **Terraced or semi-detached with non-dedicated parking a short distance away** - Locations with parking on the road, but further away from the houses or separated by significant grass verges.

Figure 25: Street view of terraced or semi-detached houses with non-dedicated parking a short distance away[28]

A wide variety of on-street charging technologies are available in the market or in development. These were analysed to understand which were sufficiently mature to meet cost and space needs for those drivers parking without off-street parking.

This analysis concluded that the available options for on-street provision are public chargepoints (pedestal), cable channels and/or lamppost chargepoints.

Each is expanded in more detail, below.

On-street Pedestal Chargepoints

Pedestal chargepoints are a common chargepoint technology. They are typically standard (7.2 kW) or fast (22 kW) chargepoints which are freestanding and generally have one or two sockets, both of which can be used at the same time. These are not normally difficult to install but are the most likely to have challenges with narrow pavements.

Cable Channels

Cable channels have been found to be an appropriate option for some housing archetypes. This is because they are relatively easy for the council to install, without the need for costly grid connections, metering, or upgrades since they are paired with a chargepoint installed privately on the resident's land and utilise their personal electricity supply. The chargepoint is also expected to be privately funded by the resident.

The complexity when considering cable channels is multifaceted. One problem is the policy position on allowing them, as they are extra street furniture which, when not installed correctly could create a trip hazard. This should be combatted by clarifying the position on who is responsible for maintenance and ensuring that whoever is responsible is maintaining the cable channel. Across the UK different approaches are being trialled with some LAs opting to push the maintenance burden onto the resident with an annual maintenance fee. Other are opting to maintain it as part of the highway. It is still uncertain which of the solutions is best but what is important is that the responsibilities are defined at an early stage of the development.

The installation of the cable channels can also be slightly more involved depending on any licences that are required before making amendments to highways. Some LAs in the UK are using Section

[28] Google Maps Rutherford Street, Exeter, Google, 2023 (accessed 5th April 2023)

50 of The New Roads and Street Works Act 1991[29] as the basis of licencing for the installation of such works.

Another point of consideration for cable channels is whether they are likely to be damaged if a vehicle were to drive over them. This could make them unusable or even dangerous to pedestrians. To combat this, the chosen cable channel should have been tested rigorously to ensure it is strong enough to withstand this.

While preventing parking on pavements is likely to be enforced in the near future, it is currently not possible to consider cable channels in areas where this is prevalent, as this could prevent access to the cable channels, or stop user from being able to disconnect their vehicle if someone were to park over the channel.

There is also the question of who pays for the cable channel. There is potential that the channel could be privately funded by the resident or subsidised depending on the installation costs. However, approaches to this also vary across the country. It is recommended that when a homeowner requests an installation, they should cover most of the cost. This then brings into question whether the homeowner who has a cable channel installed outside their house has the right to claim the space next to the cable channel as their own. It is recommended that residents be consulted on this, but since it is unlikely that the resident will need to charge every night that the bay by the channel be kept as unallocated parking (if it already is), especially if the parking on the street is extremely limited. In locations where parking can be allocated, such as is often the case for new build terraced houses, this should be considered. Maintenance of the channel is also an important consideration and as this is a new technology, there is limited evidence of this burden. This will likely be the responsibility of the council, but it may be possible to recoup a maintenance fee from users of the channel. However, in the vein of accessibility and equality to charging provision, it could be socialised across all residents, paid for through tax powers.

Although some suitable locations for the installation of cable channels have been identified, any location will have to be reviewed on a case-by-case basis to ensure there are no unique challenges or issues. It is also expected that the installation of cable channels will be demand driven. Therefore, it may be beneficial to develop a database of resident requests that will support the business case for this solution.

The Devon EVI Strategy favours cable channels as an effective delivery methodology and proposes the technology be trialled in the county. There are multiple ongoing trials of cable channels that DCC and ECC can learn from, including LEVI pilot projects in Nottinghamshire and Oxfordshire.

> Cable channels could form a major part of the EVI solution for residents without off-street parking. As this is a new technology and approach it is imperative that ECC works with DCC to design a policy on how these are deployed. This should include where they can and cannot be installed, who can install them, who is responsible for the installation costs and who is responsible for the maintenance burden.

Lamppost Charging

Lamppost charging is a popular on-street charging solution for many LAs. It offers a cheap on-street charging solution that often adds no additional street furniture. Furthermore, lamppost chargers do not require DNO engagement or grid upgrades, instead utilising spare electrical capacity made available after lamppost are upgraded to lower-power LED bulbs.

The installation of lamppost chargers is relatively straight forward with the charging socket being retrofitted to the lamppost using the existing power supply and requiring no additional street furniture. This means that this form of EVI can be rolled out relatively quickly.

There are a large number of lampposts that could serve a significant proportion of the residential charging need if electrified. These are often located on residential streets, so EV drivers are able to

[29] https://www.legislation.gov.uk/ukpga/1991/22/section/50, Accessed 15th March 2023

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park and charge near to their houses. Close proximity to homes means users tend to feel safer during their charging experience, for both them and the security of their vehicle.

Furthermore, lampposts are typically co-located with long-stay parking, that can be served by lower charging powers. This matches the low power limitations of lamppost charging and reduces the need for expensive grid upgrades.

Finally, it should be noted that lamppost chargers contain a lower embedded carbon footprint than traditional chargepoints, as fewer components are required in their manufacture and installation.

The only instances where lamppost charging is generally not feasible is where lampposts have been relocated from the edge of the pavement to the back, as has sometimes been done to improve accessibility for pedestrians. In such instances, lampposts can still be used to provide power for EV charging, but additional equipment will need to be installed to prevent EV charging cables from being trailed dangerously across a pavement.

Lamppost chargers may form a major part of the EVI solution for residents who park a distance away from their house.

7.4.4 Best-Suited EVI for Each Property Archetype

For each of the specific locations, the property archetype was determined and the EVI options were identified. Generally, archetypes had similar challenges so therefore they also often had similar EVI solutions. This analysis enabled a matrix to be produced which matches archetypes and their challenges to the best suited EVI (Table 9):

Table 9: Building archetypes, challenges and best-suited EVI in Exeter

Archetype	Challenges	Best-suited EVI
New build terraced houses	• Land ownership issues • Difficulty locating cables due to private installation and likely use of Independent Distribution Network Operators (iDNOs)	1. Cable channels. 2. Lamppost chargers.
Terraced houses with dedicated parking bays (courtyard or garage)	• Land ownership issues • Limited on-street parking available	1. On-street pedestal chargers. 2. Lamppost chargers.
Terraced houses with non-allocated on-street parking	• Narrow roads and pavements • Limitations of nearby cabling	1. On-street pedestal chargepoints. 2. Cable channels. 3. Lamppost chargers.

For terraced or semi-detached houses with dedicated parking a short distance away, the most suitable form of EVI would be on-street pedestal chargepoints either on the pavement or on buildouts, as these areas are unsuitable for pavement channels.

With these sites, different types of EVI will be most suitable. For terraced houses with non-dedicated parking, the road and pavements are often narrow, meaning that on-street chargepoints would either make the pavements inaccessible or take up the already limited road space on buildouts, reducing the parking capacity. As such, for these sites, the most suitable on-street EVI would be pavement channels, though this could create issues with people wanting allotted parking directly outside their house to allow them to use their cable channel whenever.

For terraced or semi-detached houses with non-dedicated parking a short distance away, the most suitable form of EVI would be on-street pedestal chargepoints either on the pavement or on buildouts. If there is a large grass verge in these places, it may be possible to widen the pavement to ensure accessibility while allowing for pedestal chargepoints, but if this is not the case, it would be most suitable to install buildouts or utilise existing ones with bollard or pedestal chargepoints.

7.4.5 Timelines

The provision of on-street infrastructure will likely follow the LEVI timelines and ECC should engage with Devon to ensure alignment and provision as early as possible. The LEVI timelines are outlined in section 10.2.

7.4.6 Recommendations

The following recommendations are made for ECC to advocate for comprehensive EVI provision across the city that is consistent, accessible, integrated:

- Collaborate with DCC to provide low-powered AC infrastructure for residential users in areas that cannot be served by car parks.
- Deliver a mix of chargepoint types, where most appropriate including pedestal chargepoints, pavement channels, and lamppost charging.
- ECC should advocate that every resident is never more than a 5-10 minute walk away from a chargepoint.
- Trial cable channels as a delivery methodology for on-street EVI, as they could form a major part of the EVI solution for residents without off-street parking. Whilst building on existing cable channel trials.
- Work with DCC to design a policy for the deployment of cable channels, including their installation, maintenance, and location.
- Conduct further analysis to understand on-street need and EVI numbers, and work with DCC to establish appropriate locations and technologies for on-street EVI in Exeter.

7.4.7 Actions and Next Steps

The following actions and next steps are suggested to advocate for EV infrastructure in on-street:

Actions	Conduct further analysis to understand on-street need and EVI numbers.	☐
	Work with DCC to establish appropriate locations and technologies for on-street EVI in Exeter.	☐

7.5 Focus 3: Partner for Wider Provision

7.5.1 Summary

To further support the delivery of a comprehensive and sustainable EV charging network across Exeter, ECC should work in partnership with local businesses and organizations to provide charging infrastructure in private areas such as workplaces, supermarkets, public institutions such as hospitals and universities, and other high-traffic locations. With a priority focus on areas of Exeter that are not served by car parks.

In addition to this, ECC will advocate for private sector support to provide Rapid and Ultra-Rapid charging, which are mostly commercially viable and do not require public intervention.

7.5.2 Locations

In section 6.1 (page 26) it was identified that some EVI coverage could be achieved through strategic partnerships with partner sites in Exeter. These areas were selected due to their proximity to areas

in high need of residential EV charging as locations with significant land ownership that could be provided for residential EV charging outside of working hours. The locations suggested are:

1. The area surrounding the Royal Devon & Exeter Hospital Park and Walk including the Nuffield Hospital and the Mardon Neuro-Rehabilitation Centre.
2. The areas surrounding the Exeter Crematorium including the overflow car park just off Topsham Road.
3. The area surrounding the Stone Lane Retail Park north of Alphington.
4. The area surrounding Morrisons north of Polsloe.
5. The area surrounding Heavitree Hospital including Waitrose and the University of Exeter St Luke's Campus.
6. The areas surrounding the University of Exeter main campus in the west of Pennsylvania.

For these sites, a residential permit scheme could be adopted, and installation of EVI could also benefit visitors, staff, and customers at each location.

Figure 26, below, shows six areas with the potential for partnerships with third parties. These sites include car parks in the areas around hospitals, university campuses and the cemetery. The aim of these sites would be to form agreements with site owners around parking for residents, and the provision of chargepoints could be for residents and staff or visitors, providing better value while helping to solve the problem of lack of charging for residents. Other partnerships in other areas may be possible, but if any partnerships are not possible alternative on-street provision will be needed in these areas.

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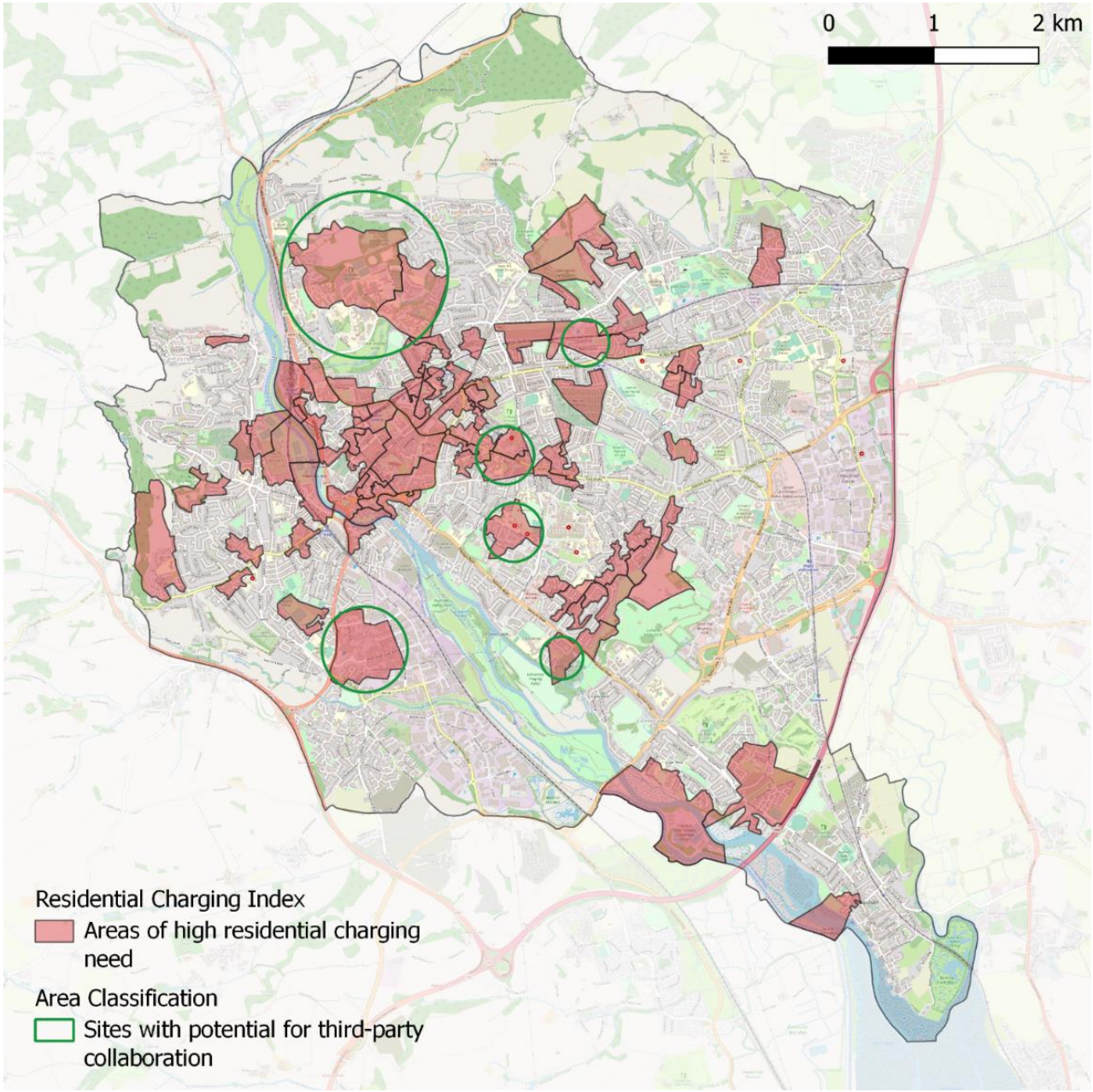

Figure 26: Areas of high need with potential for partner sites

7.5.3 Charging Hubs on Partner Land

Charging hubs like those recommended for Focus 1 (see Section 7.2 on page 32) may be an interesting option to explore with partners. This is in part since these partners own private car parks in the vicinity of homes that have high need for residential charging. Because these car parks are already established, generally no additional planning regulations or alterations to streets are required. This should reduce pushback from users who might be concerned about a reduction in parking availability.

The benefits of charging hubs on partner land are two-fold. Firstly, delivering charging hubs near to high-need areas would benefit commuters in the day and residents at night. Secondly, as private car parks are common at potential partner sites, this would allow commuters and visitors to the region to charge vehicles. This can increase the attractiveness of the site to visitors and supports improvements in air quality of those areas, by encouraging zero-emission vehicles into the area.

Regardless of the perceived benefits of charging hubs, there will be locations that may initially seem suitable that, upon further consideration, are found not to be. This could be down to concerns such as anti-social behaviour in the area which would sway users away from using the EVI. It is imperative

that when selecting locations for hubs, local knowledge of the site should be sought to highlight any concerns before any work begins.

There are two approaches ECC can take to deliver charging hubs on partner land. ECC can either agree to allow ECC to install their infrastructure on the partners land and operate as per in the car parks. Or encourage identified locations to deliver infrastructure and advocate for it to meet ECC's aims.

The types of chargepoints commonly found in EV charging hubs are as follows:

Standard 7 kW chargepoints

The majority of recommended chargepoints are standard chargepoints. These have the capacity to recharge a vehicle from empty in around 8 hours, delivering 7 kW of power. These are recommended because some car parks have a very low turnover, with vehicles potentially parking all day. These chargepoints are also ideal for supporting local residents who can opt to charge their vehicle in these car parks overnight. For visitors and car park users who are staying for a shorter time, they can opt to utilise the chargepoints to top their vehicle up without fully charging, or they can consider plugging in to one of the higher-power chargers that have also been recommended for these car parks.

Fast 22 kW chargepoints

Fast chargepoints are likely to be suitable for most car parks. These chargepoints deliver 22 kW of power and can charge a compatible vehicle in 2-3 hours. However, where vehicles are not able to charge at 22 kW, they can still deliver 3 – 11 kW depending on what power the vehicle can receive. These have been recommended as they can allow for a slightly higher turnover for vehicles that can utilise the full power of them, while also being used for the longer stay applications such as overnight parking for residents. For visitors who cannot make use of the full power or need more charge in a shorter time they can utilise the higher-power rapid chargepoints. Fast 22 kW AC charging equipment is typically similar in cost to Standard 7 kW equipment so, in some cases, it can be a no-regret decision to install Fast chargepoints instead of Standard.

Rapid 50 kW chargepoints

Rapid chargepoints may be worth consideration in some car parks with particularly short parking times. These chargepoints can deliver up to 50 kW and can charge a vehicle up to 80% in less than hour. These chargepoints are ideal for low dwell-time, high turnover car parks, and can provide charging for visitors and residents who are using local amenities. In general, it is expected that residents will charge overnight at charging hubs so will make most use of lower powered EVI. However, rapid EVI can build resilience into a charging network and can support residents if they have been unable to charge their vehicle and therefore need a quick top-up before heading on a journey.

Ultra-rapid 150 kW chargepoints

Ultra-rapid chargepoints are not recommended for partner car parks. These chargepoints deliver up to and beyond 150 kW and can charge a car up to 80% in as little as 20 minutes. Due to the high-power requirements of these, they generally need grid reinforcement or new substations to install multiple units and can be very costly to purchase and install. These chargepoints are recommended for installation along the strategic road network where people are likely to need to utilise such high-power charging. This portion of EVI also has the greatest potential for revenue due to the rate they can charge at and are commonly being installed fully funded by the private sector.

Charging hubs at partner sites should mostly contain Standard chargepoints, with Fast and Rapid chargers offered to cover specific alternative use cases. Ultra-rapid chargepoints are not appropriate for installation in these charging hubs, although their

installation along the strategic road network by the private sector should be supported by ECC, where possible.

7.5.4 Timelines

Advocacy with key stakeholders and prospective partner sites should begin as soon as possible, although Focus 1 and Focus 2 should be higher priorities if resource is constrained for ECC. ECC should position themselves to be aware of other EVI delivery and plans and make sure they are not conflicting with Exeter's aims, where possible. So early engagement with key stakeholders will be necessary.

Exeter should aim to have comprehensive EVI coverage across the city by 2035.

7.5.5 Recommendations

The following recommendations are made for ECC to advocate for comprehensive EVI provision across the city that is consistent, accessible, integrated:

- ECC should work in partnership with local businesses and organisations to provide consistent and accessible charging infrastructure in destinations such as workplaces, supermarkets, and public institutions such as hospitals and universities.
- ECC should advocate for private sector support to provide Rapid and Ultra-Rapid charging, which are mostly commercially viable and do not require public intervention.
- Locations that are in high need of residential EV charging should be identified, and a residential permit scheme could be adopted. These sites could benefit visitors, staff, and customers at each location. Six areas with potential for partnerships with third parties are suggested, including car parks in the areas around hospitals, university campuses, and the cemetery.
- Charging hubs may be an interesting option to explore with partners, especially if the partners own private car parks in the vicinity of homes that have high need for residential charging. Charging hubs can increase the attractiveness of the site to visitors and support improvements in air quality of those areas, by encouraging zero-emission vehicles into the area.
- Standard 7 kW chargepoints, fast 22 kW chargepoints, and rapid 50 kW chargepoints are the types of chargepoints commonly found in EV charging hubs. ECC should carefully select locations for hubs by seeking local knowledge of the site to highlight any concerns before any work begins.

7.5.6 Actions and Next Steps

The following actions and next steps are suggested to support partnership provision of EV infrastructure:

Actions	Develop an external stakeholder working group	☐
	Develop ECC guidance/principles for EVI in Exeter	☐
	Engage local stakeholders for provision identified	☐

7.6 Focus 4: Prepare for Future Deployments

ECC should prepare for future EVI need and plan for provision for lower demand areas and need beyond 2030.

Serving areas of lower need, not met by car parks.

While the first three Focus Areas are targeted at the areas of highest need for residential EVI, it is also important to consider areas with lower demand (Figure 27). Exeter is expected to have up to 82,000 electric vehicles by 2040, while there are currently around 12,777 residential parking permit bays in the city. A significant number of these vehicles will be associated with households that have off-street parking, there is still likely to be considerable disparity, even if every permit parking bay were to have EVI installed, which is not practical. Although these areas may have more access to off-street parking, there may still be housing without access to off-street parking, such as buildings with communal parking in a courtyard, that are more complex to install EVI for individual residences.

To address these challenges, a variety of charging solutions will be needed, including on-street charging where feasible, as well as a mix of standard, fast, rapid, and ultra-rapid charging. Standard and fast charging can support people who need to charge near home or work, while rapid and ultra-rapid charging can support top-up and fuel station-style charging, typically located along the strategic road network.

ECC should prepare to engage with DCC to provide on-street solutions to be provided by DCC, whilst building good relationships with housing associations or landlords to enable shared access to EVI for residents.

Commercial operators are likely to provide rapid and ultra-rapid charging along the strategic road network, such as at the Shell Petrol Station on Rydon Road, as such sites have a stronger short-term business case and are therefore more attractive for private-sector investment.

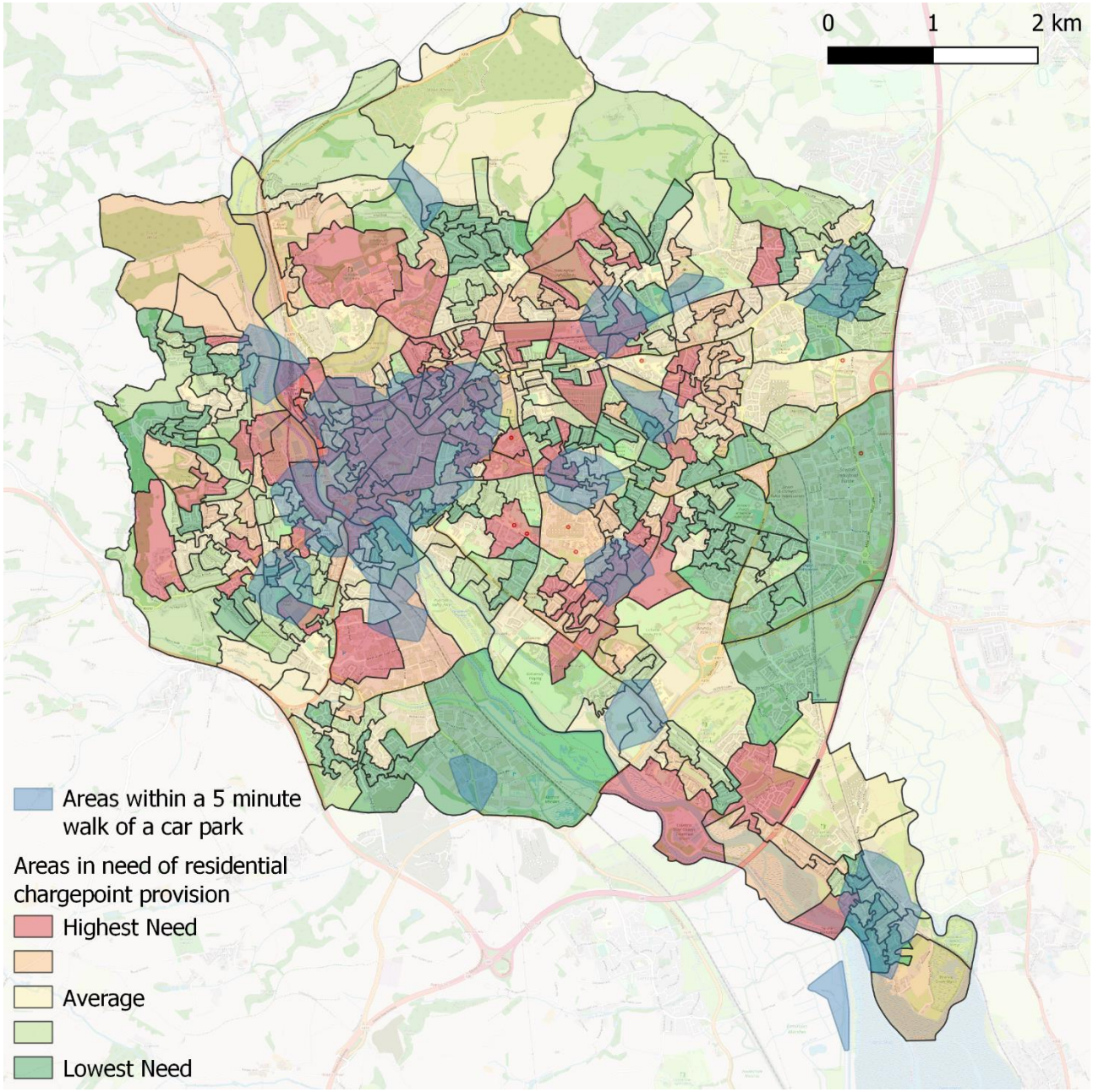

Figure 27: Exeter residential charging need, and areas within 5 minutes' walk of ECC-owned car parks

Chargepoint Lifetime

ECC should prepare for the replacement of units in the future provision plans. Chargepoints are anticipated to have a life span of around 8-15 years for Slow, Standard and Fast AC equipment, and 6-10 years for Rapid and Ultra-rapid DC equipment.

7.6.1 Timelines

ECC should be monitoring chargepoint utilisation and EV uptake trends across the city to enable it to act based on the outputs of the analysis. However, as a general timeline, ECC should plan for lower areas of need from 2030 onwards and seek to have comprehensive coverage across the city in the 2030s.

7.6.2 Recommendations

- Prepare for future EVI need and plan for provision for lower demand areas and need beyond 2030.
- Plan for lower areas of need from 2030 onwards and seek to have comprehensive coverage across the city in the 2030s.
- Advocate for on-street solutions that can be provided by DCC, while for apartment blocks or social housing, engage with housing associations or landlords to enable shared access to EVI for residents.
- Monitor utilisation and EV uptake trends to inform future provision plans and work with local stakeholders to develop solutions to install appropriately in the future.
- Prepare for the replacement of units after 8-15 years.

7.6.3 Actions and Next Steps

The following actions and next steps are suggested to prepare for future EVI delivery:

Actions	Establish a monitoring process, to inform future EVI roll out.	☐
	Engage local stakeholders for potential partners and possible locations for EVI in low demand areas.	☐
	Advocate for lower demand areas to be incorporated into DCC LEVI bid by means of additionality.	☐

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8 Preparing for Implementation

To deliver the Implementation Plan, Exeter City Council need to establish appropriate delivery structures and mechanisms. This includes determining the commercial arrangements, funding approach, delivery resources, procurement method, and stakeholder and community engagement plans.

8.1 Commercial Arrangements

Across UK local authorities, four typical commercial arrangements are in operation. This section presents analysis of their costs, revenue, and risks. The commercial arrangement has the greatest impact on the long-term return on investment, risks, and potential mitigations once the relevant chargepoint types have been identified.

8.1.1 Commercial Arrangement Options

Careful consideration of the commercial arrangements is crucial in determining which one best aligns with the needs of the LA and end-users. Broadly, the four arrangements provide a sliding scale of risk, responsibility, control, and revenue, as follows:

Own and Operate: Own & Operate is the most involved arrangement for the LA. They invest all capital costs, cover all operational costs, and retain all ownership, control, responsibility, risk and revenue. The LA may choose to discharge some activities through a subcontractor (i.e., installation).

Public Private Commercial Partnership: Public-Private Commercial Partnership (PPCP) is a flexible approach that shares aspects of capital cost, operational costs, control and risk between public bodies and their service provider(s). Specific examples of PPCPs include External Operator and Concession models.

Joint Venture: A Joint Venture (JV) is a separate business entity created by two or more parties, often including the LA and at least one service provider. This entity may itself deploy any of the other commercial arrangements to deliver EVI.

Land Lease: A Land Lease is a low risk-low revenue option where the LA retains little control over the resulting service by leasing land it owns to a service provider.

8.1.2 Comparison

The differences between commercial arrangements can be nuanced, depending on the division of risk, responsibility, control, and revenue. A comparison table has been created to show how each Commercial Arrangement (and some common subsets) compare against the following categories:

- Who Invests in the EVI?
- Who Owns the EVI?
- Who Controls certain key elements of the EVI network?
- Who is Responsible for what in the EVI network?
- Who Owns the key risks?
- Who receives the Revenue?

This comparison aims to clarify the differences between commercial arrangements and offers LAs a first step to explore the best approach for them.

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CATEGORY	Own and Operate	PPCP (External Operator)	PPCP (Concession)	Joint Venture	Land Lease
WHO INVESTS?					
CAPEX	LA	LA	LA or Supplier or Shared	JV	Supplier
OPEX	LA	Shared	Supplier	JV	Supplier
WHO OWNS?					
Distribution assets	DNO	DNO	DNO	DNO	DNO
Local connection assets	LA	LA	Supplier	JV	Supplier
Charging assets	LA	LA	Supplier	JV	Supplier
WHO CONTROLS?					
Technical specification	LA	LA	LA or Shared	JV	Supplier
Location choices	LA	LA	LA or Supplier or Shared	JV	LA
End user tariff	LA	Supplier	LA or Supplier or Shared	JV	Supplier
WHO IS RESPONSIBILE?					
Planning approvals	LA	LA	Supplier	JV	Supplier
Distribution assets	DNO	DNO	DNO	DNO	DNO
Local connection assets	LA*	LA	Supplier	JV*	Supplier
Chargepoint Installation	LA*	LA	Supplier	JV*	Supplier
Operations	LA*	Supplier	Supplier	JV*	Supplier
Insurance	LA*	Supplier	Supplier	JV*	Supplier
Customer service	LA*	Supplier	Supplier	JV*	Supplier
Electricity purchase	LA*	LA or Supplier	LA or Supplier	JV*	Supplier
Decommissioning	LA*	LA	LA or Supplier	JV*	Supplier
WHO OWNS THE RISK?					
Technology obsolescence	LA	LA	Supplier	JV	Supplier
Regulatory change	LA	Shared	Supplier	JV	Supplier
Electricity prices	LA	LA or Supplier	LA or Supplier	JV	Supplier
Utilisation	LA	Supplier	Supplier	JV	Supplier
WHO TAKES REVENUE?					
EV charging income	LA	Shared‡	Shared+	JV	Supplier
Ground rent	N/A	N/A	N/A	N/A	LA
	* May be subcontracted	‡ Operator retains smaller share	+ Operator retains larger share	* May be subcontracted	

Cost Split

In each model, elements of the capital cost, operating cost and revenue are shared differently between the council and supplier(s).

A summary of the typical proportion of cost incurred and revenue retained by the council in different options is shown in Table 10.

Table 10: Proportion of costs incurred, and revenue retained by the council for different commercial arrangements.

	Proportion of costs incurred, and revenue retained by the council					
	Hardware	Groundworks	Back-office	Electricity	Maintenance	Revenue
Own and Operate	100%	100%	100%	100%	100%	100%
PCPP External Operator	100%	100%	0%	100%	100%	90%
PCPP Concession	0%	100%	0%	0%	0%	30%
Lease	0%	0%	0%	0%	0%	20%

! In reality, the division of costs and revenues is on a sliding scale which is negotiated on a case-by-case basis. For instance, a council may wish to have a greater share of the revenue under a Concession model but will therefore need to pay for more aspects of the capital investments (i.e., part-fund the deployment).

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Control and Responsibility

When making decisions on chargepoint commercial arrangements, it is important to consider the non-financial implications of each model. Whilst the most obvious distinctions between each commercial arrangement are in how costs and revenue are shared, there is also a variable share in the contractual control over how the chargepoints are operated. In most cases, the greater the investment made by an external supplier(s), the greater the control of the supplier(s). In turn, this means that the council will have less control over the quality and type of service(s) provided to EV users on their site which, in a worst-case scenario, could create a negative perception of the council that they cannot easily address.

From a public sector perspective, many local authorities see benefit in taking EV charging infrastructure into public ownership because they can manage the infrastructure as a service to residents. In this approach, public sector chargepoint owners can set competitive usage tariffs that further incentivise the use of EVs. This also means that EV charging infrastructure can be distributed fairly across all demographics in the knowledge that short-term losses potentially incurred by chargepoints in areas of lower EV adoption can be covered by surpluses made by those in areas with better utilisation.

An alternative rationale for taking EV charging infrastructure into public ownership is that it allows the local authority to capture revenue. In this approach, public sector chargepoint owners set market-aligned tariffs that generate income.

Whatever the approach, there is therefore a cost-control trade-off to be made when a local authority is directly involved in the deployment of chargepoints (Figure 28).

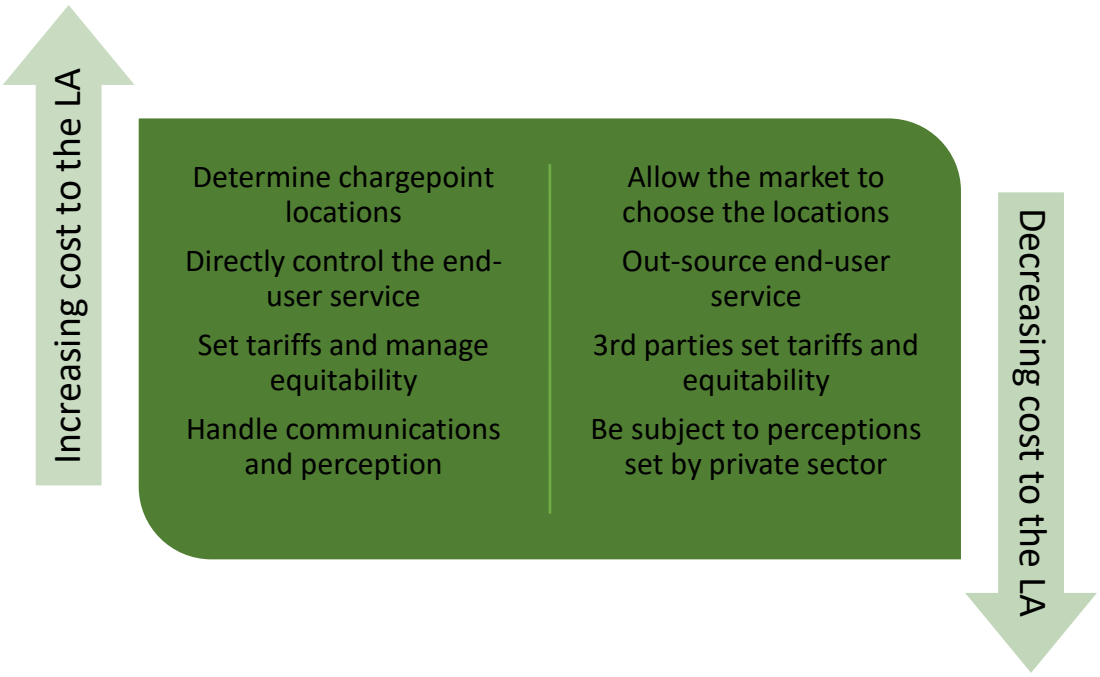

Figure 28: Cost-control trade-off for LAs

Whilst public intervention can have benefits across all types of EV charging infrastructure, it is most urgently needed in areas where private sector investment is unlikely to be forthcoming. The greatest example of such an area is residential on-street charging infrastructure, for which the business case is often weak when compared with rapid charging in high footfall destinations due to low utilisation. This has been recognised in recent UK Government funding schemes such as the Local EV Infrastructure (LEVI) Fund, which targets “near-home” (i.e., residential) charging and the On-street Residential Chargepoint Scheme (ORCS).

A key policy within the UK Government's EV Infrastructure Strategy[30] is that high-quality contracts should be agreed which make the most of public subsidy. Correspondingly, the funding level in the ORCS scheme has been dropped from 75% to 60% and a further prospective drop to 50% is anticipated. Whilst no funding level has been set for the LEVI Fund, there is strong encouragement to move away from fully funded models such as Own & Operate.

While Own & Operate is a potential solution that aligns with the LA's goals and offers the greatest revenue opportunity for Exeter. If it seeks central capital funding, it may have to accept lower levels of revenue and control through different models such as Concession or seek alternative funding options.

ECC historically has used the *Own & Operate* model to deliver the existing charging in Exeter, to ensure quality and control. However, there has been a significant improvement in the maturity of the market, facilitated by consumer experience consultations which will soon be reflected in secondary legislation. Therefore, some of the non-financial weaknesses of the Lease and Concession models have been addressed by improved services, higher driver expectations and greater hardware reliability.

The responsibilities for the council to own and manage and EVI network are substantial and will require significant financial and staff time investment. Owning EV infrastructure is not the only way to maintain control and influence over the network delivery, which can be curated through contract terms.

! Choosing the right commercial arrangement to get the cost-control balance right between financial and non-financial risks will be crucial to Exeter's delivery plan.

Contractual Terms

Regardless of the commercial arrangement pursued, contractual terms should be sought that ensure both financial and reputational risk are fairly distributed and that the level of service to EV users is maintained to the satisfaction of the council.

As part of the LEVI Support Body, Cenex has collaboratively developed with procurement experts and industry key Heads of Terms to guide local authorities in developing tenders, contracts and negotiating with suppliers. The first iteration of the guidance is for the Concession arrangement, shown in Appendix F: Concession Heads of Terms.

8.1.3 Recommendations

Taking these aspects together, the External Operator (EO) is the likely preferred option that aligns with Exeter City Council's aims. This option is a medium-high risk and medium-high revenue commercial arrangement that provides a high level of control over the EVI network to the LA while also generating revenue.

External Operator is a subset of the Public Private Commercial Partnership (PPCP) and allows the LA to invest the capital costs and retain ownership of the assets while transferring operational responsibilities to the service provider in exchange for a portion of the revenue.

External Operator aligns with ECC's goals allowing them to retain control over the EVI network ensuring quality and consistency, while generating and retaining revenue to invest in net-zero projects.

Joint Venture could be considered noting that Exeter have precedent for this in their housing delivery. An example of this for EVI is the Bristol LEAP[31].

[30] https://www.gov.uk/government/publications/uk-electric-vehicle-infrastructure-strategy, accessed 16th March 2023.

[31] Revive charging network - Travelwest (accessed 5th April)

Subject to capital availability, ECC should seek to deliver Focus 1 using an External Operator commercial arrangement.

8.1.4 Risks

An External Operator model requires the council to own and manage the EVI network which exposes some potential risks to be mitigated against:

Technological Innovation Leaves Council with Outdated Assets

The EV charging industry is young and fast-moving. Regular innovations and new ideas are announced, along with long-standing technological developments into vehicle-to-grid, static wireless, and dynamic wireless charging. Furthermore, research is ongoing into new battery chemistries which will have greater energy density and therefore improve vehicle efficiency.

The risk is that deployment of wired chargers by the council will be superseded by other developments. However, Cenex analysis of the state of charging technology indicates that wired charging will still be the dominant charging mode for this decade (Figure 29).

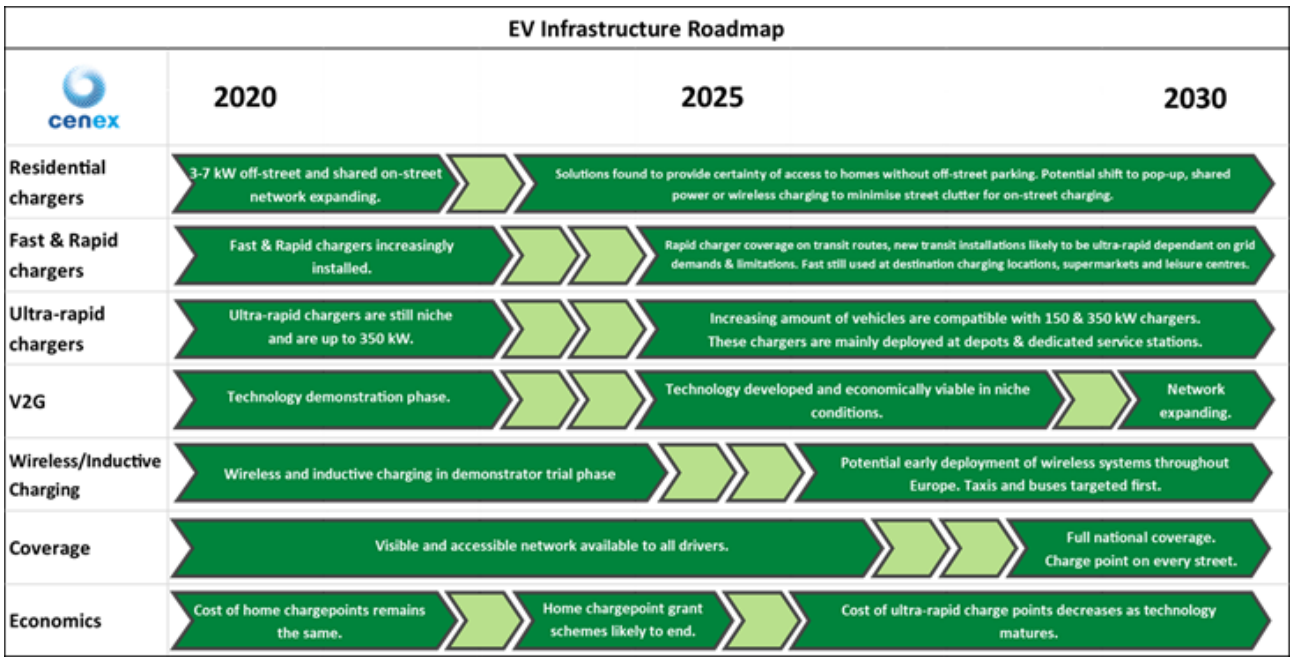

Figure 29 EV infrastructure roadmap 2020 -2030

If wireless charging (whether static or dynamic) is to come to fruition, it is Cenex's current view that this will be for specific applications such as taxis or buses. Wholesale adoption of wireless charging for cars and vans is not likely due to the requirement for industry standardisation and the chicken-and-egg effect where vehicles will not be provided wireless-ready until infrastructure is built – the latter requiring confidence that the former will occur.

The mitigation for this risk is to continue to track technology roadmaps and developments to inform the specifications of equipment which is procured.

It should be noted that, regardless of innovation in EV charging infrastructure, a similar amount of power will still be required from the electricity grid in similar locations as today (e.g. near to where people live). Therefore, in the context of electricity network infrastructure, there is negligible risk of stranded assets or obsolescence.

Wholesale electricity cost fluctuations

The current energy crisis is evidence of the rapidly evolving and increasing prices of electricity. The electricity costs are the biggest cost in operating an EVI network. The predictability and movement of the wholesale electricity cost is therefore a risk to profitability.

In the External Operator model, the council takes on this risk but has the ability to control the tariff rates. One mitigation would be to pass these costs onto the users. Maintaining a standard profit per kWh would mean that increases in electricity prices would not impact the margin being made on the chargers. This can only be done to one degree, however, before prices become too high and users start to find cheaper methods to charge or switch modes of transport. This may also adversely affect the community and remove access to the network for those who cannot afford it. Alternatively, the council could also choose to flex the margin to protect itself against this risk, without passing on all the burden.

A further mitigation would be to exploit Exeter owned renewable generation to minimise the impact of grid electricity cost inflations.

Resource

Delivering EVI requires significant resource, in particular for more hands-on commercial arrangements like External Operator that will likely require a team to co-ordinate and oversee planning and delivery and to seek input from across the council departments where required, such as procurement. The operational costs to resource delivery may exceed the revenue generation from the service, especially in early phases of delivery when utilisation is low.

LEVI Capability funds should be sought to contribute to resource costs, plus a business case that does not rely solely on chargepoint revenue to justify. Justifications shown in section 5 Benefits (page 22) should be applied in any business case.

8.1.5 Actions and Next Steps

The following actions and next steps are suggested to determine the commercial arrangement(s):

Actions	Assess and understand the commercial arrangements, determine if there is agreement with the recommendation for External Operator.	☐
	Conduct due diligence, ensuring that the council is willing and able to deliver against this model.	☐

8.2 EVI Funding

National government grant funding has been the most common funding source for EVI to-date there are lots of other funding sources ECC can access to support the delivery of EVI, some of these options are shown in the following section.

8.2.1 Accessing Central Government Funding

National government grant funding has been able to help the industry mature and support the shift to EVs. As the market develops, it is anticipated that national government grant funding will tail off.

Currently, the UK Government has two main EVI funds for public EV chargepoints – the On-Street Residential Chargepoint Scheme (ORCS) and the Local Electric Vehicle Infrastructure (LEVI) Capital fund for England.

LEVI is focused on catalysing the commercial market and is therefore bias toward commercial arrangements that deliver the best value for public subsidy. Therefore, it is imperative to secure supporting funding to bolster the public funding ratio. There are several other funding sources identified below.

8.2.2 Other Funding Sources

A range of public and private funding sources are available and successfully used in the market today. These may be used separately or together to fund an EVI project. These would reduce the need to use UK Government capital funding and thus give the council greater control over the model it wishes to use.

Loans & Borrowing

Loans are available for net-zero and EVI projects via the UK Debt Management Office. As the market moves to an early majority, private lenders are also beginning to offer loans for EVI. The key factors to consider are the tenure of the loan (length of term) and interest rates which can be fixed or floating. The repayment of the loan will typically rely on revenue from the EVI deployment. Therefore, a good view of current and future utilisation of the EVI and a commercial arrangement which allows the LA to earn sufficient revenue are essential to secure the loan. Some innovations in the green finance industry are working on lending products which link the loan payback to EVI utilisation. The following are some sources of EVI loans for LAs.

Public Works Loan Board (PWLB): The PWLB is operated by the UK Debt Management Office (DMO) on behalf of the HM Treasury. The board provides loans to LAs from the National Loans Fund for capital projects.

Asset Finance by Crown Commercial Services (CCS): CCS have a Loan and Leasing Dynamic Purchasing System (DPS) which provides LAs access to funding for the acquisition of assets including EVI. The DPS offers a choice of financing options, including hire purchase and asset secured loans.

UK Infrastructure Bank (UKIB) Lending: The UKIB is a UK government-owned policy bank set up to provide infrastructure finance to drive growth in the green industry. The UKIB is engaged in supporting the EV sector via the Charging Infrastructure Investment Fund and alongside this are welcoming engagement with LAs to provide lending for projects which meet their minimum threshold.

Bonds

A bond is a fixed-income instrument used to finance larger investments. These are different to loans as they are tradeable and fixed rate, whereas loans are not tradeable and may have either fixed or floating rates.

Bonds that are used to raise funds specifically for climate-related projects are often called Green Bonds or Local Climate Bonds. These are linked to assets and backed by the issuer's balance sheet. Although not regulated, LAs are wise to use internationally recognised Green Bond Principles or Climate Bonds Initiative standards to define the approach to issuance and set rules on the use of proceeds.

Supplier Funding

Chargepoint operators, suppliers of EVI and partner organisations also offer funding for of EVI. These sources usually cover a portion of the total costs and retain an appropriate portion of revenue in order to recoup their investment and make a profit. In some cases, these sources will fully fund EVI. However, this usually comes with strict contractual terms and longer contract lengths, as seen in Commercial Arrangements such as Public-Private Commercial Partnerships.

Regional Funding

Funding for EVI might be available through regional sources like Combined Authorities, Sub-National Transport Bodies, Net Zero Hubs and/or Local Enterprise Partnerships.

Community Funding

Funding for EVI could be developed through community funding methodologies including crowd funding or community investment schemes.

8.2.3 Recommendations

With an External Operator commercial model, ECC need to secure funding to cover the capital expenditure. This should be sought through borrowing, asset financing or private investment. Asset financing may require a larger scale of investment than what ECC has planned. Therefore, collaboration with other partners, neighbouring authorities, or stakeholders may be necessary to

establish the required scale of investment. ECC should also seek LEVI capital and capability funding to accelerate and scale the delivery of charging infrastructure in car parks, and on-street in Exeter.

8.2.4 Actions and Next Steps

The following actions and next steps are suggested to determine the funding approach and secure additional funding:

Actions	Determine the funding approach for the EVI programme, as per the options described above.	☐
	Develop the business case for securing additional funding and/investment.	☐
	Secure additional funding to support the implementation and operation of the programme.	☐
	ECC should engage with DCC to contribute to the LEVI Capital fund EOI	☐
	ECC should prepare to contribute to the full application, ensuring Exeter's delivery priorities are met within the constraints of the fund.	☐
	Develop a close working relationship with Devon County Council.	☐

8.3 Resourcing the EVI Programme:

Delivering EVI requires significant resources, particularly for more hands-on commercial arrangements like External Operator. This will likely require a team to coordinate and oversee planning and delivery and to seek input from across the council departments, where required, such as procurement.

8.3.1 Regional Collaboration

ECC should consider regional collaboration, where appropriate. Collaborating with DCC, and other neighbouring authorities could unlock some efficiencies for resourcing. This is because activities that would otherwise have been repeated across several local authorities can be conducted once and applied regionally. Activities that could be pooled and conducted regionally, if appropriate include:

- Developing procurement specifications;
- Running procurement tenders;
- Contract management;
- Installation audits;
- Analysis and reporting; and
- PR and communications.

Benefits of Regional Collaboration

An additional benefit of conducting activities such as these at a regional level is that it inherently brings consistency – one of the ECC aims. This has clear benefits to the end user since the suppliers are procured to operate a consistent and interoperable regional charging network, but also brings efficiencies to contracting authorities. By delivering consistency through a rationalised approach, engagement with the public can be more easily informed and less prone to confusion, as only one source of information and service is required rather than several.

8.3.2 LEVI Capability Fund

LEVI Capability funds are available for ECC, but the distribution will be through DCC, and there is currently no established mechanism for this. Therefore, ECC needs to engage with DCC and present their resource requirements to obtain funding. DCC has been allocated £660,000 for the remaining three years of the fund, but the amount available to Exeter may be limited, based on DCC's resource plans.

Increasing Resource Allocation

To qualify for the Capability Fund, ECC must demonstrate an increase in resource allocation to the project. This could involve dedicating full-time staff members to EVI or reallocating time from other supporting departments such as parking. Delivering the advocacy roles for ECC will likely require a substantial amount of resource and offers good justification for an increased resource allocation, including a clearly defined new role.

8.3.3 Structural Mechanisms for ECC to Operate an EVI Network.

Once resource is in place, ECC will need to set up the structural mechanism to operate an EVI network and determine which parts of the operation to procure from third parties to deliver. This can be broadly split into the following categories:

- **Preparation and Planning:** this includes site surveys, designs, DNO applications etc. and will likely be conducted by third parties on behalf of and managed by ECC.
- **Installation:** This involves physically installing charging stations, and ECC should work with a qualified EVI electrical installer to handle the installation process. This could be combined with DCC.
- **Operation:** The operation of the EVI network can be further divided into back-office operations and customer service. Both of which are likely to be offered by the chargepoint operator.
    - Back-office operations involve managing the chargepoint access, including usage data, payment information, and maintenance schedules.
    - Customer service includes providing support for users who may encounter issues with the charging stations or require assistance in using them, including a 24hr phone line.
- **Communications and promotions:** This involves developing marketing and communication strategies to promote the EVI network and its benefits to potential users. This could be delivered by both the CPO, ECC and DCC.
- **Maintenance:** This involves ensuring the chargepoints are functioning correctly and are in good working order, by responding to any issues and regular maintenance schedules. ECC will likely need to work with a third-party to handle maintenance and repairs of the charging stations, although some activities may be feasible within existing ECC maintenance programmes.
- **Co-ordination and Management:** In the External Operator model, ECC will likely take on the co-ordination and management of the scheme, although the CPO may take on some elements of this.

Structural Risks

If ECC procure multiple suppliers, careful terms, agreements, and methodologies will need to be in place between ECC, and the supplier(s) to successfully work together and integrate their services. A key example would be for hardware maintenance, where clear communication channels and issue resolution protocols must be established to prevent any disruption to the user experience. It is recommended that Key Performance Indicators (KPIs) be put in place to measure the time it takes to communicate known issues and the response times for maintenance requests.

Likewise, the procurement of services in an External Operator model requires careful consideration of compatibility. The risk here is ECC own hardware that CPOs will not operate meaning that the units will either be replaced prematurely to suit operational requirements or will become redundant assets. To mitigate against this, ECC should procure hardware that is interoperable supporting Open Chargepoint Protocol (OCPP) v1.6 or above for CPMS communications. Additionally, procure suppliers who are equally interoperable under terms to utilise the Exeter owned assets. Before committing to purchasing hardware, the council should engage prospective operators to ensure compatibility.

ECC will likely take a management and co-ordination role requiring careful consideration of the procurement terms and approaches and operational contract management. ECC should not underestimate the amount of resource and time required to manage, co-ordinate and deliver EVI in an External Operator model and should plan to resource accordingly.

8.3.4 Recommendations

The following recommendations are made for ECC to resource the EVI programme:

- ECC should consider regional collaboration where appropriate to unlock efficiencies for resourcing. This will bring consistency to the Exeter EVI programme and support in an interoperable regional charging network.
- ECC should engage with DCC and present their resource requirements to obtain LEVI Capability funds. ECC should demonstrate an increase in resource allocation to the project to qualify for the Capability Fund, which could involve dedicating full-time staff members to EVI or reallocating time from other supporting departments such as parking.
- ECC should identify key team members with applicable skills that can be allocated to support the EVI programme and define their roles and responsibilities clearly. Any skills gaps should be identified and a plan to fill them should be devised.
- ECC should establish the structural mechanism to deliver EVI, which can be broadly split into preparation and planning, installation, operation, communications and promotions, maintenance and management.
- ECC should procure hardware that is interoperable supporting Open Chargepoint Protocol (OCPP) v1.6 or above for CPMS communications, and compatible with Exeter owned assets. Before committing to purchasing hardware, the council should engage prospective operators to ensure compatibility.

8.3.5 Actions and Next Steps

The following actions and next steps are suggested to resource the EVI Implementation Plan:

Actions	Develop the business case for ECC to fund and allocate resource to EVI planning and delivery.	☐
	Ensure resource provision is applicable to the requirements of the chosen commercial arrangement. It is recommended that ECC have at least one dedicated, full time EVI staff member.	☐
	Identify key team members with applicable skills that can be allocated to support the EVI programme and define their roles and responsibilities clearly.	☐
	Identify any skills gaps and devise a plan to fill them, either by upskilling existing staff, recruiting new staff or contracting third party skills/expertise/suppliers.	☐
	Establish the structural mechanism to deliver.	☐
	ECC should seek LEVI Capability funding. To do this, ECC need to determine the increase in staff required to deliver and the budget requested to take to Devon in the next Capability fund application window. This window is not known yet. The Capability Fund can be secured with or without capital funding.	☐

8.4 Community Engagement

Comprehensive community engagement is encouraged to set the EVI programme up for success. There are four typical engagement approaches that occur across the delivery programme shown in Table 11. It is suggested that ECC conduct exploration, consultation and information engagement exercises. While there may be opportunity for early exploration engagement, the first step will likely be to consult the community on the outputs and recommendations in this report.

Engagement type	Purpose
Exploration	To understand more about what the community think, want, and need about a particular subject.
Co-design	Asking for in depth input and ideas on proposal
Consultation	Asking for input or opinions of proposals.
Information	Tell people about your plans, giving them information on why you are doing it, what you are doing, providing information on how they can find our more.

Table 11 Engagement approaches

8.4.1 Actions and Next Steps

The following actions and next steps are suggested to engage the community:

Actions	Develop a community engagement plan that outlines when, how, and why and whether the community shall be consulted, informed or if other methods and inputs are required.	☐
	Implement the engagement plan.	☐

8.5 Industry Stakeholder Engagement

Industry stakeholder engagement is a critical element in the delivery of an effective EV infrastructure. This involves identifying and engaging with the prospective supplier groups required to deliver the Implementation Plan, including chargepoint operators, maintenance contractors, and other relevant parties. It also involves engaging with industry stakeholders such as the Distribution Network Operator (DNO) and energy suppliers.

8.5.1 Identifying Prospective Suppliers

To ensure the success of the Implementation Plan, it is crucial to identify the prospective suppliers required to deliver the various services outlined in section 8.3.3 (page 64). This includes chargepoint operators, maintenance contractors, and other relevant parties.

Identifying prospective suppliers will require a thorough assessment of the market and an understanding of the available options. ECC should consider the suppliers' experience, expertise, and capacity to deliver the required services.

8.5.2 Engaging Prospective Suppliers

Once the prospective suppliers have been identified, ECC should engage with them to ensure they align with the ECC delivery approach and commercial model. This will require a clear and transparent dialogue to ensure that both parties are on the same page and can work together to deliver the Implementation Plan.

Engaging with prospective suppliers will involve sharing the Implementation Plan, the proposed Terms, and other relevant information to help them understand the project's scope and requirements. ECC should also seek to understand the suppliers' capabilities and limitations, including any potential challenges or risks that may arise during the delivery of the project.

8.5.3 Engaging Industry Stakeholders

In addition to engaging with prospective suppliers, it is also essential to engage with industry stakeholders such as the DNO and energy suppliers. These stakeholders play a critical role in the successful delivery of the Implementation Plan and can provide valuable insights and expertise.

Engaging with industry stakeholders will require a proactive approach, including regular meetings and consultations. ECC should seek to understand the stakeholders' requirements and constraints and work collaboratively to find solutions that meet both parties' needs.

8.5.4 Actions and Next Steps

The following actions and next steps are suggested for industry stakeholder engagement:

Actions	Identify the prospective supplier groups required to deliver such as, chargepoint operators, maintenance contractors etc.	☐
	Engage prospective suppliers to ensure they align with the ECC delivery approach and commercial model.	☐
	Engage with industry stakeholders such as the DNO and energy suppliers.	☐

8.6 Approach to Procurement

The chosen commercial arrangement will determine the approach to procurement. If the External Operator model is chosen, the Public Contracts Regulations 2015 (PCR2015) [32] must be complied with. Similarly, the Concession Contracts Regulations 2016 must be followed for concession contracts that are above the threshold value stated in the regulations. The procurement route chosen and the stages within it will impact the length of time that it takes to complete your procurement, so consider this as part of the overall project planning and timescales.

8.6.1 Service Requirements

To determine the necessary services to deliver the Implementation Plan, ECC should consult section 8.3.3 (page 64). After identifying the services required, the council should carefully consider the most effective procurement method, taking into account the compatibility impacts. ECC has the option to procure all services collectively or separately. Four options to consider include: EVI only, EVI plus operational services, EVI plus renewables, and EVI plus car parking services. Each service can be delivered in separate lots or as one integrated service, where feasible.

8.6.2 Market Engagement

ECC should engage with the market, including prospective suppliers and industry stakeholders, such as the DNO and energy suppliers. This engagement can help establish the suppliers' understanding of the council's desired outcomes and test the requirements. Additionally, this prepares suppliers to respond to procurement.

8.6.3 Frameworks and Dynamic Purchasing Services

Frameworks and Dynamic Purchasing Services can be a quick route to complete procurement. However, the council should evaluate the appropriateness of established frameworks and services before selecting them. The Crown Commercial Services (CCS) and Oxford dynamic purchasing services (DPS) frameworks are valuable resources for procuring suppliers. The CCS also offers asset financing, which may be of interest to Exeter.

8.6.4 Developing a Tender

Alternatively, Exeter can develop their own tenders. Cenex have developed some EVI specifications and KPIs to aid local authorities' procurement. These will be released shortly and will be shared directly with Exeter on their publication. The Heads of Terms document[33] is now public and can be found in as a supporting document, or on the NEVIS website, noting that these are for concession contracts.

This route may better suit an integrated procurement process with the parking services.

[32] The Public Contracts Regulations 2015 (legislation.gov.uk)

[33] LEVI Heads of Terms (cenex.co.uk)

8.6.5 Tender Evaluation Criteria

In order to select the best supplier, ECC should evaluate tenders using key criteria such as cost, quality, and time, as well as technical and operational solutions, implementation plans, and social value. The evaluation process must be conducted fairly and transparently to ensure a level playing field for all bidders. Ultimately, the contract(s) should be awarded to the most suitable supplier based on the evaluation results.

8.6.6 Recommendations

The following recommendations are made for ECC procure EVI services:

- Understand the required services to procure outlined in section 8.3.3 (page 64).
- Engage with the market to establish prospective suppliers' understanding of your service requirements and aspirations and test your requirements to prepare suppliers to respond to your procurement.
- Evaluate established frameworks such as the Oxford dynamic purchasing services (DPS) and the Crown Commercial Services (CCS) frameworks and dynamic purchasing services to determine which is best suited to meet ECC requirements. If no existing frameworks are suitable ECC should consider developing their own tender.
- Once ECC have tendered the contract should be awarded to the supplier based on the outcome of the evaluation criteria.

8.6.7 Actions and Next Steps

The following actions and next steps are suggested to determine the best approach to procurement for Exeter:

Actions	Begin market engagement	☐
	Begin procurement for applicable suppliers for key areas the council will not conduct themselves.	☐
	Develop tender requirements or specifications	☐
	Identify and procure delivery partners who will be responsible for the installation, operation, and maintenance of the charging infrastructure	☐

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9 Action Plan

This section consolidates all the actions outlined in the implementation plan. Its purpose is to provide ECC with actionable task list that can guide them in achieving their EVI objectives.

A supporting Gantt chart has been created and issued as supporting document. The Gannt chart provides, additional structure and priority to the task list below. Noting, however, the Gantt chart's planning assumes that Exeter will pursue LEVI funding and therefore be subject to the LEVI timelines.

9.1 Actions

Focus 1: Delivery in car parks	
Conduct site assessments, including surveys.	☐
Engage with commercial drivers and car club operators to understand their needs and requirements for EVI.	
Engage with the DNO on the scope and scale of the proposed programme.	☐
Develop an outline business case for EVI in car parks.	☐
Develop an outline business case for supporting solar generation, and storage.	☐
Develop generic site designs which can be adapted to specific sites.	☐
Explore, develop, and implement supporting initiatives.	☐
Focus 2: Advocate for on-street provision	
Conduct further analysis to understand the demand for on-street EVI.	☐
Work with DCC to establish appropriate locations and technologies for on-street EVI in Exeter.	☐
Focus 3: Partner for wider provision	
Develop an external partnership working group for coordination and best practice sharing.	☐
Develop ECC principles for EVI in Exeter.	☐
Engage local stakeholders to ensure demand is identified and acted-upon.	☐
Focus 4: Prepare for future deployments	
Establish a monitoring process, to inform future EVI roll out.	☐
Engage local stakeholders for potential partners and possible locations for EVI in low demand areas.	☐
Advocate for lower demand areas to be incorporated into DCC LEVI bid by means of additionality.	☐
Prepare for implementation	☐
Determine the commercial arrangement(s):	☐
Action: Assess and understand the commercial arrangements, to review and approve the External Operator model.	☐
Action: Conduct due diligence, ensuring that the council is willing and able to deliver using this model.	☐
Determine the funding approach and seek to secure additional funding:	☐
Action: Determine the funding approach for the EVI programme, as per the options described on page 57.	☐
Action: Develop the business case for securing additional funding and/investment.	☐
Action: Secure additional funding to support the implementation and operation of the programme.	☐
Access LEVI funding:	☐
Action: Engage with DCC to contribute to the LEVI Capital fund EOI.	☐
Action: Prepare to contribute to the full Capital application, ensuring Exeter's delivery priorities are met within the constraints of the fund.	☐
Action: Develop a close working relationship with Devon County Council's EV team.	☐

Resource the EVI programme:	
Action: Seek LEVI Capability funding to support the increase in staff required to deliver the programme.	
Action: Develop the business case for ECC to fund and allocate resource to EVI planning and delivery.	☐
Action: Ensure resource provision is applicable to the requirements of the chosen commercial arrangement. It is recommended that ECC have at least one dedicated, full time EVI Officer.	☐
Action: Identify key team members with applicable skills that can be allocated to support the EVI programme and define their roles and responsibilities clearly.	☐
Action: Identify any skills gaps and devise a plan to fill them, either by upskilling existing staff, recruiting new staff or contracting third party skills/expertise/suppliers.	☐
Action: Establish the structural mechanism to deliver.	☐
Community engagement:	
Action: Develop a community engagement plan that outlines when, how, and why and whether the community shall be consulted, informed or if other methods and inputs are required.	☐
Action: Implement the engagement plan.	☐
Industry stakeholder engagement:	☐
Action: Identify the prospective supplier groups required to deliver such as, chargepoint operators, maintenance contractors etc.	☐
Action: Engage prospective suppliers to ensure they align with the ECC delivery approach and commercial model.	☐
Action: Engage with industry stakeholders such as the DNO and energy suppliers.	☐
Procurement:	
Action: Determine the best approach to procurement for Exeter.	☐
Action: Begin market engagement.	☐
Action: Begin procurement for applicable suppliers for key areas the council will not conduct themselves.	☐
Action: Develop tender requirements or specifications.	☐
Action: Identify and procure delivery partners who will be responsible for the installation, operation, and maintenance of the charging infrastructure.	☐

9.2 Success Criteria

Effective monitoring and evaluation of this implementation plans success is critical for ensuring that the project meets its objectives and delivers maximum value. Success metrics provide a clear and measurable way to assess progress, evaluate outcomes, and demonstrate impact. This section outlines some of the key success metrics that can be used to evaluate the performance of the plan.

The aims outlined in section 2.5 (page 12), have been applied as headlines with specific measurable targets underneath them. Where possible metrics have been structured into SMART objectives, however there are a number that require further exploration to determine suitable measurements.

Aim: Leveraging council assets, such as car parks

- Deliver EVI in ECC car parks by 2030.

Aim: Catalysing sustainable EV uptake

- Deliver ahead of need. By installing the number of sockets required for 2030, Exeter City Council ensures that the demand for the remainder of the decade can be met.
    - Install at least 200 sockets in ECC car parks by 2030.
    - Collaborate with DDC to deliver the required number of on-street sockets (number to be determined with additional analysis and work with DCC).

Aim: Deliver Consistent, Accessible, innovative, integrated EVI

- Provide charging infrastructure for residents within a 5-minute walk of an ECC car park via standard AC charging.
    - Suggested measures: number of car parks with EVI, number of residential park & charge permits.
- Provide charging infrastructure for commuters, visitors, local businesses, and last mile delivery users via charging hubs.
    - Suggested measures: number of charging hubs delivered, number of commuter and commercial park & charge permits. Number of 'anchor load' agreements. Utilisation figures, for each user group from the back office.
- Develop multimodal hubs to integrate into public transport links, reduce car dependency, and enhance mobility and accessibility.
    - Suggested measures: number of mobility hubs delivered, number of car club and other transport mode users.
- Ensure a consistent experience for Exeter EV drivers across all routes to EVI provision.
    - Suggested measures: successful integration of EV and EVI into the transport app, application of ISO15188 and OCPI, number of units utilising the former technologies. User satisfaction ratings.
- Advocate for others to deliver EVI to serve areas where ECC car parks do not meet.
    - Suggested measures: number of partners and sockets delivered: Deliver <*insert number*> of sockets via the partnering and advocation routes.
- Deliver a comprehensive EVI network across Exeter by 2035:
    - Suggested measures: spread of infrastructure delivered across the city compared to need, including metrics such as distance to public charging infrastructure for drivers who do not have access to off-street charging.

Aim: Having a low environmental impact

- Deliver with supporting technologies including solar generation, battery storage and load management where feasible.
    - All sites will be served by a renewable energy tariff.
    - All charging hub sites will be delivered with solar, where feasible.
- Support emissions reductions.

Aim: Generating income for reinvestment

Numbers to be determined following business case development.

- Generate *£X* (TBD) revenue to invest in net zero projects.
- Or invest *£X* (TBD) proportion of revenue into net zero projects.

10 Engaging with the LEVI Fund

The LEVI Fund represents the largest central grant funding currently available to ECC. This section outlines the recommended approach for ECC to secure LEVI funding, taking into account the contextual factors, targets, priority areas, and assets outlined in the previous sections of this report. The aim is to equip ECC to facilitate productive discussions with DCC and support access to LEVI funding.

10.1 About LEVI

The UK Government's LEVI Fund supports local authorities in England to work with the chargepoint industry, to improve the roll out and commercialisation of local charging infrastructure. These public chargepoints will help residents who do not have off-street parking and need to charge their electric vehicles (EVs).

The fund includes:

- Capital funding to contribute to the costs of delivering chargepoints.
- Capability funding for local authorities to employ and train new staff specifically to plan and deliver chargepoint infrastructure.

The LEVI Fund has two main objectives:

- Deliver a step-change in the deployment of local, primarily low power, on-street charging infrastructure across England.
- Accelerate the commercialisation of, and investment in, the local charging infrastructure sector.

LEVI Eligibility

Only tier 1 authorities are eligible to apply for LEVI funding. Each eligible authority has been allocated a specific amount of funding based on an OZEV allocation methodology[34]. Exeter must agree on a sub-allocation of LEVI funding with DCC.

10.2 LEVI Timelines and Processes

Capability Fund

The first round launched in February and a further application round was open until May 26th 2023. DCC will submit a proforma application[35] form on behalf of the county. However ECC should ensure their resource requirements are incorporated as discussed in section 8.3 to enable them to secure Officer resource.

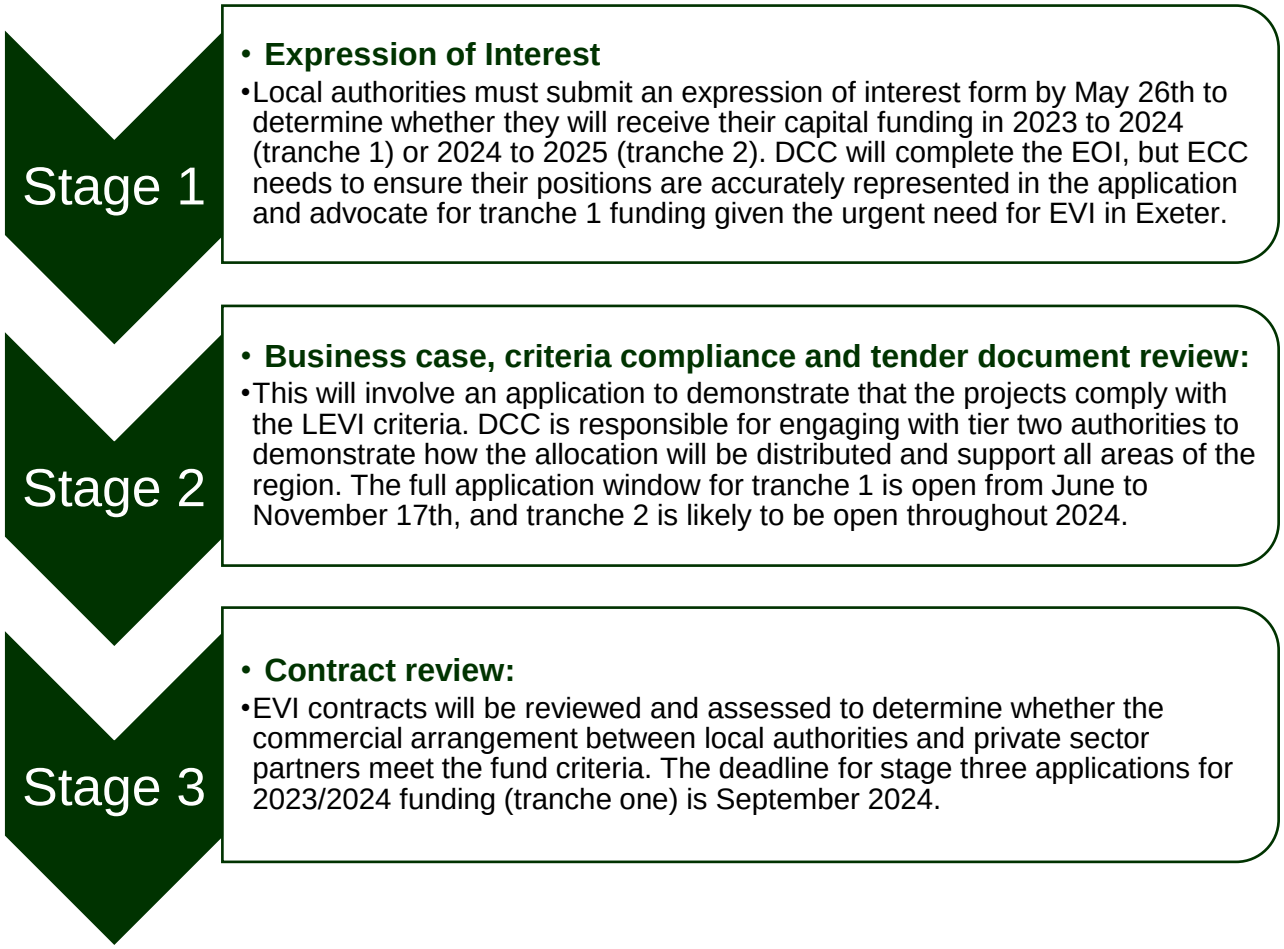
Capital Fund

The capital fund[36] involves a three-stage application process to access the allocated funding: expression of interest (EOI); business case; criteria compliance and tender document review; and contract review.

[34] Local Electric Vehicle Infrastructure (LEVI) funding amounts - GOV.UK (www.gov.uk) (Accessed 03/04/23)

[35] LEVI-Capability-Fund-Proforma-FY2324.docx (live.com) (Accessed 03/04/23)

[36] Apply for Local Electric Vehicle Infrastructure (LEVI) funding - GOV.UK (www.gov.uk) (Accessed 03/04/23)



10.3 LEVI Approach

The LEVI fund is structured to foster a collaborative effort from regional authorities to access funding and deliver on the LEVI criteria. DCC will lead the development of the submission although ECC should contribute heavily and collaborate with other authorities in the region to establish the best approaches and terms for the County and Exeter City.

DCC have been allocated £7,067,000, which will need to support the DCC EVI Strategy plans as well as any other council's plans to deliver in the county.

The DDC strategy aims to accelerate chargepoint deployment, by delivering 2,000 publicly accessible chargepoints across the county by 2030 by:

- Provide **on-street** residential chargepoints (standard/fasts)
- **Test** on-street residential **pavement channels**
- Deliver off-street residential hubs – **all council-owned car parks** should have fast or rapid chargepoints, check areas of need with proximity to publicly-owned assets.

The DDC EVI strategy encourages EVI installation in ECC's car parks. Therefore ECC should advocate for the plans outlined in this implementation plan to be incorporated in the DCC LEVI bid.

Furthermore, ECC should work with Devon to ensure on-street sites are delivered in appropriate locations, that do not compete with ECC car parks and are delivered to the standards ECC aspire to as outlined in this document.

ECC should work with DCC to incorporate the outputs of this implementation plan into the LEVI application for Devon County.

10.3.1 Delivering Against the LEVI Key Criteria

The Devon County bid must demonstrate how the whole scheme meets the LEVI objectives, as described in section 10.1. While, the rationale should be developed from a regional perspective, the following are suggestions for what ECC should do:

The ECC implementation plan shows clear rationale for predominantly low-powered provision to serve residential users. However, in collaboration with the other authorities in the county, ECC must carefully demonstrate how the scheme meets the criteria for value for money, additionality, and competition in order to accelerate the commercialisation of and investment in the local charging infrastructure sector.

Value for money refers to "*using public resources in a way that creates and maximises public value*" [37]. To achieve this, ECC should seek a large proportion of supporting investment from the private sector and work with the regional authorities to leverage this into viable schemes. Additionally, ECC should demonstrate why LEVI funding is required and why it cannot be wholly funded by private sector borrowing or other financing.

Additionality refers to the '*additional' chargepoints delivered through LEVI funding, which would otherwise not be delivered (at the point in time) wholly by private sector investment.* Therefore, ECC should seek to deliver sites that would otherwise not be delivered by ECC or privately, and demonstrate how LEVI funding can catalyse EVI delivery, enabling both increased scale and faster delivery.

Competition should be ensured through a competitive tender that allows the suppliers compete on cost and scale. This will help to drive down costs and increase the number of charging points delivered. Therefore, it is important for ECC to work collaboratively with regional authorities and suppliers to create the appropriate offering to leverage commercial interest.

Demonstrating regional collaboration to leverage scale, additionality, and value for money are key for LEVI funding.

Supporting Funding and Procurement

Navigating procurement for the LEVI fund requires careful consideration of the different approaches available for commercial arrangements. ECC has the flexibility to implement different models for EVI provision, including the External Operator (EO) model for car parks and the Concession model through DCC for on-street provision. However, the chosen model(s) must be justified and align with the LEVI aims and criteria.

If ECC decides to use the EO model for car park provision, they must demonstrate how this model can meet the LEVI aims and encourage private investment in the scheme. ECC must secure significant supporting capital against the car park sites and show a business case for private investment, highlighting how the revenue from the scheme will be used to pay back any loans acquired. The justification for choosing the EO model must be strong enough to convince the LEVI fund that it is the best approach for ECC and the region.

Devon County Council is expected to manage the on-street provision of EVI through a concession commercial arrangement. ECC should actively seek to provide input into the terms of the concession, and the outcome of any tenders. Additionally, ECC should explore the feasibility and appetite of procuring with DCC and other authorities in the vicinity to unlock economies of scale, to improve value for money, commercial interest, and market competition. Despite the varying commercial model approaches, there may be an opportunity to procure in lots with ECC car parks procured to ECC standards and commercial arrangements, such as an operator-only service for ECC within the wider DCC provision. This will ensure alignment with the ECC aims, ensure a consistent and coordinated approach across the county whilst meeting the LEVI aims and criteria.

[37] Department for Transport Value for Money Framework (link)

Supporting Initiatives

ECC should demonstrate how the supporting initiatives outlined in this document support the LEVI objectives including how the Park & Charge Permits can support equitable access to infrastructure and plans to ensure a consistent user experience across ECC car park EVI and DCC's on-street provision.

10.3.2 Prospective LEVI Car Park Sites

To achieve the LEVI objectives and use the LEVI Funding to serve lower priority sites earlier than would otherwise be possible (as articulated in Section 7.2.5 on page 37), it is suggested that ECC consolidate the projected need and deliver EVI in strategic car parks, as charging hubs. This approach enables a spread of coverage across the city, and serves immediate residential need, whilst also delivering for lower priority need. By consolidating and delivering larger charging hubs at fewer locations, creates efficiencies for installation and will likely enable a better business case for solar energy and infrastructure such as canopies.

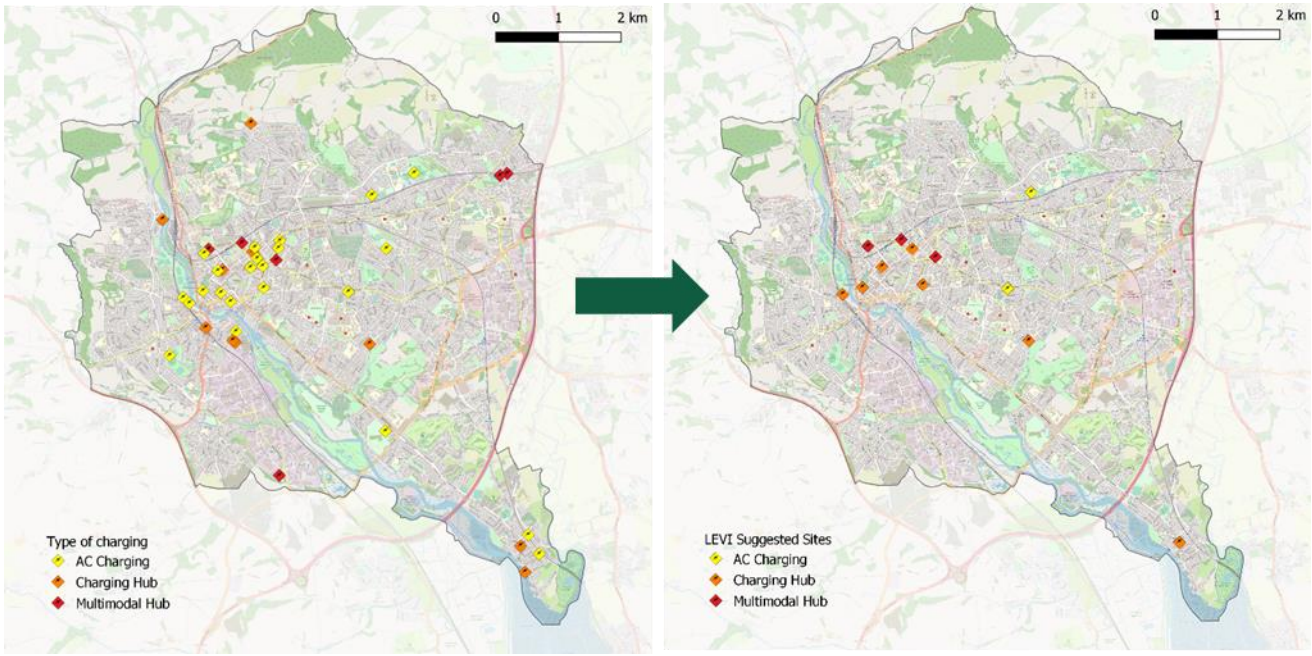


Figure 30 Visualisation of the consolidated car park provision.

A suggestion of consolidated sites is outlined below:

Multimodal Hubs

Triangle Multimodal Hub: serving Triangle, Parr Street and Princesshay 2

Bystock Terrace Multimodal Hub: serving Bystock Terrace and Richmond Road

Howell Road Multimodal Hub

Charging Hubs

Flowerpot Hub: serving Flowerpot and Okehampton Street.

Magdalen Road Hub: serving Magdalen Street and Cathedral & Quay

John Lewis Hub: serving John Lewis, Bampfylde Street, King William Street

Guildhall Hub: serving Guildhall, Mary Arches ground floor

Topsham Hub: serving Matthews Hall, Topsham Quay, Holman Way and Tappers Close

Wonford Sports Centre hub

AC Charging

Bartholomew Terrace

Betty's Mead Playing Field

Gordon's Place

This approach will deliver a total of 130 sockets, of which 84% are low powered and 25% would not be delivered until 2028.

To further meet the requirements for scale and additionality, ECC should consider including plans to deliver in all car parks in the LEVI application. However, this should be supported by a business case that ensures early delivery doesn't result in utilisation or investment return issues.

! Note: some of these sites may be limited by planned negotiations to make them paid car parks, ie. Wonford. Furthermore, by local knowledge, such as areas with high anti-social behavior.

Table 14 below displays the projected number of sockets for each consolidated site served by the proposed hub, obtained by adding up the number of sockets projected for each car park served as projected in Appendix D.

Table 12 Project no. of sockets at proposed consolidated strategic charging hubs

Site name	Standard	Fast	Rapid	Archetype	Notes	Priority for LEVI
Guildhall Hub	4	6	4	Charging Hub	Biased towards rapid charging due to low dwell time and provision of on-site solar	High
John Lewis Hub	10	8	3	Charging Hub	Biased towards rapid charging due to low dwell time and provision of on-site solar	High
Bartholomew Terrace Hub	10	2	0	AC Charging Hub	Standard charging focus due to residential permits provided for car park	High
Magdalen Road Hub	10	8	0	AC Charging Hub	Standard charging focus due to proximity to areas residential charging need	High
Bystock Terrace Hub	2	2	1	Multimodal hub	Multimodal hub focus due to proximity to train station	Medium
Howell Road Hub	4	4	4	Multimodal hub	Standard charging for nearby residents, consider multi-modal hub/rapid hub in future	High
Topsham Hub at Matthews Hall	2	2	1	Charging Hub	Not near areas of high residential demand, consider mix of charging for Topsham visitors	Medium
Triangle Hub	6	4	4	Multimodal hub	In area of demand, mentioned in ECC plans (approx. 60 bays)	High
Flowerpot / Okehampton Hub	4	2	1	Charging Hub	Standard charging due to proximity to area of residential need	High

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Wonford Sports Centre Hub	4	2	1	Charging Hub	Standard charging due to high nearby residential demand, rapid possible for sports centre customers	High
Betty's Mead Playing Field	2	2	0	AC Charging	Standard charging due to high nearby residential demand	High
Gordons Place	2	2	0	AC Charging	Standard charging focus due to proximity to residential need, potential for stakeholder partnership rapid in Co-op car park opposite	High
Total	62	46	19			

Sites that have not been selected for LEVI funding:

Although Matford Park and Ride and Pinhoe Multimodal Hubs are strategically important for reducing traffic to the city, they are not wholly suitable for LEVI funding due to low residential need. These sites are likely to be commercially attractive so could be utilized to leverage investment and support the wider schemes profitability. Although, alternative funding options will need to be considered to support their delivery, these sites could be leveraged through LEVI to achieve the fund aim to 'accelerate the commercialisation of, and investment in, the local charging infrastructure sector'.

Additionally, The Haven Banks hub, which serves Haven Banks 1, 2 and 3, have been omitted as although located in an area of heavy residential need are due for redevelopment. After redevelopment, both sites will require infrastructure and are likely to be subject to building regulations for passive infrastructure provision.

10.4 Actions and Next Steps

Actions specific to accessing LEVI funding are:

Actions	Action: Engage with DCC to contribute to the LEVI Capital fund EOI,	☐
	Action: Prepare to contribute to the full application, ensuring Exeter's delivery priorities are met within the constraints of the fund.	☐
	Action: Develop a close working relationship with Devon County Council.	☐

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11 Recommendations

ECC should ensure a fair and equitable transition to EVs by facilitating consistent, accessible, and innovative public chargepoint deployment – especially in locations where council assets can be leveraged.

ECC should aim to enable integrated and comprehensive public chargepoint provision in the city. This approach is based on three principles:

- Enabling a transition to EVs by delivering consistent and accessible standard, fast and rapid EVI for residents and visitors in council-owned car parks across Exeter, especially in areas with limited off-street parking for residents.
- Delivering widespread integrated standard, fast and rapid chargepoints with partnerships in areas not otherwise covered by council-owned car parks, especially areas with high residential need due to limited off-street parking.
- To offer comprehensive access to EVI across Exeter, working closely with Devon County Council to deliver appropriate on-street EVI throughout the city where other options are not possible.

11.1 Deliver EVI in Car Parks

To best deliver EVI in car parks, ECC should leverage its land and assets to deliver predominantly low-powered AC EVI across their car parks. These could serve as either AC charging locations, charging hubs including rapids, or multi-modal hubs integrating other services such as micromobility. ECC's car parks have been prioritised in Table 7 (page 35), and this prioritisation should be delivered as follows:

- High priority by 2025
- Medium priority by 2026
- Low priority by 2028

In addition to this target, ECC should aim to deliver 200 sockets by 2030 with passive provision for beyond 2030.

Rapid charging should be delivered in strategically located 'charging hubs', with demand being consolidated from other local car parks. This should meet demand for residents, commuters, visitors and, where appropriate, local businesses and last mile deliveries in multimodal hubs. All installations should include consideration for leveraging renewable energy assets, or the installation of new assets including canopies and CCTV to ensure user safety.

11.2 Advocate for On-Street EVI Provision

As ECC is not the highways authority for the Exeter City area, delivering on-street EVI should be undertaken through an advocacy role. ECC should collaborate with DCC to deliver on-street EVI for areas not covered by car parks. This should be a mix of chargepoint types, opting for the most appropriate including pedestal chargepoints, pavement channels and lamppost charging.

ECC should conduct further analysis to understand on-street need and EVI numbers, and work with DCC to establish appropriate locations and technologies for on-street EVI in Exeter. Following this, ECC should set a strategic aim that every resident without off-street parking be within a 5–10 minute walk of a chargepoint. To deliver this, pavement cable channels have the potential to be a significant part of the solution, so ECC should work with DCC to design a policy for the deployment of pavement channels, including installation, maintenance responsibilities and appropriate locations.

11.3 Partner for Wider EVI Provision

ECC should work in partnership with local businesses and organisations to provide consistent and accessible charging infrastructure in destinations such as workplaces, supermarkets, and public institutions such as hospitals and universities. ECC should also advocate that the delivery of more commercially viable EVI such as Rapid and Ultra-Rapid units be supported by the private sector.

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To best deliver EVI through partnerships, ECC should identify and prioritise partnerships in areas of highest residential need, allowing for permit schemes where appropriate to ensure access to EVI be maintained both for residents as well as staff, visitors and customers. Six locations for potential partnerships are identified in section 7.5.2 (page 48).

ECC should carefully select locations for hubs by seeking local knowledge of the site to highlight any concerns before any work begins.

11.4 Prepare for Future EVI Deployments

ECC should prepare for future EVI need and plan for provision for lower demand areas and need beyond 2030. As part of this, ECC should begin serving lower areas of need from 2025 onwards. The council should aim to have comprehensive coverage across the city by 2035.

ECC should advocate for new and emerging on-street EVI solutions that can be delivered by DCC and should engage landlords and housing associations to advocate for EVI delivery for shared private parking.

The council should monitor utilisation and EV uptake trends to inform future provision plans and work with local stakeholders to develop solutions to install appropriately in the future. Within this, the council must also prepare for the replacement of charging units after 8-15 years.

11.5 Prepare for Implementation

External Operator is the likely preferred commercial model as it best aligns with ECC's aims. This would allow ECC to retain control over the network and generate revenue to cover network costs and reinvest in net-zero projects. Given these characteristics, a Joint Venture could also be considered.

Considering this commercial model, ECC will need to secure additional funding to cover the capital costs. This should be sought through borrowing, asset financing or private investment, though due to the limited scale of installations in Exeter, it may be necessary to partner with neighbouring authorities or stakeholders to justify investment. LEVI funding should also be sought to accelerate and scale the delivery of EVI.

Considering the potential for partnerships with neighbouring authorities, regional collaboration with DCC where appropriate should be considered. This includes collaborating for resourcing bids into LEVI capability funding, and reallocating staff to leverage existing desirable skills, as well as identifying skills gaps. ECC should establish the structural mechanism to deliver EVI, and ensure that any procured hardware is interoperable, supporting OCPP v1.6 at minimum and compatible with existing EVI and prospective operators.

To procure EVI, ECC should engage the market to understand their offering in comparison to the council's needs. Existing frameworks such as DPS and CCS should be evaluated, and if not suitable, a tender should be developed and awarded based on evaluation criteria defined by ECC.

11.6 Summary

Exeter wishes to support the growth of EVs and to deliver net-zero by ensuring all car and van drivers are confident they can equitably access EV infrastructure. ECC is a key actor in this transition to a zero-carbon future as they can invest for the long-term and have a mandate to make society fairer and greener as well as setting out bold and holistic visions for the future and directly implement them. ECC has the opportunity to deliver on their ambitious mission to improve air quality and pollution, while also delivering fair and equitable charging for residents and visitors alike. Following the approach outlined in this report will enable ECC to deliver consistent, accessible, and innovative EV infrastructure in their car parks, while advocating for integrated, comprehensive coverage across the city.

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APPENDIX

1 APPENDIX

12 Appendix A – Modelling Assumptions

Vehicle Parc Projection

Uptake Scenarios

The EV uptake scenarios define the proportion of new vehicle sales each year which are plug in vehicles (PiV). Three scenarios are represented and show a slow, medium, or fast transition of the market to electric vehicles (EV).

The DfT datafiles VEH1153 (first time licensed vehicles by body and fuel type) and VEH0181 (first time registered PiVs by body and fuel type) are used for historical first-time licensing data[38]. Target points are then added to allow a curve to be projected from the historic data to the target. The target points are taken from two policy positions. The first being in the Road to Zero Strategy[39] released in 2018 and the second is in The Ten Point Plan for a Green Industrial Revolution[40] (2020) which is referenced in the 2021 Net Zero Strategy: Build Back Greener[41]. The scenarios and the target points that are used in each are outlined below:

- **Slow**: Road to Zero (High Scenario) – 70% of new car and LGV vehicle sales are PiV by 2030
- **Medium**: ZEV mandate – 100% of new car and LGV sales are PiV by 2030
- **Fast**: 2027 – 100% of sales are PiV by 2027, this is a hypothetical scenario designed to demonstrate what could happen if the uptake of PiVs continues to accelerate.

To join historic and target data points, a cubic polynomial curve is used for the fast, a spline for the medium and a logarithmic curve for the slow transition scenarios. Currently, these values are only calculated nationally. Similar methodology is used to project the proportion of plug-in vehicles that are BEV or PHEV.

Vehicle parc baseline

The number of vehicles currently registered in each LA is determined using DfT datasets VEH0105 (licensed vehicles at end of quarter by body type, fuel type and keepership) which divides the total parc into *Petrol, Diesel*, and *Other*. VEH0142 (licensed PiVs at end of quarter by body type, fuel type and keepership) is used to determine the number of PiVs and divides the PiV parc into *BEV*, *Plug in Hybrid* and *Range extended electric vehicle*

To form the groups used in the insight's toolkit, *Range extended electric vehicle* in VEH0142 is combined with *Plug in Hybrid* to form *Other PiV*. This is added to the *BEV* numbers and subtracted from *Other* in VEH0105 to leave *Other ICE*.

Projection

The total number of new vehicles is calculated as a percentage of the total parc using the historic uptake data. The average rate from 2015 to 2022 is 7% for cars and 8.8% for LGVs and is assumed to remain constant through the model.

For each year projected, the percentage of new vehicles is multiplied by the current parc size to get the total number of new vehicles to add. The distribution of the type of vehicles by country, region and LA is kept constant, as is the keepership ratio in each area. The total number of new vehicles is multiplied by these factors to get e.g., new privately owned cars in Ipswich this year.

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[38] GOV.uk, https://www.gov.uk/government/statistical-data-sets/vehicle-licensing-statistics-data-tables, Accessed 09/02/2023.

[39] GOV.uk, https://www.gov.uk/government/publications/reducing-emissions-from-road-transport-road-to-zero-strategy, Accessed 09/02/2023.

[40] GOV.uk, https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution, Accessed 09/02/2023.

[41] GOV.uk, https://www.gov.uk/government/publications/net-zero-strategy, Accessed 09/02/2023

These new vehicles are divided into PiV or ICE using the uptake scenarios and new PiVs are split into BEV and *Other PiV* as described in the Uptake Scenarios section. The new ICE vehicles are split into Petrol, Diesel and *Other ICE* using the average ratio in the new licensing data which remains constant through the model.

Vehicles are scrapped from the parc to obtain a target total parc size growth or shrinkage. The total number of scrapped cars is determined using SMMT vehicle parc size projections[42] and LGVs using a consistent projected growth in the LGV parc based on historic trends. This is then distributed by geographic area and keepership in the same way as the new vehicles. To determine the ratio of fuels that are scrapped, the ratio of fuel types from new licensing data 13 years ago (the median age of a car when scrapped) is used.

The new vehicles are added, and scrapped vehicles subtracted, from last year's parc of respective combination of body, geography, keepership, and fuel to determine the parc for the next year. If this result means the number of vehicles of a given body, keepership and fuel in an area is less than zero (i.e., not enough vehicles to scrap), the excess scrapped vehicles are shared amongst the other fuel categories in the area, again using the ratio of fuel types of new vehicles 13 years ago.

Required EVI

Required energy demand projection

The annual mileage per vehicle varies by year and vehicle type and is based on data from the National Travel Survey[43] (NTS). Concerning the projections from 2022, the mean of annual mileage from 2015 to 2021 is used and accounts for a slight drop in annual mileage. These figures will be updated as and when annual data becomes available.

The average daily mileage is multiplied by the driving efficiency for of the vehicle type[444546] and then accounts for a charging efficiency of 90%. This determines the charging energy requirement per vehicle per day. This is multiplied by the number of BEVs from the vehicle parc projections to determine the total energy requirement per day. Other PiVs are assumed to use the ICE for 68.2% of their mileage[47] and their remaining electric driving energy is added to the total energy requirement.

The proportional split of charging completed at home and on the public charging network is then accounted for. Roughly 68%[48] of all households in the UK have the option of private off-street parking and where this is the case, most will charge at home as it is the most convenient and likely cheapest option for them. However, even these drivers will likely use the public network at some point. This is most likely when completing high mileage trips. To account for this 6.31% of all charging requirement from these drivers is assumed to be completed on the public charging network. This is derived from the National Travel Survey data for 2019[49] and is the percentage of trips driven in a car or van that are than 25 miles. Therefore, the total requirement for public EVI is based on the total charging demand of the vehicle parc minus the demand from those with off-street parking plus 6.31% of the demand from those with off-street parking.

EVI Projections

The charging requirement of the vehicles is then divided across the EVI output powers (7kW, 22kW, 50kW and 150kW) that that vehicle is capable of utilising (i.e., EVI power output<vehicle accepted max rate of charge).

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[42] SMMT, SMMT new car market and parc outlook to 2035, by powertrain - SMMT, Accessed 09/02/2023
[43] GOV.uk, https://www.gov.uk/government/collections/national-travel-survey-statistics, Accessed 09/02/2023
[44] EV Database, https://ev-database.org/uk/, Accessed 09/02/2023
[45] Multiple vehicle manufacturers websites
[46] GOV.uk, Licenced vehicles by generic model, https://www.gov.uk/government/statistical-data-sets/vehicle-licensing-statistics-data-tables,
[47] The ICCT, https://theicct.org/publication/real-world-phev-use-jun22/, Accessed 09/02/2023
[48] Field Dynamics, On-Street Households: The Next EV Challenge and Opportunity, https://www.field-dynamics.co.uk/research/public-charger-catchment-research/ , Accessed 01/03/2022
[49] GOV.uk, NTS0308a, https://www.gov.uk/government/statistical-data-sets/nts03-modal-comparisons, accessed 21/02/2023, 2019 is used as the base year to avoid impacts on data quality from the coronavirus pandemic.

Different regional EVI approaches can result in different types of EVI being preferred in different regions. This can be a preference towards residential overnight charging or something more like a fuel station model with ultra-rapid charging being heavily relied upon. To allow for different approaches, three methods are available for selection within the service which determine the percentage energy demand that is met by EVI of a given power output. These are: residential (a preference towards 7kW charging near-home), hub-based (a preference towards ultra-rapid 150kW charging) and a blended approach.

The energy utilisation of EVI is estimated using real-world data (data from 2020-2022). The real-world data shows that current utilisation is low (as of data from 2022), likely due to EVI being rolled out ahead of demand and some vehicle being unable to accept higher rates of charge and therefore underutilizing the rate of charge available. However, the real-world data also highlights that utilisation is growing. The increase in utilisation is then projected forward with time representing the saturation of the vehicle parc with PiVs and increasing usage of publicly accessible EVI.

Energy utilisation is a ratio of the total potential energy delivery from a chargepoint and the energy that is delivered to EVs. This considers the time when a vehicle is plugged in and charging at a chargepoint, plugged in and not charging (PINC) time and when no vehicle is plugged into the chargepoint. Multiplying the energy utilisation by the charging power determines the energy that one chargepoint will deliver per day.

The total daily energy requirement of EVI of different power outputs is divided by the potential energy delivery of EVI of different power outputs. This results in the total number of publicly accessible chargepoints required to deliver the energy needed to charge EVs.

13 Appendix B – Residential Charging Index Methodology

Section 6.1.2 and 6.1.1 presents the likely location of need for residential charging. This Appendix outlines the full methodology and assumptions used in calculating the Residential Charging Index.

Input Data

Building on the early adopter mapping (see Section 6.1.1) factors and data are included in the analysis of the locations which are relatively more likely to require or benefit from public residential charging infrastructure. These are laid-out in in detail in Table 13.

All datasets used have been obtained from the UK Census 2011 and are valid down to the Output Area (OA) level. This means that findings can be mapped into zones with a mean population of 300 individuals.

Table 13: Factors considered within the residential charging index and the data sources used.

Factor	Dataset(s) used
Vehicle ownership	Vehicle ownership by household; Total population; and Datasets combined to determine vehicles per person as a relative indicator of vehicle ownership.
Vehicle usage	Method of commute, specifically number of people commuting either as a car driver or passenger; and Distance of commute.
Affluence	Number of households deprived on one or more dimension; and National Statistics Socio-economic Classification (NS-SEC), specifically the number of people falling within NS-SEC categories 1 to 4, representing more advantaged groups.
Off-street parking availability	Households by building type, specifically the number of detached and semi-detached houses (which have been considered to be more likely to have off-street parking).

Methodology

Each OA is scored relatively for each factor, on a scale of -100 to 100, based on how it ranks against other output areas. This means an OA with the median value will score zero, an OA with the most favourable value will score 100 and an OA with the least favourable value will score -100. The scores from each factor are weighted and added together to form a total which reflects the relative suitability of each OA for public residential charging infrastructure.

Therefore, a score of zero indicates an that the area is neither particularly suited nor unsuited to public residential charging infrastructure. A positive score shows that the area is more suited than average for public residential charging infrastructure and a negative score shows that the area is less suited than average for public residential charging infrastructure installation.

! **Note:** The relativistic nature of the scores mean that comparisons can be made between the OAs analysed in this report.

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Weighting

Acknowledging that certain factors listed in will have a stronger impact on the suitability of a geographical area for public residential charging, a weighting is used to enhance the validity of the results.

As no research has yet been conducted to determine the relativity of different factors impacting EV ownership, Cenex conducted an internal peer review exercise, drawing upon the expertise and experience of nine members of staff, with backgrounds in the transport sector, energy industry and local government. Each participant was asked to rank seven different demographic indicators in order of how important they believed those indicators were to identify areas where public residential charging was required. Once these rankings were collected, the scores for each indicator were added up to calculate a weighting value, proportional to how highly or lowly each factor was ranked. The results are shown in Table 14.

Table 14: Weightings attributed to factors in the residential charging index.

Indicator	Related Factor	Sum of Ranks (lower = higher priority)	Weighting
Method of commute	Vehicle usage	36	88%
Off-street parking availability	Off-street parking availability	11	290%
Annual earnings	Affluence	34	94%
Vehicle ownership rate	Vehicle ownership	23	139%
Daily mileage	Vehicle usage	38	84%
Deprivation	Affluence	37	86%
Population density	Off-street parking availability	44	72%

Given the assumptions and calculations outlined above, Section 6.1.2 shows the resulting Residential Charging Index for Exeter.

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14 Appendix C - Car Park Data Analysis

Car Park provision

Exeter City Council car park data was provided by ECC, including numbers of spaces, number of residential parking permits and ticket sales data. These ticket sales were summarised as percentages of the total ticket sales for a site, as shown in Figure 31. It can be seen that the majority of ticket sales are up to 2 hours, with up to 3-hour tickets and all-day tickets being the second and third most common ticket type purchased. The data that was input into the model had considerable limitations since it was based on ticket sales, and as such there is no data on vehicles which are parked outside of car park charging times. This means the charging in some car parks is more biased towards rapids than it otherwise would be if overnight parking were to be considered.

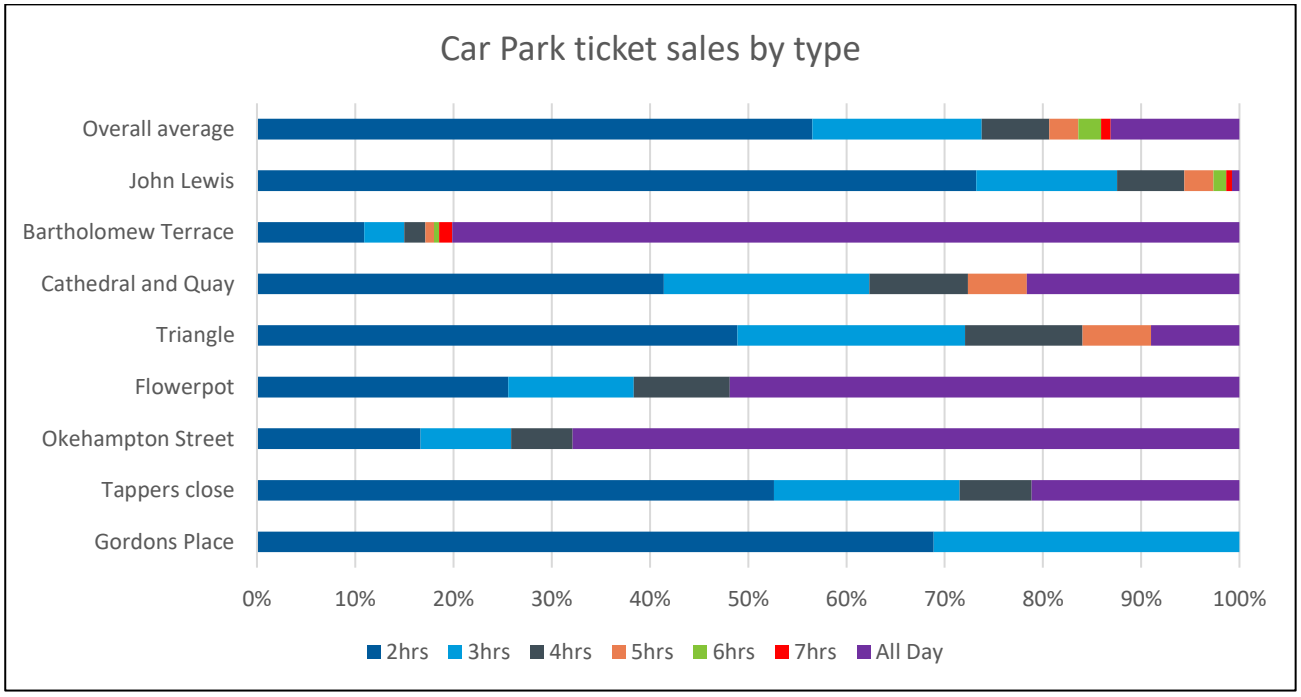

Figure 31: Percentage of ticket sales by length of ticket validity for a selection of Exeter City Council car parks

The monthly ticket sales data were utilised to estimate turnover for the car park, in vehicles per space per day, along with estimating dwell times for different types of charging. These were: below 2 hours – Rapid charging; 2-6 hours – fast charging; 6+ hours – standard charging. Where ticket sales information was not available, i.e., for car parks that are currently free, utilisation was assumed based on the highest long stay figures for other car parks in Exeter, as it was assumed that these car parks being free would make them likely to be mainly long stay.

These values were input into a model to estimate the number of daily users for chargepoints in each car park, from which the number of required chargepoint sockets and subsequently chargepoints could be estimated. The total number of daily users for chargepoints across 39 ECC-owned car parks was modelled to 2040, as shown in Table 15.

Table 15: Daily users by chargepoint type in Exeter car parks to 2040

Daily chargepoint users					
	2023	2025	2030	2035	2040
Standard	18	37	111	190	246
Fast	12	26	77	132	171
Rapid	26	56	167	286	371
Total	**56**	**118**	**355**	**609**	**788**

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The total number of users for each chargepoint type in each car park were then used to estimate the number of chargepoint sockets that would be required in each car park. As higher-power charging generally has a higher turnover, this means that fewer chargepoints are needed to support higher numbers of users each day, as can be observed in Table 16.

Table 16: Total number of chargepoint sockets required by chargepoint type in ECC-owned car parks.

Chargepoints required (sockets)					
	2023	2025	2030	2035	2040
Standard	41	48	90	136	172
Fast	39	45	70	99	123
Rapid	36	37	42	51	57
Total	**116**	**130**	**202**	**286**	**352**

These numbers are significantly lower than the projected need, at approximately 22% of the projected need in 2025, 13% of the projected need in 2030, and 9% of the projected need in 2040. This is because private car parks and on-street provision will also work towards meeting future need.

On a site-by site basis, the number of chargepoint sockets that are estimated to be required by 2030 are shown in Appendix D.

15 Appendix D - Modelling Outputs: Car Park EVI Numbers

- These are estimated projections, based on the input data.
- Standard and fast units can be interchangeable depending on the costs of the units, all cars can charge at 7.2kW, whereas only a few are able to charge at the faster rate of 11, or 22kW. The speed differences are negligible.
- These numbers do not account for the suggested strategic approach to deliver rapid units at charging hubs only. To account for this, remove rapid units at sites categorised as charging hubs.

Table 17 Raw output for projected number of sockets by car park

Site name	Standard	Fast	Rapid	Notes
Guildhall	2	5	4	Biased towards rapid charging due to low dwell time and provision of on-site solar
John Lewis	1	2	2	Biased towards rapid charging due to low dwell time and provision of on-site solar
Bampfylde Street	6	4	0	Standard charging focus due to proximity to John Lewis rapid charging hub
Bartholomew Terrace	9	1	1	Standard charging focus due to residential permits provided for car park
King William Street	1	1	1	Standard charging focus due to proximity to John Lewis rapid charging hub
Magdalen Road	5	4	1	Standard charging focus due to proximity to areas residential charging need
Matthews Hall	1	1	1	Standard charging focus due to proximity to area of residential need, main hub for Topsham
Princesshay 2	1	3	1	Standard/fast charging focus due to proximity to John Lewis rapid charging hub
Princesshay 3	2	3	2	Standard charging focus due to being underground
Smythen Street	1	2	1	Standard charging focus, not far from Cathedral & Quay
Belmont Road	2	2	0	Standard charging focus due to proximity to area of residential need
Bystock Terrace	1	1	1	Multimodal hub focus due to proximity to train station
Cathedral & Quay	4	4	1	Residential parking permits in this car park, focus on standard charging
Haven Banks 1	1	2	1	Focus on standard charging due to proximity to Haven Banks 2&3
Howell Road	3	4	1	Standard charging for nearby residents, consider multi-modal hub/rapid hub in future
Parr Street	1	1	1	Standard charging due to proximity to area of residential need, prioritise Belmont Road initially
Richmond Road	1	1	1	Car park near to Bystock Terrace, focus on standard charging to complement multi-modal hub
Topsham Quay	1	2	1	Not near areas of residential demand, consider mix of charging for Topsham visitors
Triangle Car Park	2	4	1	In area of demand, mentioned in ECC plans (approx. 60 bays)
Flowerpot Car Park	1	1	1	Standard charging due to proximity to area of residential need

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Haven Banks 2 & 3	1	1	1	May be sold as part of redevelopment, consider for rapid hub due to proximity to Haven Banks 1
Holman Way	2	2	1	Standard charging or mix, limited residential need nearby
Okehampton Street	3	1	1	Residential parking permits in this car park, near to flowerpot, potential to split or amalgamate capacity
Tappers Close	1	1	1	Mentioned in LEVI bid, limited residential need nearby
Gordons Place	1	1	1	Standard charging focus due to proximity to residential need, potential for stakeholder partnership rapid in Co-op car park opposite
Station Road (Exwick)	0	1	1	Mentioned in LEVI bid, limited residential need nearby, consider rapid charging for train station
Riverside Leisure Centre	2	1	1	On edge of area of residential demand, mix of charging for residents and leisure centre users
ISCA Arena	5	1	1	Not near areas of residential demand, consider mix of charging for users of facilities
Wonford Sports Centre	3	1	1	Standard charging due to high nearby residential demand, rapid possible for sports centre customers
Turf Approach	1	1	1	Outside of city, not within walking distance of residential need
Betty's Mead Playing Field	1	1	0	Standard charging due to high nearby residential demand
Cowick Barton Playing Field	1	1	1	On edge of area of residential demand, hospital within walking distance may use chargepoints
Duryard Park	1	1	1	Not near to areas of high residential need, next to country road heading out of city
Hamlin Lane Playing Field	1	1	1	Close to areas of high residential need, very few houses in need within 5 minutes' walk
King George V Playing Field	2	1	1	Near to strategic road leading to motorway, may be suitable for hub, but may face competition from Shell fuelling station nearby
Station Road Playing Field (Pinhoe)	1	1	1	Mentioned in LEVI bid, limited residential need nearby, consider mix of charging
Matford Park and Ride	15	2	2	High-capacity site, lots of standard charging needed, consider rapids for strategic roads nearby, consider last mile/commercial rapid hub
Pinhoe Station	1	1	1	Close to station road playing field Taxi rapid charging may be suitable, consider multi-modal hub for station
Total	**88**	**68**	**41**	

Table 18 Total number of projected sockets, accounting for strategic approach to only install rapid units at charging hub sites.

Car park Archetype	No. of Sockets		
	High	Medium	Low

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Socket Rating	Standard	Fast	Rapid	Total	Standard	Fast	Rapid	Total	Standard	Fast	Rapid	Total
AC Charging	25	14	0	39	12	12	0	22	15	13	0	34
Charging Hub	7	9	8	24	2	1	1	4	3	5	4	12
Multimodal Hub	21	11	5	37	0	0	0	0	2	2	2	6
Total	**53**	**34**	**13**	**100**	**14**	**13**	**1**	**26**	**20**	**2**	**6**	**52**

Table 19 Number of sockets listed by car park and priority.

Provision in all car parks

	Delivery Priority											
Car park Archetype	High				Medium				Low			
	Car park	Standard	Fast	Rapid	Car park	Standard	Fast	Rapid	Car park	Standard	Fast	Rapid
AC Charging	Bartholomew Terrace	9	1	0	Bampfylde Street Car Park	6	4	0	Princesshay 2 Car Park	1	3	0
	King William Street Car Park	1	1	0	Richmond Road Car Park	1	1	0	Smythen Street Car Park	1	2	0
	Magdalen Road Car Park	5	4	0	Princesshay 3 Car Park	2	3	0	Parr Street Car Park	1	1	0
	Cathedral & Quay Car Park	4	4	0	Belmont Road	2	2	0	Holman Way Car Park	2	2	0
	Flowerpot Car Park	1	1	0	Haven Banks 1 Car Park	1	2	0	ISCA Arena	5	1	0
	Okehampton Street Car Park	3	1	0					Cowick Barton Playing Field	1	1	0
	Gordons Place Car park	1	1	0					Hamlin Lane Playing Field	1	1	0
	Betty's Mead Playing Field	1	1	0					King George V Playing Field	2	1	0
									Tappers Close Car Park	1	1	0
Charging	Guildhall Car Park	2	5	4	Riverside Leisure Centre	2	1	1	Topsham Quay Car Park	1	2	1
	John Lewis Car Park	1	2	2					Haven Banks 2 & 3 Car parks	1	1	1
	Matthews Hall Car Park	1	1	1					Station Road (Exwick) Car park	0	1	1
	Wonford Sports Centre	3	1	1					Duryard Park	1	1	1
Multimoda	Bystock Terrace Car Park	1	1	1					Station Road Playing Field (Pinhoe)	1	1	1
	Howell Road Car Park	3	4	1					Pinhoe Station	1	1	1
	Triangle Car Park	2	4	1								
	Matford Park and Ride	15	2	2								
Total		53	34	13		14	13	1		20	20	6

Note: this table has been delivered in the supporting package in excel format.

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16 Appendix E - Consumer Experience Regulations for Public EV Charging Infrastructure Summary

On the 31st of March 2023, the UK Government published their final policy position on the EV charging consumer experience regulations[50]. The date for implementation is still unknown.

Key points
Immediately after legislation is passed:

- All pricing for public EV charging must be displayed clearly before a charging session takes place.
- Pricing must be displayed in pence per kilowatt hour (p/kWh).
- The price cannot *increase* after a charge session has begun.

12 months after legislation is passed:

- Contactless payment required for all new chargepoints over 8 kW, and to be retrofitted to all chargepoints over 50 kW.
- Chargepoint operators must adopt Open Charge Point Interface (OCPI).
- Chargepoint operators must publish static and dynamic data by default – delivery method TBC.
- Public chargepoint network operators must have a 24/7 helpline.
- Chargepoint network operators must achieve 99% uptime across the 50+ kW chargepoints that they operate.

24 months after legislation passed:

- Government will review extending 99% reliability requirements to all chargepoints for each chargepoint network operator (i.e., they will only regulate for <50 kW chargepoints if they feel they need to).
- Chargepoint operators must offer payment roaming - exact requirements TBC.

[50] Consumer Experience at Public Chargepoints (publishing.service.gov.uk) Accessed 03/04/23

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17 Appendix F: Concession Heads of Terms

See NEVIS: LEVI Heads of Terms (cenex.co.uk) and issued as a supporting document.

18 Figures

19 Tables

20 Abbreviations

AC	Alternating Current
BEV	Battery Electric Vehicle
CCS	Crown Commercial Services
CCTV	Closed Circuit Television
CO_2e	Carbon dioxide equivalent
CNG	Compressed Natural Gas
CPO	Chargepoint Operator
DC	Direct Current
DCC	Devon County Council
DfT	Department for Transport
DNO	Distribution Network Operator
DPS	Dynamic Purchasing System
ECC	Exeter City Council
EO	External Operator
EOI	Expression of Interest
EV	Electric Vehicle
EVCP	Electric Vehicle ChargePoint
EVI	Electric Vehicle Infrastructure
GHG	Greenhouse Gas
HGV	Heavy Goods Vehicles
ICE	Internal Combustion Engine
JV	Joint Venture
kW	Kilowatt
kWh	Kilowatt-hours
LA	Local Authority
LEVI	Local Electric Vehicle Infrastructure (fund)
LGV	Light Goods Vehicle
LPG	Liquid Propane Gas
NEVIS	National Electric Vehicle Insight and Strategy
NGED	National Grid Electricity Distribution
NO_x	Oxides of Nitrogen
OA	Output Area
OCPP	Open ChargePoint Protocol
ORCS	On-street Residential Charging Scheme
PHEV	Plug-in Hybrid Electric Vehicle

PiV	Plug-in Vehicle
PM	Particulate Matter
PPCP	Public Private Commercial partnership
PV	Photovoltaic
RCI	Residential Charging Index
UK	United Kingdom
ULEV	Ultra Low Emission Vehicle
ZEV	Zero Emission Vehicle

About Cenex

Cenex was established as the UK's Centre of Excellence for Low Carbon and Fuel Cell technologies in 2005.

Today, Cenex focuses on low emission transport & associated energy infrastructure and operates as an independent, not-for-profit research technology organisation (RTO) and consultancy, specialising in the project delivery, innovation support and market development.

We also organise Cenex-LCV, the UK's premier low carbon vehicle event, to showcase the latest technology and innovation in the industry.

Our independence ensures impartial, trustworthy advice, and, as a not-for-profit, we are driven by the outcomes that are right for you, your industry, and your environment, not by the work which pays the most or favours one technology.

Finally, as trusted advisors with expert knowledge, we are the go-to source of guidance and support for public and private sector organisations along their transition to a zero-carbon future and will always provide you with the insights and solutions that reduce pollution, increase efficiency and lower costs.

To find out more about us and the work that we do, visit our website:

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Councillors' Information Bulletin: 7 April 2025

Title of Update: RAMM Highlights Report 2024-25 (Q4)

Relevant Officers: Helen Hartstein, Audience Development Manager

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1. What is the update about?

This is the quarterly highlights report for the Royal Albert Memorial Museum & Art Gallery, showing museum activity for the period January to March 2025.

2. Background

The quarterly highlights report, along with other reports showing activity against targets, is taken to RAMM's Oversight Panel and reported to Arts Council England as part of its National Portfolio Organisation funding agreement. The oversight panel consists of six councillors and two external representatives.

3. Current position

Activity plan

Visitor Experience (Activity 1)

- All-RAMM relaxed sessions started; these were limited in number and though we saw a small uptake in these pilot sessions, the feedback was very positive. Running both a morning and afternoon session, proved popular with those who attended. RAMM intends to run more all-museum relaxed sessions in future.
- The RAMM cafe reopened in the February school half term holidays. It is operating on limited opening hours to begin with. We have seen dwell times of visitors increase anecdotally across both the cafe space and the museum as a whole. The offer is reasonably varied and has received positive feedback from RAMM people and visitors alike.

- RAMM shortlisted for Museums + Heritage Accessibility Award. Entry is based on RAMM's cross-teams Accessibility Champions group, which is guiding institutional transformation. RAMM's inclusivity ethos seeks to ensure access to overcome obstacles ranging from mobility and physical disabilities to neurodiversity and anxiety.

Exhibitions and Events (Activity 2)

- 'Dartmoor: A Radical Landscape' closed on 23 February. The exhibition received high levels of positive visitor feedback and ticket sales were high (6619). The exhibition was the focus for a I&I report and a full internal debrief was carried out on 1 April.

- RAMM's major new exhibition opened on 22 March. 'FOOD: beyond the plate' delves into the stories behind food by drawing on the museum's wide-ranging collections to explore the sometimes-controversial histories of hunting, fishing, farming and international trade.

- Two co-curated displays opened in January. In Viewpoint, 'Devon in the 1920s' shows costume and ephemera from the decade, chosen and interpreted by RAMM's Future Skills participants. The 'What Do You Collect?' case features Mingei pottery selected by its owner for display at RAMM.

- February Half Term saw 160 children taking part in World Cultures mask making. A further 100 children made rainsticks on the Wednesday. On the Thursday, 283 children and their families embarked on a time travelling adventure with Tilka, the prehistoric puppet. Guided by performers from MED Theatre, Tilka led the audience on a wonderous adventure thousands of years into the past, then jumped 200 years into our future, to see how in very little time, the wind-swept moor may become a dry wasteland, taken over by industrialised farming and ravaged by climate change.

- RAMM ran a creative activity throughout the month of February for LGBTQ+ month. Local artist Scotty Gillespie created an engaging activity that invited people of all ages to explore the museum's remarkable collections and discover connections to their own identity. Through this fun activity book, they had the opportunity to create their own unique character, drawing inspiration from the treasures found within the museum.

- Artist Garry Fabien-Miller hosted an in-conversation lunchtime event for 30 people talking about his work which featured in the Dartmoor exhibition. This talk was filmed and offered on sale for those that couldn't attend to watch the event afterwards.

- An adults-only Playtime Revival event in March welcomed 100 adults to engage in play – taking them back to their childhoods – with circus skills, hula hooping, a bouncy castle, mask making and more. This attracted a younger audience than usual.

Digital (Activity 3)

- Availability of RAMM's Bloomberg Connects content was announced publicly on the 21 January. In Q4 there have been 256 guide starts from 176 different users. This works out as an average of 2.5 users per day and 3.7 guide starts per day. The guide has also been read in 6 different languages, including Chinese and Catalan.

- RAMM continues to develop its online sales offer. Digital Passes have been added to Spektrix so people can use their Apple Wallet or Google Wallet to store tickets. This is more convenient for visitors.

- For the Dartmoor exhibition RAMM experimented with the use of a QR code for ticket sales. At the moment we have insufficient data to contextualise its effectiveness but we consider it worth continuing in future paid-for exhibitions.

Contemporary Art (Activity 4)

- The new acquisitions by Céline Condorelli continued to be shown through Q4. Condorelli was the National Gallery's Artist-in-Residence in 2023, a partnership between the National Gallery and RAMM which provided the artist an opportunity to respond to one of the great collections of paintings in the Western European tradition, as well as RAMM's rich collections. RAMM subsequently acquired two works courtesy of the Contemporary Art Society.

- RAMM's commissions by artist Alex Hartley and filmmaker Ashish Ghadiali inspired by RAMM's collections were shown through Q4 in the exhibition Dartmoor: A Radical Landscape.

- RAMM is working with artists Charmaine Watkiss and Sarah Gillespie to deliver the 2025-26 commissions and has launched two new opportunities for the following year for an exhibition on fungi.

Children and Young people (Activity 5)

- The pilot World Cultures schools project saw 160 KS2 school children from two primary schools visit RAMM in January for an activity day to learn about mask making cultures around the world. Both are in rural locations where under half of pupils had not had the opportunity to visit a museum before and may have limited access to arts and culture outside of school. Ruth Webb, a local designer-maker specialising in costume and prop-making, was commissioned to design and lead four days of mask making workshops in their school settings, inspired by RAMM's World Cultures collections. RAMM also piloted a new world cultures themed object handling activity called 'Around the world in 9 objects' to introduce pupils to different cultures and ways of living through nine mystery objects.

- RAMM's home education programme continues to be popular. Workshops on spoon carving, metal casting, Romans in Devon, Ancient Egypt and World War 2 attracted families from all over Devon from ages 4 to 16.

- Exeter College tutors brought students to visit the Dartmoor: A Radical Landscape exhibition to inspire creative work as part of their coursework. This year's second

year A level videography students produced a short film reel inspired by the exhibition that was projected in the museum courtyard for two weeks in January.

Individual Creativity (Activity 6)

- The Museum Meet-Up wellbeing activity for over 50s provided a relaxed tour of the Dartmoor exhibition, an opportunity to try stop-motion animation related to archaeology, and a curator-conservator tour of new food exhibition Beyond the Plate. The monthly group now consistently attracts 12-20 people per session and has become a welcoming cultural space for adults overcoming anxiety, depression and isolation.
- RAMM responded to visit requests from Groundwork SouthWest to bring two groups of asylum-seekers into the museum. The group experienced bonding across languages and an enjoyable day out.
- RAMM's dementia-friendly programme visited Franklyn Hospital older people's mental health wards and the museum delivered age-friendly sessions for Shilhay older people in ECC social housing.

Skills Development (Activity 7)

- The Future Skills programme is working with 17 young people over 12 sessions throughout the year. We deliver sessions that give a rounded picture of how a museum operates from a range of different departments and experts.
- The Future Skills team are currently working on 2 sessions delivered by Francesca Farmer who is working directly on the GLAM E-Lab project. The first session was on copyright, clearing copyright, open access, image and metadata management. She showed the cohort how to clear copyright in practice in the session. The second session will be focused on uploading works to Wikipedia and editing Wikipedia articles. The sessions are based on a toolkit developed by Francesca and colleagues at the University of Exeter to show the work they are doing on building open access program within the museum, library, and archive sector.

Dynamic Collections (Activity 8)

- Work is ongoing on South West Collections Explorer (SWCE) website. The site is undergoing a re-build with fresh interpretation using the new opportunities offered by the Museum Data Service. This work is part of the essential changes needed to the documentation infrastructure prior to the creation of a Digital Asset Management System (DAMS).
- Participants from Hikmat attended a celebration event to mark the end of the first community project and to collect the artwork that they had made. We received excellent feedback from them about their positive experience of the project.
- The outputs from the first community project have been compiled and are presented on a collections story project page. This includes information about the project,

photos, 3D scans of artwork, quotes from participants, blog posts from project interns.

- A panel about the project is on display as part of the Food: Beyond the Plate exhibition
- Simon Lee Dicker's artwork from the project is on display in the Food: Beyond the Plate exhibition.
- All creative outputs and comments from the first community project have been logged as digital assets ready to populate new DAMS.

Community engagement and university collaboration (Creative Arc) (Activity 9)

- The Tastes Like Home project on the theme of food concluded. Over the project, RAMM held craft activity and a pop-up exhibition of community objects in St Thomas Library, provided Instagram training for social conscious foodies, connected with community partner LOVE Food CIC. There was a celebratory visit to RAMM from participants with heritage in many parts of the world, St Thomas neighbourhood families, and older people from ECC housing in Grandisson Court, Countess Wear (who brought their own kitchen objects to share).
- A new exhibition by local artist Hannah Mumby opened in the café. It incorporates dozens of conversations with Exeter residents – from Afghanistan and Cornwall to Egypt, Hong Kong, Italy and Lithuania – into a series of wall panels that explore memories and customs around food. Every object comes from a quote, and words waft around it like smells and sounds of cooking.
- Collaboration with Exeter University on Food has resulted in a digital map of food action and research around the city, available in the exhibition, uplifting for local pride and optimism about future sustainability.

Investment principles plan

Ambition & Quality

- RAMM's Data and Insight Officer has spent time with teams from The Box and Libraries Unlimited to share knowledge about dashboard reporting and using the Impact & Insight (I&I) evaluation toolkit.
- The I&I report on Dartmoor: A Radical Landscape showed that the creative intentions were resoundingly achieved with scores for all six dimensions selected between 76 and 85. This was based on 95 public responses, the largest number used for sampling on a RAMM exhibition so far, meaning a low margin of error (4%). Local Impact was the highest scoring dimension (85). 79% of those surveyed reported making a special trip to RAMM to visit the exhibition.
- RAMM's programming themes and their possible revision was the subject of all-staff workshops on 19 and 26 March. Originally planned to feed into the 2027-30 NPO application, the results will now be adopted to shape RAMM content from 2026-27 onwards.

Inclusivity & Relevance

- Training on inclusive recruitment was carried out for RAMM managers and also extended to ECC HR team and other managers in the culture and leisure team
- RAMM hosted a visit from the North Devon National Trust team who wanted to learn about the museum's accessibility and engagement ethos and practice.

Environmental Responsibility

- Progress on programming RAMM's Building Management System (BMS) has continued in earnest, resulting in the Air Handling Units (AHUs) running at a much-reduced rate to achieve the same required environmental conditions. Of note is reduction in operation of the AHU Chiller unit, previously running at 10-30KW per hour 24/7 – this now operates at no more than 7KW per hour and only at times when required. Operation times have been cut in half to further accrue savings and slash energy consumption.
- RAMM has continued to rollout replacement of all halogen bulbs with energy-efficient LEDs; all temporary galleries and most other public & non-public areas have been changed as required. The Courtyard and lift lobby (first floor) have been changed over within this quarter.

Dynamism

- A new income monitoring dashboard has been launched, showing progress against targets for RAMM's commercial income generating activities (shop, venue hire, exhibition and events tickets, schools etc.)
- RAMM advised East Devon County Council on engagement practices to inform their upcoming HLF bid, which will include a community programme inspired by RAMMs Dartmoor Frame of Mind project.
- RAMM presented at the international Museums Health and Wellbeing Summit in January about the Dartmoor Frame of Mind project to 1,200 delegates from 35 different countries. The project profiled on Museum Next's website as a case study.

4. Future position

n/a

5. Are there any other options?

n/a

6. Conclusion

RAMM continues to deliver a varied, inclusive and ambitious programme of activities to its audiences in the city and further afield. It is performing well against its targets and KPIs