

Infrastructure and Development Select Committee

Date: **15 September 2021**
Time: **10am**
Venue: **Council Chamber, County Hall, Norwich**

Persons attending the meeting are requested to turn off mobile phones.

Membership:

Cllr Barry Stone (Chair)
Cllr James Bensly (Vice-Chair)

Cllr Steffan Aquarone (Spokes)	Cllr Chrissie Rumsby
Cllr David Bills	Cllr Robert Savage
Cllr Claire Bowes	Cllr Vic Thomson
Cllr Chris Dawson	Cllr Colleen Walker (Spokes)
Cllr Jim Moriarty (Spokes)	Cllr Tony White
Cllr William Richmond	

**For further details and general enquiries about this Agenda please contact the
Committee Services Officer, Nicola Ledain:
email committees@norfolk.gov.uk**

Under the Council's protocol on the use of media equipment at meetings held in public, this meeting may be filmed, recorded or photographed. Anyone who wishes to do so must inform the Chairman and ensure that it is done in a manner clearly visible to anyone present. The wishes of any individual not to be recorded or filmed must be appropriately respected.

Advice for members of the public:

This meeting will be held in public and in person.

It will be live streamed on YouTube and, in view of Covid-19 guidelines, we would encourage members of the public to watch remotely by clicking on the following link:

<https://youtu.be/6smLjQ-5hoc>

However, if you wish to attend in person it would be most helpful if, on this occasion, you could indicate in advance that it is your intention to do so. This can be done by emailing committees@norfolk.gov.uk where we will ask you to provide your name, address and details of how we can contact you (in the event of a Covid-19 outbreak). Please note that public seating will be limited.

Councillors and Officers attending the meeting will be taking a lateral flow test in advance. They will also be required to wear face masks when they are moving around the room but may remove them once seated. We would like to request that anyone attending the meeting does the same to help make the event safe for all those attending. Information about symptom-free testing is available [here](#).

A g e n d a

1 To receive apologies and details of any substitute members attending

2 Minutes

To confirm the minutes of the meeting held on 14 July 2021.

Page **5**

3 Members to Declare any Interests

If you have a **Disclosable Pecuniary Interest** in a matter to be considered at the meeting and that interest is on your Register of Interests you must not speak or vote on the matter.

If you have a **Disclosable Pecuniary Interest** in a matter to be considered at the meeting and that interest is not on your Register of Interests you must declare that interest at the meeting and not speak or vote on the matter

In either case you may remain in the room where the meeting is taking place. If you consider that it would be inappropriate in the circumstances to remain in the room, you may leave the room while the matter is dealt with.

If you do not have a Disclosable Pecuniary Interest you may nevertheless have an **Other Interest** in a matter to be discussed if it affects, to a greater extent than others in your division

- Your wellbeing or financial position, or
- that of your family or close friends
- Any body -
 - Exercising functions of a public nature.
 - Directed to charitable purposes; or
 - One of whose principal purposes includes the influence of public opinion or policy (including any political party or trade union);

Of which you are in a position of general control or management.

If that is the case then you must declare such an interest but can speak and vote on the matter.

4 To receive any items of business which the Chairman decides should be considered as a matter of urgency

5 Public Question Time

Fifteen minutes for questions from members of the public of which due notice has been given. Please note that all questions must be received by the Committee Team (committees@norfolk.gov.uk) by **5pm Friday 10 September 2021**. For guidance on submitting a public question please visit www.norfolk.gov.uk/what-we-do-and-how-we-work/councillors-meetingsdecisions-and-elections/committees-agendas-and-recent-decisions/ask-aquestion-to-a-committee

6 Local Member Issues/Questions

Fifteen minutes for local member to raise issues of concern of which due notice has been given. Please note that all questions must be received by the Committee Team (committees@norfolk.gov.uk) by **5pm Friday 10 September 2021**.

7 Electric Vehicle Strategy

Report by the Executive Director of Community and Environmental Services

Page **23**

8 Transport for Norwich Strategy Consultation

Report by the Executive Director of Community and Environmental Services.

Page **154**

9 Performance of Key Highway Contracts

Report by the Executive Director of Community and Environmental Services.

Page **292**

10 Highway and Transport Network Programme

Report by the Executive Director of Community and Environmental Services.

Page **319**

11 Forward Work Programme

Report by the Executive Director of Community and Environmental Services

Page **338**

Group Meetings:

Conservative	9:00am
Labour	9:00am
Liberal Democrats	9:00am

Tom McCabe
Head of Paid Service
Norfolk County Council
County Hall
Martineau Lane
Norwich
NR1 2DH

Date Agenda Published: Tuesday 7 September 2021



If you need this document in large print, audio, Braille, alternative format or in a different language please contact 0344 800 8020 or (textphone) 18001 0344 800 8020 and we will do our best to help.

- 1.2.3** In order to fulfil obligations around decarbonisation, investment was necessary and this expenditure fell within the Community and Environmental Services budget. It would need to be itemised, and this process was being carried out.
- 1.2.4** Officers confirmed that general passenger figures were currently at 65-70% of pre Covid and Park & Ride passenger figures were lower at around 30-35% of pre Covid levels. The cost of bus subsidies was approximately £2.9 million.
- 1.2.5** Cllr Jamieson confirmed that the £1.5million which had been allocated for flooding would remain in the budget. Officers explained to Committee that the enhanced gully cleaning and drainage works were ongoing and there had been a considerable amount of repairs already completed from the December 2020 flooding event.
- 1.2.6** A report would be brought to Cabinet in September 2021 regarding the £10million capital funding for potholes.
- 1.2.7** The Director for Property could inform Members what property estates were in their divisions.
- 1.2.8** The Director of Highways and Waste confirmed that the new government strategy called Bus Back Better may consider reinstating previously held bus subsidies, and that a funding bid was currently being developed by the Council. There was concern from Members that more and more bus services were being reduced and people were unable to use their bus passes.
- 1.3** The Committee **RESOLVED** to;
1. Consider the Budget and Medium Term Financial Strategy position as reported to Cabinet (Appendix 1), which forms the context for 2022-23 budget setting.
 2. Consider and comment on the overall service strategies as set out within this report.
 3. Consider and comment on the key issues for 2022-23 budget setting and the broad areas the Select Committee would recommend for savings development as they pertain to the services within the Select Committee's remit, in order to provide input to the 2022-23 budget process and inform the saving proposals put forward to Cabinet later in the year.

2. Apologies and substitutions

- 1.1 Apologies were received from Cllr Claire Bowes, Cllr Chrissie Rumsby (sub'd by Emma Corlett)

3. Minutes

- 3.1 The minutes of the meeting held on 28 January 2021 were agreed as a correct record.

4. Declarations of Interest

- 4.1 There were no interests declared.

5. Items of Urgent Business

5.1 There were no items of urgent business.

6. Public Question Time

6.1 There was one public question received and the response is given at Appendix A.

7. Local Member Issues / Questions

7.1 The list of Local Member questions/issues is attached at Appendix A.

8. Greenways to Greenspaces: Green Travel and Green Networks along Highway Corridors

8.1 The Committee received the annexed report (8) outlined how NCC was looking to expand the provision of off-road cycling and walking trails across Norfolk, in line with its adopted Environmental Policy to help tackle climate change and help people adopt healthier more active and sustainable lifestyles.

8.2 During discussion, the following points were noted:

8.2.1 Roadside cutting in rural areas needed attention. As there were limited paths, and mostly C and Unclassified roads, it was important to ensure that the roadsides were maintained for road safety. Officers explained that part of the cutting proposals implemented in the current year ensured safety at junctions by cutting visibility splays. There would always be competing priorities such as the timing of the cuts. The best time to cut from an environment point of view would be October, whereas for road safety reasons mid-July would be better.

8.2.2 Ragwort could cost landowners a significant amount of money if it gets entwined into the hay for horses and livestock. A metre cut back would not affect the pollinators which were needed for the environment aspect and Ragwort was an effective pollinator. The Director for Highways and Waste would pass the concern onto the Highway Engineer for the area. The Chair suggested encouraging Parish Council's to become more involved, however Members highlighted that many may not be keen.

8.2.3 Members were pleased to see the recommendations from the Environmental Member Oversight Group coming forward and also that Norwich and King's Lynn were receiving funding for their walking routes. However, one of the biggest needs, from conversations with constituents, was for circular routes for the rural villages. Many routes that did exist were reliant upon use of closed permissive paths or other restricted access routes and this issue needed some attention. Officers reported that there seemed to be some suggestion that issues like this could be highlighted soon through various new initiatives from central government through funding from Defra.

8.2.4 The relationship with parish councils was important in order to try and help educate and encourage residents that everyone could do something to help climate change. The idea of having an award scheme or similar was suggested and the Head of Environment would talk further with interested Members.

8.2.5 With reference to page 42 regarding pesticides. Members asked if more emphasis could be placed upon the council's policy about using pesticides, and other chemicals. It would be useful if Members received briefings on what currently exists within the policy or what was planned as it was a question that was received quite often from constituents and members felt they had limited knowledge to pass on.

8.2.6 It was important to recognise that as the city divisions did not have parishes, they should be treated differently. Members from city wards asked if they could be actively engaged regarding verge cutting as previous years had been significantly problematic and they received limited information to pass on.

8.3 The Committee **RESOLVED**

1. To review and comment on the following proposals prior to consideration by Cabinet:-

- The Norfolk Pollinator Plan (as set out in Appendix 3) which identifies the key role that a thriving network of verges plays for Norfolk insect species (including pollinators for agriculture)
- The Active Travel Programme for 2021/22 (as set out in Appendix 4) aimed to encourage behaviour change leading to increased take-up of walking and cycling
- The expansion of the Norfolk Roadside Nature Reserves (RNR) scheme to 300 reserves by 2024 to improve habitat connectivity of the verges network and other benefits (as set out in Appendix 5)
- The Local Cycling and Walking Investment Plans (LCWIPs) for Great Yarmouth and King's Lynn (as set out in Appendix 6) and Norwich (as set out in Appendix 7)

2. To note the following additional activity already planned or underway:-

- A refreshed Cycling and Walking Strategy 2021-2030 for Norfolk is in development
- A new highways Verge Management Policy will be developed which will include information for parish and town councils wishing to take on responsibility for verge cutting in their local area.
- Work on a 3-year nature recovery demonstrator pilot project for roadside verges with Suffolk County Council to inform development of a monitoring mechanism for habitat connectivity for the emerging Norfolk and Suffolk 25 Year Environment Plan

9. Local Transport Plan

9.1 The Select Committee received the annexed report (9) which set out the statutory document required by the Local Transport Act 2000. The plan set out the county council's approach to transport, including development and delivery of scheme as part of the council's capital programme.

9.2 The following points were noted in response to questions from the Committee:

9.2.1 The plan had been updated and refreshed to take into account the impact on carbon as well as other factors and challenges such as recovery from the pandemic. It was about balancing the sociological, economic and environmental factors. It is known in

Norfolk that some of the infrastructure is in need of updating but the change of this plan was that carbon reduction was at the heart of it. The Cabinet Member for Highways, Infrastructure and Transport confirmed that there was a priority list of infrastructure projects such as Northern Western Link and the 3rd river crossing which all help the economy and it was inevitably about balancing needs.

- 9.2.2 On carbon reduction, the carbon impact of major projects are assessed during design of the project in both the construction and the future use of the project. It might not be appropriate to do this for all different types and sizes of project: The point of the usage was taken on board and a proportionate approach was used dependent on the project.
- 9.2.3 The behavioural change would be a huge ask of people and it was feared that some Covid-19 messages could stick such as not using public transport which would present a problem. A range of discussions were being held with transport operators who were working hard to counter these messages. Work was needed to carry on throughout the industry to help this. Behaviour change was definitely something that needed to be pushed as people needed to understand why it was important and needed to be engaged as part of the process. The model that would be used would be developed as the initiative went on.
- 9.2.4 The maintenance policy that covered potholes would hopefully give some reassurance that routes that were encouraged to use would be maintained and looked after.
- 9.2.5 On public transport, it is important that all partners, from big operators to smaller parts such as community car schemes were involved as they all had a part to play. As part of the 'Bus Back Better' initiative, an improvement plan would be compiled which would cover all partners.
- 9.2.6 After a proposal by Cllr E Corlett, and seconded by Cllr S Aquarone, the Committee AGREED to set up a Member task and finish group to consider public transport elements of the local transport plan implementation plan. The membership and terms of reference would be brought to the next meeting after consultation with groups.
- 9.3 The Select Committee **RESOLVED** to
1. Provide views on the Local Transport Plan, included as Appendix A of the report, that Committee wishes to be considered by Cabinet prior to its adoption
 2. Confirm that the LTP Implementation Plan be brought directly to Select Committee for comment prior to adoption by Cabinet
 3. Agree on how Select Committee wants ongoing reporting of Local Transport Plan delivery.

10 Apprenticeship Strategy and Action Plan

- 10.1 The Select Committee received the annexed report (10) which set out a strategic vision, aims and objectives and an operational action plan for apprenticeships in Norfolk across all relevant areas of NCC, cohesively bringing together the three strategic strands identified by the Local Government Association (LGA) review; Children's Services, Growth and Development and Human Resources.
- 10.2 The following points were noted in response to questions from the Committee:

- 10.2.1 There were currently 3080 Norfolk apprentices with NCC employing 382.
- 10.2.2 Although Members were regarded as corporate parents for looked after children (LAC) and had a duty to keep track, the data surrounding them was sometimes unknown as they did not have to disclose when applying for apprenticeships or employment that they were a looked after child. There was, however strategies being developed to promote apprenticeship participation amongst those with Special Educational Needs and Disabilities (SEND) and LAC. This work was taking place across the directorates and with leaving care staff. The number of those with SEND in apprenticeships would be circulated to Members.
- 10.2.3 'System leaders' on page 339 of the report referred to Headteachers and Principals. Officers explained that all school and sixth forms all have different set ups to offer career advice but there was now a 'Pathway to Working' where Officers were working alongside educational establishments to promote various career pathways. The Committee asked for more information regarding this in future reports.
- 10.2.4 Officers reported that data regarding retainment in employment after apprenticeship was reported nationally and locally on a quarterly basis 90% of apprenticeships offered at NCC were on a permanent contract. The report of data was from a variety of sources and there was regular communication with training providers to look at Norfolk as a whole.
- 10.2.5 There were challenges around the social care workforce with an ageing population and this was being addressed by working alongside Norfolk and Suffolk Care Support to publicise careers and apprenticeships in this area as well as initiatives such as Health and Social Care careers week.
- 10.3 The Committee **RESOLVED** to **NOTE** the proposed Apprenticeship Strategy and Action Plan with the amendment of chair of the Apprenticeship Board to 'Cabinet Member for Growing the Economy' rather than a named Member.

11. Policy and Strategy Framework – Annual Report

- 11.1 The Select Committee received the annexed report (11) which set out information on the policies and strategies aligned to the work of the Committee, in the form of a policy and strategy framework.
- 11.2 The following points were noted in response to questions from the Committee:
- 11.2.1 Norse fell under the remit of the Corporate Select Committee and under the Cabinet Member with the portfolio for Commercial Services and Asset Management, as well as the Norse Shareholders Committee.
- 11.2.2 There would be regular updates on employment statistics and economic development.
- 11.2.3 It would be possible to bring back the Environmental Policy for review if the committee so wished.

11.3 The Committee **RESOLVED** to review the policy and strategy framework at Appendix A and identify any appropriate items for inclusion on the Forward Work Programme (where not already included).

12. Forward Work Programme

12.1 The Select Committee received the annexed report (12) by the Executive Director of Community and Environmental Services setting out the Forward Work Programme to enable the Committee to review and agree it.

12.2 The Bus Back Better and Bus Service Improvement Plan work would be reviewed at this Committee once developed.

12.3 The Environmental Working Group were keen to establish a regular report back which indicated the progress towards the environment targets. The report should be considered by Cabinet as the 'parent' of the working group.

12.4 Officers agreed to find out where projects and working groups which may have had funding halted would report too.

12.5 The Select Committee reviewed the report and **RESOLVED** to

- **Agree** the Forward Work Programme for Infrastructure & Development Select Committee.

The meeting closed at 12.35pm

Chair



If you need this document in large print, audio, Braille, alternative format or in a different language please contact Customer Services on 0344 800 8020 and we will do our best to help.

INFRASTRUCTURE AND DEVELOPMENT SELECT COMMITTEE
14 July 2021
Public & Local Member Questions

Agenda item 5	Public Question Time
5.1	<p>Question from Sophia Hale-Sutton</p> <p>Your TAMP plan states that Tarmac is responsible for cutting verges for NCC (where this has not been delegated to a town council).</p> <p>Question: How can I find out who cuts the verges in my parish and, for example, whether Tarmac has subcontracted this work?</p> <p>Supplementary question: How can my parish council go about bringing verge cutting in our parish in house (as is done in some urban districts in Norfolk)?</p> <p>Response from the Chair, Cllr Barry Stone</p> <p>We have delegated agreements with a number of District, Town and Parish Councils across the county. These can be seen on our website, here: https://www.norfolk.gov.uk/roads-and-transport/roads/road-maintenance/trees-hedges-and-grass-verges/grass-cutting under the question “who is responsible for grass cutting?”. These agreements are only considered for the urban cuts.</p> <p>Tarmac is responsible for grass cutting across the county and use their network of sub-contractors in order to complete this work within the required timescales. Their subcontractors are mostly local farmers or dedicated horticultural service providers.</p> <p>In terms of bringing urban grass cutting in-house for a parish, contact should be made with your local highway engineer who will assess the request and the associated cost of undertaking this work. If the parish are happy to proceed (based on the payment they will receive) an agreement will be required to delegate this function to them. The payment is based on what it costs NCC to cut the same verge.</p>

Agenda item 6	Local Member Issues / Questions
6.1	<p>Question from Cllr Jim Moriarty Minerals and Waste Local Plan – Shouldham/March area concerns If the intention was for SIL 02 is being removed (as have other areas in their entirety) from the plan as part of the previous consultation exercise following comments from the MoD about such work being inappropriate so close to RAF Marham, why is a large percentage of it possibly still going forward (approx 35%), albeit under the banner of AOSE ?</p> <p>Response from the Chair, Cllr Barry Stone This question relates to the contents of the Preferred Options version of the Minerals and Waste Local Plan which was published for consultation in September 2019. The Regulation 19 publication version of the Minerals and Waste Local Plan is currently being completed in order for the legal representations period to take place before submission to the Secretary of State for examination next year.</p> <p>Area of Search E and proposed site SIL 02 should be considered as entirely separate entities. An Area of Search is based on the British Geological Survey inferred mineral resources and within which area it is considered that a planning application could be submitted for a specific site for mineral extraction in the future, particularly if there is a potential shortfall in the supply of silica sand. As an Area of Search details such as working methods and restoration remain to be addressed. SIL 02 is a specific site that has been proposed by a mineral company which they propose to work wet. Whilst no restoration plans have been provided, it is highly likely that if the site is worked wet it would be restored to open water. The Ministry of Defence (Defence Infrastructure Organisation) objected to site SIL 02 due to the likely restoration to large areas of open water which could attract waterfowl. The MOD did not object to AOS E but raised safeguarding concerns and said they would require further information on any future proposals to determine whether a site located within AOS E could be managed with design principles and a Bird Management Plan.</p> <p>Based on the responses it was concluded that while it would not be appropriate to allocate SIL02, future proposals for extraction using alternative working practices could not be ruled out, so the land in question was retained in the Area of Search. Policies would require any future planning application to contain a bird hazard assessment and a bird hazard management plan on which the MOD (DIO) would be consulted.</p>
6.2	<p>Question from Cllr Jamie Osborne The Sustainability Appraisal framework for the current Local Transport Plan (LTP3) has an objective ENV1 “to reduce CO2 emissions from transport”. Transport emissions in Norfolk have increased each year since 2013. The agenda papers at page 222 describe the duty under the Transport Act 2000, section 109. for the Council to keep its LTP under review and alter or replace it if considered appropriate to do so. How has the persistent breach of the objective of carbon reductions in the LTP3 been reported within the Council, and why was it not considered appropriate to review the LTP3 earlier to address rising carbon emissions?</p> <p>Response from the Chair, Cllr Barry Stone Carbon emissions is one of several objectives in the Sustainability Appraisal for the current Local Transport Plan, LTP3. The plan itself also contains a number of targets. These are monitored annually and help to inform future delivery.</p>

	<p>Many factors need to be taken into account in considering whether to review the LTP including government and local policy objectives. Taking all of these factors into account led to Members agreeing to review the plan in 2019. This followed a roll-forward of the LTP Implementation Plan, agreed by Members in March 2015, which took account of relevant factors at that time.</p> <p>A full review of the Local Transport Plan is a significant task and takes into account a wide range of factors and views. This helps us to develop the best possible strategy moving forward, taking account of relevant priorities. The review of the Strategy enables us to give detailed thought to what more we can do to address carbon emissions in the county, including to deliver the carbon net zero commitment set out in the Environmental Policy agreed by Members.</p> <p>We have not been complacent whilst LTP4 has been developed and further work to support carbon reduction has continued during this period. This includes further investment in active travel and development of an electric vehicle strategy, which the Select Committee will be reviewing later this year.</p> <p>Moving forward, the LTP4 report on the Select Committee agenda asks that Members of the Committee agree on how they would want ongoing reporting of Local Transport Plan delivery in order to ensure that appropriate arrangements continue to be in place.</p> <p>Supplementary Question</p> <p>I refer to Monitoring Framework for the LTP4 SA, given at page 325 of the agenda, within the Sustainability Appraisal: SA Post Adoption Statement (DRAFT: June 2021). The Sustainability Appraisal framework for the LTP4 has an SA3 objective “to reduce carbon emissions”, which is the successor of ENV1 for the LTP3. Why have you relied on modelling that has not been independently validated in the LTP4 GHG Assessment documents to conclude that there are no “residual significant effects” on carbon emissions in the plan, when the monitoring data, based on real world monitoring has recorded a persistent breach of the carbon reduction objective since 2013?</p> <p>Response from the Chair, Cllr Barry Stone</p> <p>The Sustainability Appraisal was undertaken by independent consultants WSP on behalf of Norfolk County Council. The Sustainability Appraisal was a separate commission from the Norfolk Transport Greenhouse Gas Assessment and did not rely on the modelling undertaken for that.</p>
6.3	<p>Question from Cllr Maxine Webb</p> <p>A petition, signed to date by over 700 residents from across Norfolk, is calling for Norfolk County Council to stop the use of glyphosate herbicides and pesticides on our streets, council owned farms and other facilities. Given the growing health and environmental concerns over the use of weed killers containing glyphosates and the importance of pollinators - as evidenced in Norfolk’s Pollinator Action Plan, including ‘Top tip 6 – Ditch the pesticides’- will the committee include a review of the Council’s use of pesticides and especially glyphosate herbicides, on the future work programme of the Environment Member Oversight Group?</p> <p>Response from the Chair, Cllr Barry Stone</p> <p>Norfolk County Council takes a careful approach to the use of herbicides and pesticides across its estate, including highways, County Farms and other locations</p>

	<p>and one which is always led by national legislation and directives, including the Plant Protection Products (Sustainable Use) Regulations 2012.</p> <p>As laid out in the Pollinator Action Plan, the Council’s approach to its Roadside Nature Reserves (RNRs) is to avoid the use of pesticides.</p> <p>Officers are currently working on a new policy with regard to the Council’s use of herbicides and pesticides and this will be shared with the Environment Member Oversight Group in due course ahead of any committee review as part of the Council’s overarching approach to its policy framework.</p>
6.4	<p>Question from Cllr Richard Price</p> <p>There have been several instances of RNR’s being cut in my Division, which has caused great concern. Poor communication because of the chain of subcontracting. The Committee needs to emphasise that all subcontractors show greater diligence. Will the Committee adopt the Plantlife advice that the cut be delayed until the end of August or early September? The Parishes and Public also need to know who else is authorised to cut verges, Members, Parishes and the Public have a right to know. Will the Committee specify the criteria to include variety, number, rarity of plants to qualify to be a RNR and include information on how communities can apply?</p> <p>Response from the Chair, Cllr Barry Stone</p> <p>Question 1:</p> <p>A fine balance between road safety and the environment must be met with regards to the grass cutting operations across the county. Each year the growing season is subtly different. The prolonged wet and mild weather this year has seen significant growth and we are also receiving requests to undertake an earlier cut to ensure safety. The second rural cut has historically commenced in mid-July. We are currently exploring whether this second rural cut can be deferred to later in August. In light of the high level of growth and reported visibility issues across the network, this may not be possible for the current season. The feasibility of delaying the cut will be explored further for future cutting seasons.</p> <p>Roadside Nature Reserves (RNRs) are cut later in the year to allow the rare species to both flower and seed for the next season. RNRs are currently only marked on-site by means of wooden posts, which are easy to miss in long grass and subsequently knock over. It is proposed, to ensure RNRs are not mistakenly cut going forward, that GPS points are shared with those undertaking the cutting. An example of this may be marking the existing cutting maps with their locations.</p> <p>Norfolk County Council are responsible for cutting the roadside verges as the Highway Authority. The County Council employs contractors to undertake this work but also has delegated agreements in place with Parish, Town and District Councils. These can be seen on our website, here: https://www.norfolk.gov.uk/roads-and-transport/roads/road-maintenance/trees-hedges-and-grass-verges/grass-cutting under the question “who is responsible for grass cutting?”. These agreements are only in place for the urban cuts.</p> <p>Question 2:</p> <p>The method and criteria for designating RNR are very similar to how County Wildlife Sites are determined. They differ, in the main, because they are too small to meet the minimum site for County Wildlife Sites. More detailed information can be provided to interested communities on request.</p>

2022-23 Budget: Select Committee strategic and financial planning 2022-23

Cllr Andrew Jamieson, Cabinet Member for Finance

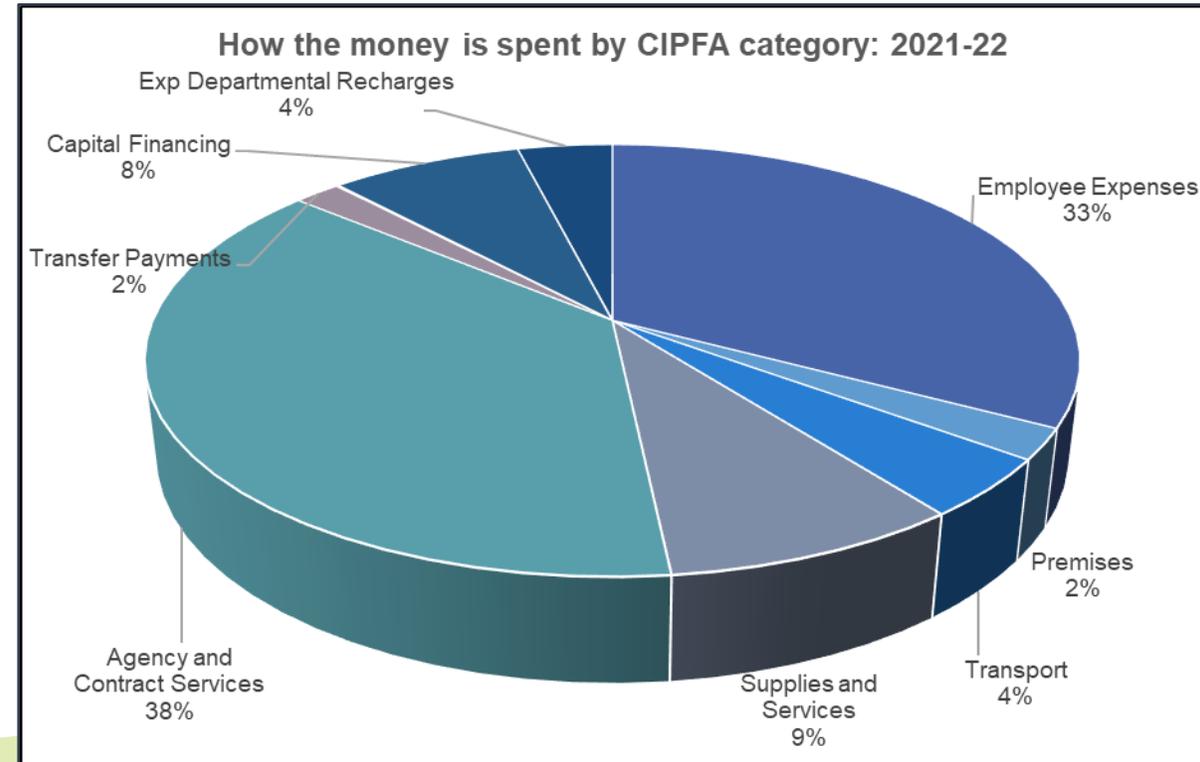
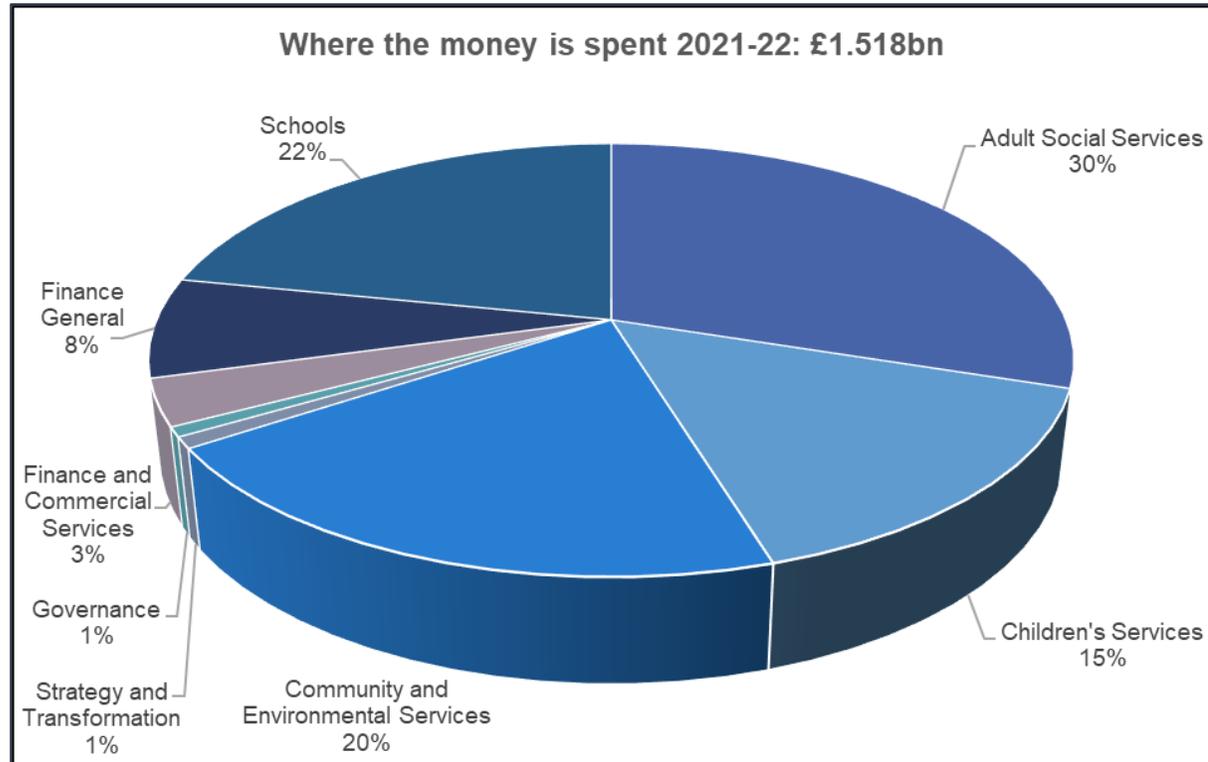
July 2021

2022-23 Budget process

Activity/Milestone	Time frame
Cabinet review of the financial planning position for 2022-26 – including formal allocation of targets	5 July 2021
Select Committee input to 2022-23 Budget development	12, 14, 16 July 2021
Cabinet considers emerging proposals and service budget strategies	6 September 2021
Cabinet considers full savings proposals and agrees proposals for public consultation	4 October 2021
Public consultation on 2022-23 Budget and council tax and Adult Social Care precept options	TBC October to December 2021
Reporting to Cabinet as appropriate on Government funding announcements / changes to planning assumptions	November – December 2021
Provisional Local Government Finance Settlement announced including provisional council tax and precept arrangements	TBC around 5 December 2021
Confirmation of District council tax base and business rate forecasts	31 January 2022
Cabinet considers outcomes of service and financial planning, EQIA and consultation feedback and agrees revenue budget and capital programme recommendations to County Council	31 January 2022
Final Local Government Finance Settlement	TBC January / February 2022
Scrutiny Committee 2022-23 Budget scrutiny	16 February 2022
County Council agrees Medium Term Financial Strategy 2022-23 to 2025-26, revenue budget, capital programme and level of council tax for 2022-23	21 February 2022

2021-22 Budget context

The graphs indicate how the Council's gross 2021-22 Budget is spent by service and type of spend. The scale of the budget provides important context when considering 2022-23 savings.



Medium Term Financial Strategy: Key assumptions

The Medium Term Financial Strategy (MTFS) agreed in February 2021 reflected the following assumptions:

- Significant cost pressures as set out in the appended report, however further pressures may emerge through the process;
- COVID-19 pressures cease after 2021-22;
- 2021-22 funding levels continue in 2022-23 (excluding COVID-19 funding);
- Pay inflation assumed at 3%;
- 1.99% council tax increase in all years, 1% ASC precept increase (2022-23 only);
- Limited tax base growth (0.5% in 2022-23, 0.75% 2023-24 and 1.0% thereafter);
- Collection fund deficit £2.4m 2022-23, £0.6m 2023-24, £0 2024-25.

	2022-23 £m	2023-24 £m	2024-25 £m	2025-26 £m	Total £m
Cost pressures and funding decreases	58.164	45.629	40.522	31.372	175.687
Change in forecast council tax income	-16.882	-14.390	-14.822	-14.604	-60.697
Existing planned savings in 2021-22 MTFS	-2.245	-1.600	-2.500	0.000	-6.345
Gap as reported to July 2021 Cabinet	39.037	29.639	23.200	16.768	108.645

Medium Term Financial Strategy:

Existing savings

- Planned savings already included in the 2021-25 MTFS agreed by Council in February total £47.524m.
- Savings to close the forecast 2022-23 MTFS gap of £39.037m are required **in addition** to existing savings of £2.245m.

	2021-22 £m	2022-23 £m	2023-24 £m	2024-25 £m	Total £m
Adult Social Services	-17.858	4.275	2.000	0.000	-11.583
Children's Services	-11.300	-6.900	-3.500	-2.500	-24.200
Community and Environmental Services	-8.288	-0.466	0.000	0.000	-8.754
Strategy and Transformation	-0.553	-0.180	0.000	0.000	-0.733
Governance	-0.353	0.000	0.000	0.000	-0.353
Finance and Commercial Services	-1.927	0.026	-0.100	0.000	-2.001
Finance General	-0.900	1.000	0.000	0.000	0.100
Grand Total	-41.179	-2.245	-1.600	-2.500	-47.524

Medium Term Financial Strategy: Saving targets for 2022-23

- Savings targets agreed by Cabinet 05/07/2021.
- Uncertainty around funding (fair funding, social care reform) and additional cost pressures.
- Detailed funding allocations for 2022-23 unlikely before late autumn 2022.
- Risks include COVID-19 pressures persisting into 2022-23.
- **Freezing council tax would add approximately £8.8m to the savings target to be found in 2022-23.**

	2022-23 £m	2023-24 £m	2024-25 £m	2025-26 £m	Total £m
Adult Social Services	17.700	13.600	10.700	7.800	49.800
Children's Services	8.700	6.500	5.000	3.600	23.800
Community and Environmental Services	8.700	6.500	5.100	3.700	24.000
Strategy and Transformation	0.500	0.400	0.300	0.200	1.400
Governance	0.400	0.300	0.300	0.200	1.200
Finance and Commercial Services	1.800	1.300	1.000	0.700	4.800
Finance General	1.300	1.000	0.800	0.600	3.700
Total savings target	39.100	29.600	23.200	16.800	108.700

Options to address any shortfall in savings to close the 2022-23 Budget gap will include:

- Government providing additional funding;
- Corporate / centrally identified savings opportunities; and
- Service departments identifying further savings at a later stage in the process.

Suggested lines of enquiry

Suggested **key questions for Select Committee** to consider:

1. What learning from the pandemic can be used to assist us in finding financial savings?
2. What areas of the Council's operations could benefit from the transformation programme?
3. Where can Members see scope for 'de-siloing', both internally and with partners?
4. What ideas are there for rationalising the property estate as we focus our operation on County Hall and other hubs?

Further considerations for saving proposals:

- **Long-term implications:** What is the likely impact on preventative services, invest to save, third-party income?
- **Strategic fit:** What are the links to wider organisational strategy and objectives?
- **Synergy:** Any alignment to other savings, and Smarter Working initiatives – which could be an opportunity to go bigger/share overheads?
- **Replicability:** Could this type of saving be repeated in any other service?
- **Key risks:** Including:
 - the extent it is in our gift – i.e. could be difficult, but in our power to deliver, or relies on cost avoidance/people's behaviours/culture change etc.
 - Wider risks and acceptability.
 - Double counting and overlap with other departments?
- **Challenges and costs:** Are the costs of implementation all included?
- **Consultation:** Does it require a policy change?
- **Equity:** Does it create a policy, employment or service delivery imbalance between service departments and service users?

Infrastructure and Development Select Committee

Item No. 7

Report title: Electric Vehicle Strategy

Date of meeting: 15 September 2021

Responsible Cabinet Member: Cllr Wilby (Cabinet Member for Highways, Infrastructure and Transport)

Responsible Director: Tom McCabe (Executive Director for Community and Environmental Services)

Introduction from Cabinet Member

With a ban on sales of new petrol and diesel cars nationally being brought forward to 2030 by the government, the uptake of electric vehicles is forecast to rapidly increase over the next decade.

Cars and vans currently make up nearly a fifth of carbon emissions, so this shift is set to bring about significant reductions in carbon emissions across the UK. The Council, which has set its own carbon net zero target by 2030, can play an important role in helping to accelerate the uptake of electric vehicles by ensuring that the necessary charging infrastructure is in place and by setting a good example to local businesses and organisations as a result of electrifying its own fleet.

Electric vehicles (EVs) currently make up 0.6% of the total vehicles on the road in Norfolk in 2020 but is set to increase tenfold by 2025, before rapidly increasing to 27% by 2030. Several external reports and surveys have highlighted that the lack of suitable EV charging infrastructure will inhibit the uptake of EVs in Norfolk, and that the Council can play an important role in both facilitating and promoting the installation of new public electric vehicle charging points. This role complements other Council sustainable transport initiatives such as active travel, e-scooters and e-bikes, delivered as part of the Transforming Cities project, and help with other initiatives such as zero emission buses, which all demonstrate the Council's commitment to reducing the carbon impacts of transport.

This report invites the committee to make comments on several proposals that are being developed as part of a new Electric Vehicle Strategy in support of the Council's strategic vision to improve air quality and reduce carbon emissions, as set out in its Environmental Policy and latest draft Local Transport Plan.

Executive Summary

Switching to EVs has been identified in our latest draft Local Transport Plan as one of the most effective policies in reducing carbon emissions from transport, and the Council can accelerate EV uptake by facilitating greater availability of charging options through several initiatives.

To assist with delivering this, and in line with government policy initiatives, an EV strategy has been developed by the Council. A copy of this detailed strategy is included in Appendix A. This reviews the existing situation in Norfolk including grid capacity, looks at forecast growth and charging requirements, and recommends ways that the Council can help facilitate a growth in the number of EV charging locations across the county.

Work has already begun to explore ways that the Council can promote more public EV charging points to be deployed across Norfolk. Through a collaborative pilot project with the regional electricity distribution network operator, proposals to install EV charge points on residential streets across Norwich are in the final stages of development. It is envisaged that the Council will facilitate these installations, with government grant funding subsidising private investment into this infrastructure.

Proposals have also been put forward that would enable the Council to seek government grant funding to subsidise the cost of installing EV charge points funded through the local highway member fund. This will reduce the costs payable from the member fund to 25%, in turn enabling more investment in EV infrastructure.

The demand for EV charging is expected to be highest at home, yet nationally 25% of vehicles are parked on public streets. These owners currently face a logistical challenge due to the lack of any on-street charging points and the Council as the local highway authority, is increasingly receiving requests from EV owners for advice and permission to place charging cables across public footways between EVs parked kerbside and the frontages of private properties.

It is proposed that the Council adopts a formal process to issue highway licences upon request, giving permission to applicants to place a suitably protected cable across the public footway following an assessment to determine both suitability and need. It is envisaged that this will be a temporary solution that will promote earlier uptake of EVs until a time when alternative nearby public EV charging infrastructure is available.

Actions required

- 1. Review and comment on the proposed adoption of the EV strategy provided in Appendix A.**
- 2. Review and comment on the proposal to introduce a process for residents to apply for a licence to enable them to place cables across public footways in order to charge EVs on street.**
- 3. Comment on proposals to secure funding to enable public EV charge points to be installed on residential streets in Norwich.**

4. **Comment on proposals to alter the process to install EV charge points in community hubs funded via the local highway member fund to help maximise the number of schemes that could be brought forward.**

1. Background and Purpose

- 1.1. In November 2019, the Council approved the NCC Corporate Environmental Policy, which sets out how the Council will deliver important benefits for Norfolk's environment and people alongside ambitious carbon reduction targets through new approaches to the management of its own estate and activities.
- 1.2 Alongside this, in November 2020 the Government announced plans to bring forward by ten years a ban on the sales of petrol and diesel cars in the UK to 2030, followed by hybrids in 2035. The Ten Point Plan for a Green Industrial Revolution also stated a commitment to invest £1.3 billion to accelerate the roll out of charging infrastructure, including on-street near homes and workplaces. As the local highway authority, the Council has a role to play in delivering on this ambition. Our latest Transport Plan (which was recommended by Cabinet to be adopted by Full Council in September) recognises that switching to EVs is one of the most effective policies in improving air quality and reducing carbon emissions.
- 1.3 A Green Paper is expected this year that will set out the UK's post emissions regulations as well as car and van phase out dates and launching a consultation on the phase out of new diesel HGVs.
- 1.4 Car electric vehicles (EVs) made up 0.6% of the total vehicles on the road in Norfolk in 2020, which is lower than the national average at 1.3%. This is projected to increase in Norfolk to 5% (26,000 vehicles) in 2025, before rapidly increasing to 27% (168,000) in 2030.
- 1.5 The development of a strategy document was commissioned to examine the current status of EV uptake and charge point provision in Norfolk, and the role that the Council can play in promoting EV uptake. The findings of this report are discussed further under the Proposals section below.
- 1.6 This paper also outlines several proposals being developed to support the uptake of EV ownership in Norfolk in line with this EV strategy. These proposals all aim to encourage further uptake of EV in Norfolk and identify ways to make owning, operating and running an EV an even more attractive option.

2. Proposals

2.1 Electric Vehicle Strategy

- 2.1.1 An EV strategy report was produced by our highway professional services provider, WSP, in July 2021. The full report is available in Appendix A.

- 2.1.2 WSP were asked to identify infrastructure-related barriers that may slow the public's transition to EVs and ways that the Council and other district/borough/city councils could help overcome these barriers.
- 2.1.3 Research undertaken as part of the development of this strategy identified that the pipeline of future EV Charge Point deployment is limited across all councils in Norfolk, and EVs/EV Charge Points are not prominent in current policy across the County.
- 2.1.4 The report concludes that actions to help deliver this strategy could include the Council;
- Developing a pipeline of projects looking at installing public EV charge points across the county (with an estimated requirement of around 1600);
 - Improving on-street EV Charge Point (EVCP) parking by encouraging hubs at employment sites;
 - Accelerating activity between 2025-2030 in preparation of the impending sales ban on internal combustion engine vehicles;
 - Noting rural areas will have a higher propensity to switch to EVs, as well as higher car ownership, and more off-street parking;
 - Focusing on interventions in rural areas as the private sector will likely deliver in Norwich, Great Yarmouth, King's Lynn and along the strategic road network.
- 2.1.5 A total of 25 recommendations are made in the strategy, categorised into six groups:

Recommendation/Action	Council Role
Accelerate charge point deployment to promote EV uptake	
Let the private sector take the strain and carry the risk where possible	Enable
Take a balanced approach to delivering charging infrastructure, inviting private investment but retaining control	Enable
Make the most of available funding opportunities	Lead
Focus on establishing good charge point coverage and plugging gaps	Lead
Deliver the right solution for the right location	Enable
Consider the potential to integrate EV charging with other energy and transport services as part of new Mobility Hubs	Explore
Review Fleet	
Undertake a fleet review to identify opportunities	Lead
Install charge points at Council depots, with associated driver awareness and training	Lead
Collaborative working with Central Government, districts and boroughs	
Urge Government to further reduce the costs of electric vehicle purchase and ownership compared to petrol and diesel vehicles	Encourage

A co-ordinating role for the County	Encourage
Establish a Norfolk EV forum	Encourage
Update EV parking and design standards	
Adopt EV parking standards to ensure every new home with a parking space has an EV charge point	Require
Adopt EV parking standards for new workplaces	Require
Adopt EV parking standards for other new non-residential developments	Require
Adopt design standards for on-street chargers to enable and manage future private sector roll-out of charge points	Require / Encourage
Provide guidance for the use of cable covers and covered ducts by residents	Enable
Explore Wider Measures	
Explore additional local incentives to increase EV uptake beyond additional charge point infrastructure	Explore
Identify opportunities to support research and innovation in Electric Vehicles in Norfolk	Enable

2.1.6 Adopting the strategy will provide clear forward direction within the Council on the role that it can and should play in accelerating the uptake of EVs in Norfolk, and also nationally when considering the impact on the tourism and commercial sectors.

2.1.7 To support the development and delivery of policies in line with the above recommendations, it is proposed that a new Electric Vehicle Infrastructure Project Engineer post is created within the Highways & Waste team. It is anticipated that the cost of this post can be offset by maximising grant income received to support the delivery of charge point installation.

2.1.8 The remainder of this section outlines proposals that have been developed in line with and supporting the delivery of the EV strategy recommendations.

2.2 Charging Cables Across the Highway

2.2.1 The Council has received an increasing number of requests for permission to charge EVs on public residential streets by allowing owners to place a cable across the public footway between EVs parked kerbside and residential frontages. At this stage, no permission has been granted in the absence of any formal policy.

2.2.2 It is proposed that the Council adopt a policy whereby private cables laid across the highway are permitted by way of issuing a highway licence for the purposes of charging EVs, following an assessment by the local Highway Engineer on a case-by-case basis to determine both the need and suitability. For instance, licences will not be issued if other nearby suitable charging infrastructure already exists.

2.2.3 EV owners will be required to apply for a licence online, renewed every 2 years. An assessment procedure has been produced in Appendix B to enable this policy to be implemented.

- 2.2.4 It is recognised that unprotected cables across the highway will disproportionately impact other highway users with protected characteristics, such as pedestrians or people using wheelchairs and pushchairs. This needs to be balanced against the desire to help encourage a greater uptake of EV and to encourage their ownership and operation. Therefore, it is proposed that licences are only granted where appropriate and where cable protection mats are used. Guidance on the type of mats that would be suitable, including gradients and colour contrast, as well as how these mats are to be used have been included in the procedure. This will help ensure that footways remain accessible.
- 2.2.5 All highway licences issued will be recorded on an internal database and will assist with future funding bids and scheme prioritisation by evidencing which areas have the greatest need for permanent, purpose-built EVCPs to be installed to serve these users in the longer term.
- 2.2.6 EV charging from a domestic supply is typically cheaper for the consumer than using on street public charging infrastructure. Granting permission for cables across the highway is regarded as a temporary solution until more suitable, permanent infrastructure is installed across the network.
- 2.2.7 A £51.36 fee (reviewed annually) is proposed for applications for cables across the highway, which covers the costs of undertaking the assessment and issuing a licence to successful applicants. This also mirrors the process and costs associated with other highway licence fees.

2.3 On-Street Residential Charging Infrastructure

- 2.3.1 Norwich City Centre is within an Air Quality Management Area, with transport being a major source of pollutants. The Council recognises that this is a priority and Norwich has been selected to be part of a pilot scheme in collaboration with UK Power Networks (UKPN) to install public EVCPs on residential streets. UKPN have also independently identified Norwich as an area with very low numbers of public on-street EVCPs. It is hoped that this pilot will then provide a blueprint that can be used to deploy similar facilities elsewhere in the county as required.
- 2.3.2 A survey carried out amongst residents in Norwich by UKPN, as part of a study across their region into EV uptake, identified that the biggest barrier that respondents felt were preventing them from purchasing an EV was the lack of charging points at or near home. Other barriers included lack of public charging points, running out of charge on long journeys and the cost of buying a vehicle. 59% of respondents were more likely to switch to an EV if there were more public charging points near home.
- 2.3.3 This was verified by the WSP EV Strategy report, which identified that around 75-80% of charging demand will be home-based. This report also identified that areas with a greater reliance on on-street parking are most likely to experience a gap in EVCP provision and would benefit from intervention from the Council.

- 2.3.4 Several wards within inner Norwich City have very low rates of off-street residential parking available, averaging at around 9% of households, which is well below the national average for city centres at 34%. This is expected to have a significant impact on EV uptake, since most households with no off-street parking will not physically be able to install their own private charging point (regardless of a grant available to subsidise the installation costs). Not everyone without off-road parking has a vehicle, but around 25% of all cars nationally are parked on streets overnight.
- 2.3.5 Potential EVCP sites have been identified on residential streets with residential permit zones within the Nelson, Mancroft, Mile Cross, Sewell, Thorpe Hamlet, Lakenham and Town Close electoral divisions. These areas were selected for the pilot project through a data-led exercise, which identified a low availability of off-street parking combined with a high proportion of car ownership per household.
- 2.3.6 It is anticipated that the funding for installation will be sought from the Office for Zero Emission Vehicles' (OZEV) On-Street Residential Chargepoint Scheme (75%) and private investment from a third-party installer/operator (25%). The Council will not own and operate any of these EVCPs, but instead will utilise its highway authority powers to facilitate the installation on the public highway. Installations could begin in 2022 subject to a successful procurement exercise and awarding of funding from OZEV. This may also provide an opportunity for the Council to generate an income from the operation of EVCPs on the Highway network. This will be explored further as part of the procurement exercise.
- 2.3.7 The Council's Network Management team also submitted its own bid to UKPN's Green Recovery Fund for energy network investment elsewhere in the county to support anticipated future rollout of on-street EVCPs in King's Lynn, Great Yarmouth and a number of other market and coastal towns in areas with a high level of on-street residential parking. Other key non-residential areas around Norwich were also included, for example taxi ranks in the city centre and park and ride sites. However, this bid was not successful although the work undertaken as part of this bid will form the basis of future similar bids and other funding opportunities will be sought.
- 2.3.8 It is clear through the pilot project that lack of capacity in the energy network infrastructure will be a key barrier to public EVCP rollout across the county. The commercial viability of private investment into public EVCPs is also likely to be more challenging in smaller, rural towns and villages. The Council will continue to work with UKPN and other partners to identify and exploit future opportunities. Discussions have been held with South Norfolk, Broadland District Council and the Broads Authority on how a collaborative approach combining with ambitions to electrify the Norfolk Broads boat fleet may attract funding.

2.4 Highway Member Fund

- 2.4.1 In April 2021, the highways member fund was increased to £10,000 per county councillor. The capital installation of public EV charge points in community car parks, such as at village/town halls, was also brought into scope.
- 2.4.2 Since such community car parks will be within proximity of residential areas that will benefit from any such installations, it is likely that they will qualify for funding from the government's OZEV's On-Street Residential Charge Point scheme. This in effect means that the member fund could fund 25% of the installation costs, instead of 100% currently, with the remainder being met through the government grant scheme.
- 2.4.3 The terms of the funding require the Council to apply for the funding, therefore it is proposed that going forward, in order to maximise grant income potential, member funded EVCPs are administered through the creation of a dedicated Electric Vehicle Project Engineer post, who will also co-ordinate the on-street residential EVCPs as well as providing advice towards residential and commercial planning applications received by the Council. The role will also lead on highways and transport related EV funding bidding opportunities and co-ordinating delivery. It is anticipated that the cost of this new staff post will be offset by the additional income that would be generated through administering the OZEV scheme.
- 2.4.4 County Councillors will still play a key role in determining the need for new EVCPs within their Divisions and allocate funds accordingly, with the Council team providing advice and guidance as well as applying for funding. It is expected that EVCPs will be owned and operated by the relevant community car park owner/operator.

2.5 Residential and Commercial Developments

- 2.5.1 Government are currently proposing changes to building regulations for:
- New residential buildings to include requirements for electric vehicle charge points;
 - New non-residential buildings to include requirements for EVCP infrastructure;
 - Existing non-residential buildings to have EVCPs as part of any major alterations.
- 2.5.2 No timescales have been provided for the publication of the revised Building Regulations, or what changes will specifically be included.
- 2.5.3 The EV Strategy report in Appendix A recommended that the Norfolk Parking Standards are updated to include specific recommendations on the inclusion of EVCPs in new residential and commercial developments. These standards are currently being reviewed and will include EVCPs requirements.
- 2.5.4 In the meantime, we are working with Local Planning Authorities to promote the introduction of EVCPs on major developments, such as the new

supermarket on Broadland Gate where new EVCPs have been installed, with infrastructure in place to expand these installations at a later date when required.

2.5.5 It is anticipated that all future large-scale residential developments will include EVCP provision.

2.5.6 Officers have also taken a proactive approach in installing underground ducting on King Street during recent highway improvement works being delivered as part of the Transforming Cities programme. This ducting can be utilised to provide an EVCP at an existing Norfolk Car Club parking bay, who have ambitions to convert their fleet to EVs.

2.6 Fleet Review

2.6.1 Procurement are undertaking a review of future fleet procurement, with the intention that all future Council fleet purchases will be EVs unless there is a clear business case as to why EVs cannot be utilised.

2.6.2 In support of this, an initial installation of four EVCPs has taken place at County Hall. Further work looking at the wider Council estate is already underway including EVCPs within the Council's Highways depots.

3. Impact of the Proposal

3.1. Providing a formal process that permits residents to place EV charging cables across a public footway in situations where owners do not have any suitable off-street facility to do so will encourage uptake of EVs across Norfolk. By formalising the process and setting out a clear policy, the impacts of cables on the highway on other users including those with protected characteristics can be minimised. The Council's Highway teams will also be able enforce against charging situations that do not meet the policy requirements or represent a health and safety hazard.

3.2 Progressing with the installation of dedicated EVCPs in a number of residential streets in Norwich as part of a pilot project, will negate the need for EV users in these areas to otherwise request permission to place cables across the highway. This project is deemed to be low risk to the Council, since it is intended that a private investor will own and have the responsibility for the ongoing maintenance of EVCPs installed under this scheme. Income generation options for the Council will also be explored as part of this initiative.

3.3 Creating a process to administer the installation of EVCPs funded by the Local Member Fund will maximise the potential for government grant income that, at the time of writing, will subsidise 75% of the cost of installation.

3.4 Updating the Norfolk Parking Standards will place more onus on developers to provide suitable EVCP infrastructure within their developments. National building regulations are currently under review to make this a requirement nationally, although there are currently no known timescales for its

publication. The Norfolk Parking Standards will provide interim advice and also set local expectations to ensure consistency and alignment with local policies and standards.

4. Financial Implications

- 4.1. The creation of a new EV Project Engineer post to oversee the implementation of the EV Strategy including the installation of EV charge points would be funded by income generated and through successful funding bids.
- 4.2. Capital costs for any EVCP infrastructure will be met by a combination of external funding matched by private sector investment.

5. Resource Implications

5.1. Staff:

The creation of an EV Project Engineer post as detailed in 4.1 above.

5.2. Property:

Four EV charge points have been installed at County Hall, and the Corporate Property Team are undertaking a review of other sites within the Council's estate with a view of rolling out further charge points, which include the Council's Highway depots.

5.3. IT:

None identified

6. Other Implications

6.1. Legal Implications

Issuing of highway licences to permit applicants to place protected EV charging cables across public footways could result in liability claims. The Risk and Insurance team have been consulted who are satisfied that the current proposed process would demonstrate reasonableness under Section 58 of the Highways Act 1980 as a defence against potential claims.

This work supports the Climate Change Act 2008 (2050 Target Amendment) Order 2019

6.2. Human Rights implications

None identified

6.3. Equality Impact Assessment (EqIA)

An EqIA has been identified as being required in respect of proposals to permit charging cables across the public footway, installation of public charge points in residential streets in Norwich and updating the Norfolk Parking Standards.

The Equalities and Diversity team have provided advice in respect of charging cables across the highway and are content that these proposals will minimise the impact on highway users with protected characteristics, including wheelchair and pushchair users who would otherwise be disproportionately affected by unprotected cables trailing across footways.

6.4. Data Protection Impact Assessments (DPIA)

Not required

6.5. Health and Safety implications

The proposals to licence charging cables on the Highway following a site-specific review will improve safety for highway users.

6.6. Sustainability implications

These proposals support measures outlined in the County Council Environmental Policy and latest Local Transport Plan (recommended by Cabinet to be adopted by Full Council in September) in support of its ambition to meet carbon neutrality by 2030.

6.7. Any other implications

None identified

7. Actions required

- 1. Review and comment on the proposed adoption of the EV strategy provided in Appendix A.**
- 2. Review and comment on the proposal to introduce a process for residents to apply for a licence to enable them to place cables across public footways in order to charge EVs on street.**
- 3. Comment on proposals to secure funding to enable public EV charge points to be installed on residential streets in Norwich.**
- 4. Comment on proposals to alter the process to install EV charge points in community hubs funded via the local highway member fund to help maximise the number of schemes that could be brought forward.**

8. Background Papers

- 8.1 [Environmental Policy for Norfolk County Council; Report to Full Council 25 November 2019](#)**
- 8.2 [Local Transport Plan; report to Cabinet 2 August 2021](#)**
- 8.3 [The Ten Point Plan for a Green Industrial Revolution](#)**

Officer Contact

If you have any questions about matters contained in this paper, please get in touch with:

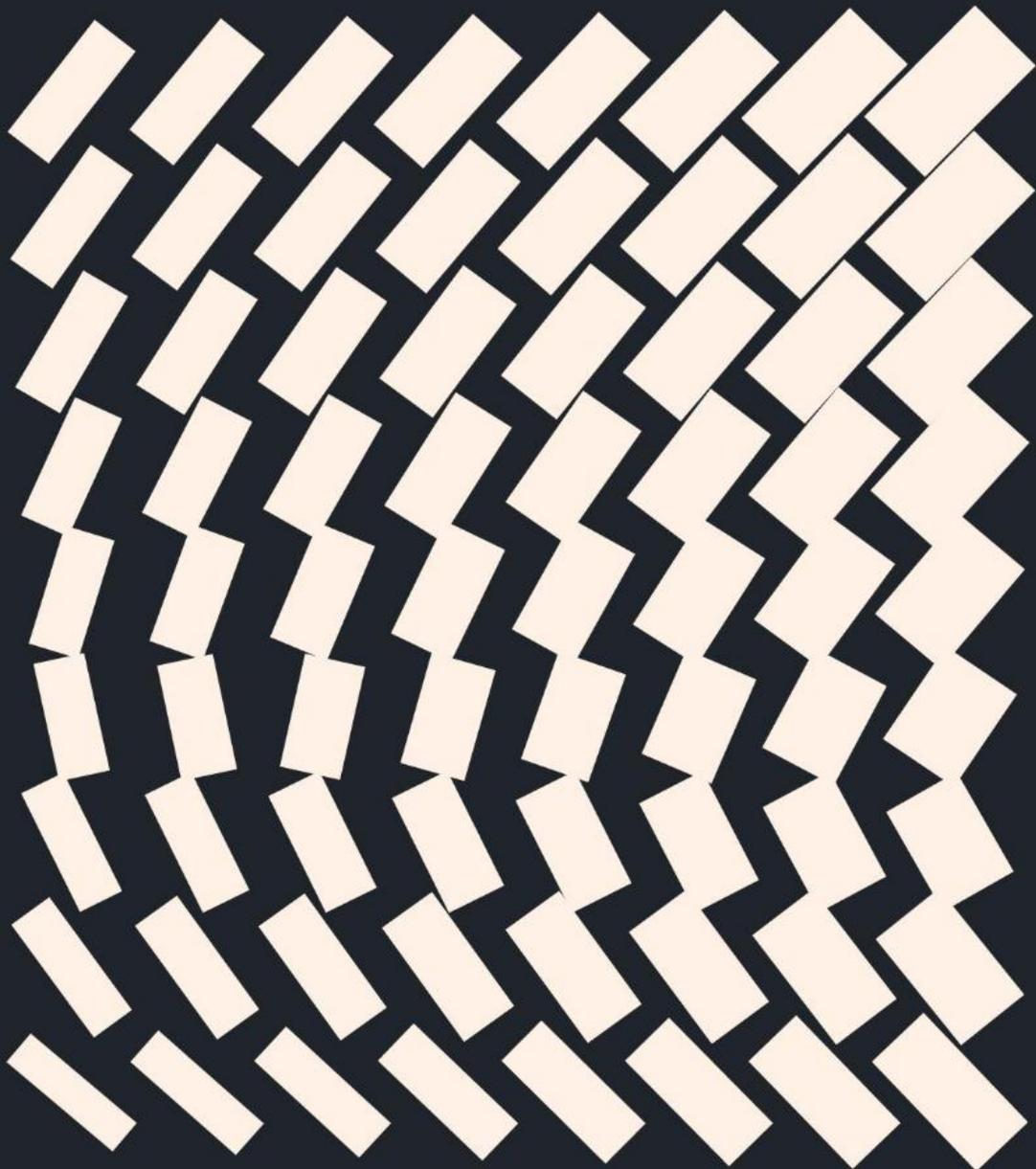
Officer name: Alex Cliff

Tel no.: 01603 222311

Email address: alexander.cliff@norfolk.gov.uk



If you need this report in large print, audio, braille, alternative format or in a different language please contact 0344 800 8020 or 0344 800 8011 (textphone) and we will do our best to help.

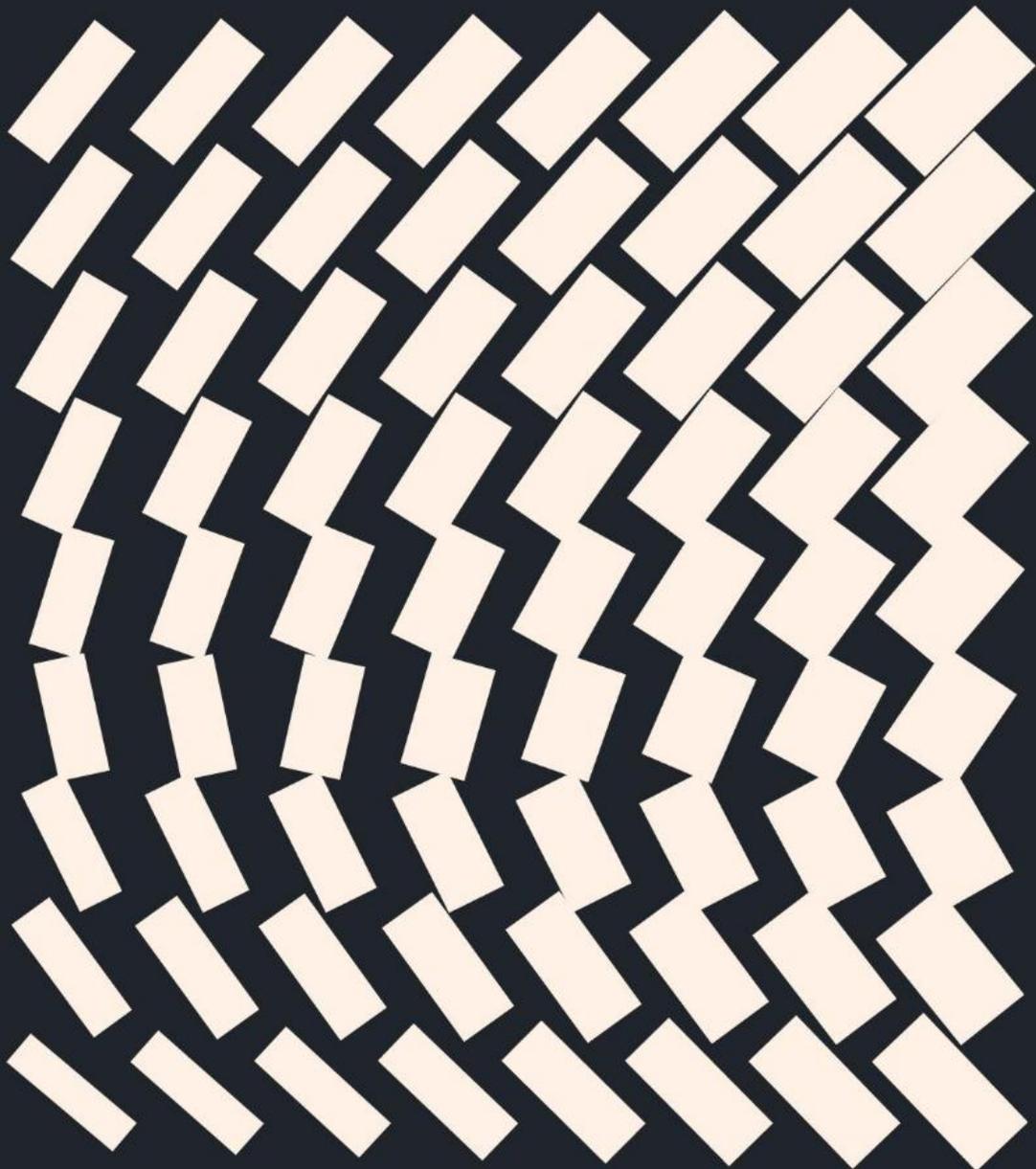


Electric Vehicle Strategy

Final Report

Norfolk County Council

July 2021



Document control

WSP UK Limited
70 Chancery Lane
London
WC2A 1AF

Tel: +44 20 7314 5000
Fax: +44 20 7314 5111

wsp.com

Document control	Draft report	Draft final report
Date	14 April 2021	6 July 2021
Prepared by	Adam Molyneux Charlie Corbett Aideen Moylan	Charlie Corbett
Review by	Daniel Quan	Daniel Quan
Approved by	Matt Croucher	Matt Croucher

Executive summary

Overview

Norfolk County Council (NCC) commissioned WSP to undertake a study to identify measures NCC and its constituent district councils can, or should, be taking to overcome barriers to electric vehicle charge point (EVCP) rollout. The study took a four stage process, as outlined below.

This report presents the analysis undertaken and recommendations from the study.



Future Mobility

Baselining & research

As of April 2021, there are 198 publicly accessible EV chargers across Norfolk, of which 33 are rapid chargers. The level of charging provision varies between authorities – Norwich has the most, 44 of the 198, whilst Broadland has the fewest (15).

There are currently 2,631 EVs registered across Norfolk, and again there are differences in uptake across the authority areas: 22% of all EVs in the county are registered in South Norfolk whilst 5% are registered in Great Yarmouth.

Research was undertaken into the different EVCP technologies available. A wide variety of technologies are available depending on the use case, and more charging options are expected to emerge over time. The report presents a series of considerations related to charging technologies, including on/off-street charging technologies, design principles for EVCPs and standards. The merits of Smart Charging are identified, and indicative capital and operating costs are presented. Consideration of future proofing and emerging mobility solutions are also presented.

Grid capacity is often a key constraint on EVCP provision, and therefore high level analysis of grid capacity was undertaken. The analysis found that, as demand increases, the medium term requirement is for a greater number of chargers, which will incur increasing connection costs where the increasing power demands require upgraded connections to the 11kV network. This entails a high upfront costs, but can then cater for a large number of chargers. So if a large deployment of chargers is required, and they will be well utilised once installed, the initial cost of the upgrade may be justified and still present a viable business case. A number of sites would potentially benefit from alternative mitigating measures to conventional grid upgrades.

Policy context & stakeholder engagement

Authorities across the county do not have EV specific policies, but do make references to EVs and EVCPs within related policies, including in local plans. A review of local policy found that Norwich, South Norfolk and Broadland all have environmental strategies that were published in 2020. Kings Lynn, Great Yarmouth and Breckland do not have environmental strategies but do have air quality action plans which tend to be older documents.

Key findings from engagement with the Norfolk authorities include:

- Overall, the pipeline of planned future EVCP deployment is limited. This is due to a range of infrastructure, policy, economic, and technical barriers which were raised by the stakeholders.
- The greatest perceived barriers to EVCP deployment across the county was infrastructure costs.
- Range anxiety and the cost of EVs are the greatest perceived barriers for EV uptake across the county.
- EVs and EVCPs are not prominent in current policy across the county. However, some authorities stated that the topic is starting to gain pace in local policy.
- A recurring theme that was raised throughout the engagement sessions was the need for local authorities to be leading by example.
- With regards to delivery models, most authorities are open minded and will be lead by industry. With some preference towards taking an enabling and facilitating role.
- Most authorities did not have a preferred commercial model but stated that they want to take a cost neutral and low risk approach.



Executive summary

Forecasting EV uptake & charging requirements

WSP's in-house EV:Ready tool was used to derive forecasts for future EV uptake. EV:Ready enables sophisticated EV uptake forecasting and scenario testing. It generates granular forecasts to a neighbourhood level, accounting for highly localised spatial variations in the key determinants of EV uptake rates, including: consumer profiles, socio-demographics, the availability of off-street parking, vehicle ownership, vehicle sales and turnover rates and vehicle ownership trends. This provides a bespoke and holistic approach to EV uptake forecasting, and therefore is likely to yield different results than previous work conducted by NCC. Full details of the datasets and assumptions used in developing the EV uptake forecasts, and resulting charge requirement, is presented in **Section 3**.

The forecast uptake of EVs across Norfolk by 2030 is 168,279 (26.8% of vehicles), rising from 1,931 in 2019 (0.3%), and 25,924 (4.9%) in 2025.

South Norfolk is projected to have the greatest share of EVs in 2030 (31,062, 18.5%) Great Yarmouth is projected to have the lowest share of EVs in 2030 (13,410, 8%) which is likely due to the lower vehicle ownership.

The share of annual new vehicle sales made up of EVs in Norfolk is forecast to reach 89.4% in 2030, rising from 2.1% in 2020, and 16.6% in 2025.

The competing effects of the local populations propensity for switching to EVs, their car ownership levels, and the extent to which they are reliant on on-street parking, serve to create a varied picture of EV ownership across Norfolk, as areas with high propensities towards EV ownership are often partly offset by also being areas of lower car ownership and greater reliance on on-street parking.

Low, mid and high forecasts for EVCP requirements up to 2030 were developed. The results show that in 2030, there is a requirement for 2,630 EVCPs under the mid forecast, assuming a blend of both rapid and fast chargers and both public and private EVCPs.

Following engagement with a number of charge point operators, an assessment was made of the number of EVCPs that the private sector is likely to deliver across Norfolk up to 2030. This analysis indicates a strong focus of supply by the private sector in key urban areas including Norwich, Great Yarmouth and Kings Lynn. There is also expected to be a high level of provision of EVCPs by the private sector along the SRN. Conversely, low levels of private sector provision of EVCPs is shown in the more rural locations of the County.

Based on the forecast uptake of EVs in Norfolk, the requirement for publicly accessible charging infrastructure, and an assessment of the likely areas of focus for private sector investment, the mid-range estimate is for a requirement of 1,614 additional publicly funded charge points by 2030.

The report presents a range of funding options and opportunities. To date the majority of public charge points installed in the UK have been funded by public sector grants from the Office for Zero Emission Vehicles (OZEV) and elsewhere. However, private sector partnerships and revenue share arrangements are becoming increasingly common and can be a good choice for some local authorities. The Government has launched several funding rounds to help enable the charging of EVs at home, in the workplace and on local streets.

In the longer term, EV charge points are likely to be delivered on an increasingly commercial basis in many settings, as the number of EVs on the road increases and the business case improves. The public sector role is expected to evolve towards a greater focus on the remaining hard to reach areas.

Recommendations

We then developed recommendations which were based on the:

- Baseline and research
- Policy context and stakeholder engagement, and
- Forecasting demand and charging requirements.

The 25 recommendations were categorised into six groups, which are:

- Accelerate charge point deployment to promote EV uptake
- Review fleet
- Collaborative working with Central Government, districts and boroughs
- Update EV parking and design standards
- Explore wider measures
- Promotional activities and awareness raising

A mind map of the recommendations is shown overleaf. These recommendations were then set out as an action plan, which includes:

- The Council role - lead, enable, explore, encourage, or require
- Action by (i.e. who is to lead)
- Recommended timescale.

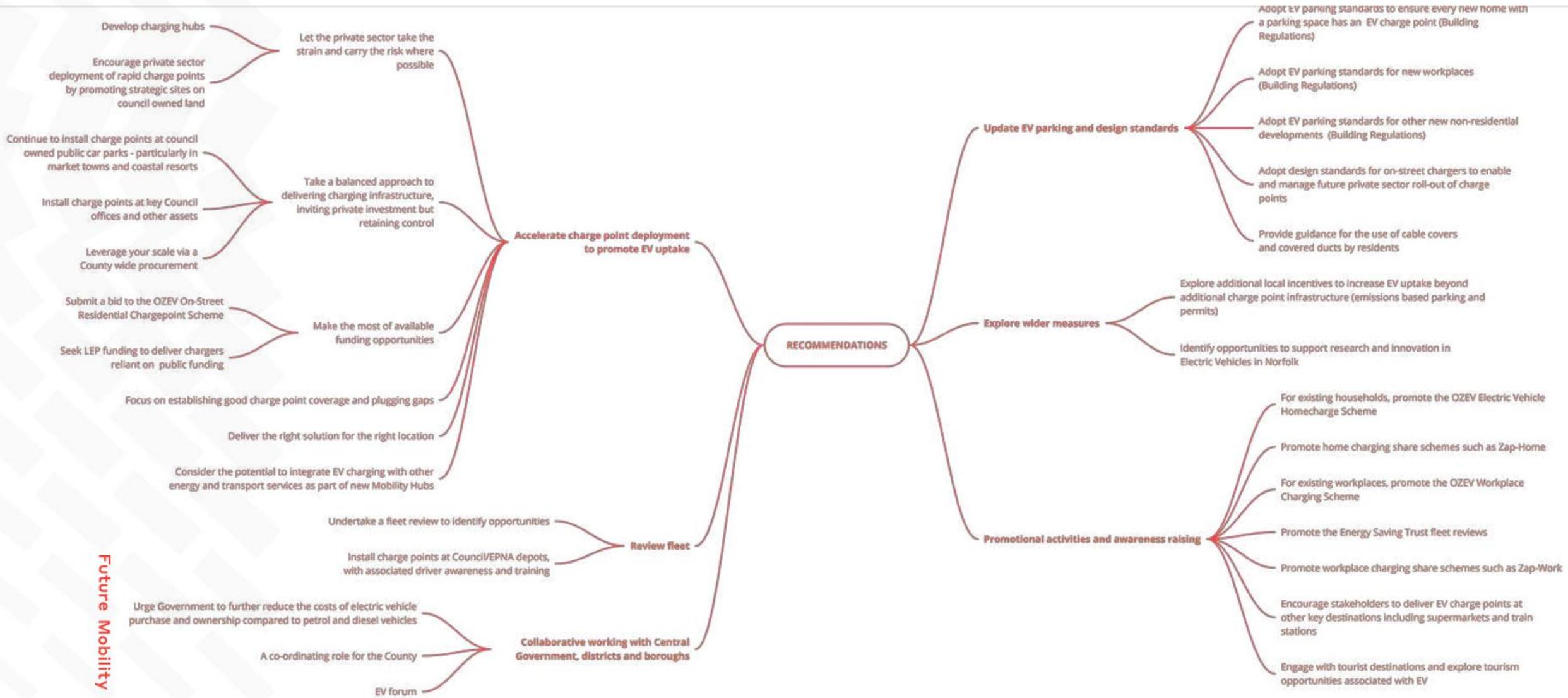
The key conclusions which can be drawn from the 25 recommendations are as follows:

- A pipeline of EVCPs with a projected number for delivery should be created
- On-street EVCP parking can be addressed by considering hubs and employment sites
- Acceleration between 2025-2030 needed to be prepared for the impending ICE sales ban
- Rural areas have a higher propensity to switch to EVs, as well as higher car ownership, and more off-street parking
- The private sector will likely deliver in Norwich, Great Yarmouth, King's Lynn & West Norfolk, and along the SRN, therefore points of intervention needed in rural areas



Recommendations

Mind map of proposed recommendations



Future Mobility

Recommendation / action	Council role	Action by	Recommended timescale
Accelerate charge point deployment to promote EV uptake			
Let the private sector take the strain and carry the risk where possible	Enable	All authorities working in partnership, coordination by NCC	Ongoing
Take a balanced approach to delivering charging infrastructure, inviting private investment but retaining control	Enable	All authorities working in partnership, coordination by NCC	Within 12 months
Make the most of available funding opportunities	Lead	All authorities working in partnership, coordination by NCC	Within 12 months
Focus on establishing good charge point coverage and plugging gaps	Lead	All authorities working in partnership, coordination by NCC	Within 3 years
Deliver the right solution for the right location	Enable	All authorities working in partnership, coordination by NCC	Ongoing
Consider the potential to integrate EV charging with other energy and transport services as part of new Mobility Hubs	Explore	All authorities working in partnership, coordination by NCC	Ongoing
Review fleet			
Undertake a fleet review to identify opportunities	Lead	All authorities Fleet managers	Within 12 months
Install charge points at Council/EPNA depots, with associated driver awareness and training	Lead	All authorities Fleet managers	Within 12 months
Collaborative working with Central Government, districts and boroughs			
Urge Government to further reduce the costs of electric vehicle purchase and ownership compared to petrol and diesel vehicles	Encourage	All authorities Cllrs / MPs / Chief Execs	Ongoing
A co-ordinating role for the County	Encourage	All authorities Cllrs / MPs / Chief Execs	Ongoing
Establish a Norfolk EV forum	Encourage	All authorities Cllrs / MPs / Chief Execs	Ongoing



Recommendations

Action Plan

Recommendation / action	Council role	Action by	Recommended timescale
Update EV parking and design standards	Council role	Action by	Recommended timescale
Adopt EV parking standards to ensure every new home with a parking space has an EV charge point	Require	NCC Highways & Development Control leads with support from all authorities	Within 12 months
Adopt EV parking standards for new workplaces	Require	NCC Highways & Development Control leads with support from all authorities	Within 12 months
Adopt EV parking standards for other new non-residential developments	Require	NCC Highways & Development Control leads with support from all authorities	Within 12 months
Adopt design standards for on-street chargers to enable and manage future private sector roll-out of charge points	Require / Encourage	NCC Highways & Development Control leads with support from all authorities	Within 3 years
Provide guidance for the use of cable covers and covered ducts by residents	Enable	NCC Highways & Development Control leads with support from all authorities	Within 12 months
Explore wider measures	Council role	Action by	Recommended timescale
Explore additional local incentives to increase EV uptake beyond additional charge point infrastructure	Explore	NCC Transport Lead with support from all authorities	Ongoing
Identify opportunities to support research and innovation in Electric Vehicles in Norfolk	Enable	All authorities Transport and Economic teams	Ongoing



Recommendations

Action Plan

Recommendation / action	Council role	Action by	Recommended timescale
Promotional activities and awareness raising	Council role	Action by	Recommended timescale
For existing households, promote the OZEV Electric Vehicle Homecharge Scheme	Encourage	All authorities Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Promote home charging share schemes such as Zap-Home	Encourage	All authorities Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
For existing workplaces, promote the OZEV Workplace Charging Scheme	Encourage	All authorities Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Promote the Energy Saving Trust fleet reviews	Encourage	All authorities Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Promote workplace charging share schemes such as Zap-Work	Encourage	All authorities Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Encourage stakeholders to deliver EV charge points at other key destinations including supermarkets and train stations	Encourage	All authorities Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Engage with tourist destinations and explore tourism opportunities associated with EV	Encourage	All authorities Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing

Table of contents

<u>Introduction</u>	<u>Section 1 Baselining and research</u>	<u>Section 2 Policy context and stakeholder engagement</u>
<u>Section 3 Forecasting Demand and Charging Requirements</u>	<u>Section 4 Recommendations</u>	<u>Appendix A Recommended Parking Standards</u>

Table 1: Definition of key terms

Abbreviation	Definition
AC	Alternating Current - an AC charger uses an onboard charger in the vehicle that converts power before feeding into the vehicle's battery.
BEV	Battery Electric Vehicle - fully powered by electricity and has to be plugged in to charge.
CCS	Combined Charging System - a standard for charging electric vehicles. It uses the Combo 1 and Combo 2 connectors to provide power at up to 350 kilowatts. These two connectors are extensions of the Type 1 and Type 2 connectors, with two additional direct current (DC) contacts to allow high-power DC fast charging.
CHAdeMO	CHAdeMO is a standard for rapid charging, principally used by Japanese manufactured vehicles.
CPO	Charge Point Operator - a provider and operator of EVCPs.
DC	Direct Current - a DC charger has the converter inside the charger itself, meaning it can feed power directly to the vehicle's battery.
DfT	Department for Transport
DNO	Distribution Network Operator - a company that owns and operates the infrastructure that connects properties to the electricity transmission network.
EV	Electric Vehicle - includes any vehicle that uses electricity for propulsion including PHEVs and BEVs.
EVCP	Electric Vehicle Charging Point - a location where EVs can plug-in and charge.
kW	Kilowatt - a kilowatt is 1,000 watts, which is a measure of power.
LEP	Local Enterprise Partnership
MVA	Megavolt Amperes - a unit used for measuring the estimated available capacity at electric substations.
NCC	Norfolk County Council
OZEV	Office for Zero Emission Vehicles - a Zero Emission Vehicles (OZEV).
PHEV	Plug-in Hybrid Electric Vehicle - a vehicle that can be plugged in and charged but also has a petrol engine.
TRO	Traffic Regulation Order - enables local highway authorities to place temporary, experimental or permanent restrictions on traffic within their areas including parking restrictions.
ULEV	Ultra-Low Emission Vehicle - any vehicle that emits less than 75g of CO ₂ /km from the tailpipe.

Charge point types

There are a range of EVCP technologies which are appropriate for different users and use cases. This section provides a review of existing charge point technologies, including charging types, rates and layouts/format, alongside a review of emerging charge point technologies.

The range of charging solutions for EVs is evolving rapidly and reflects the ongoing technological developments and increasing investment in this market, as well as the range of different users and use cases for charging.

The suitability of a particular charging technology is dependent on a wide range of factors, including the use case of the individual, their vehicle type, the type of location and the available power supply.

Most EVs are supplied with two cables for slow and fast AC charging; one with a three-pin plug, and the other with a Type 2 connector. These cables enable an EV to connect to most standard Type 2 sockets.

In the case of rapid chargers, the cable is tethered to the unit, much like a petrol pump, and the user selects the applicable connector for their vehicle. There are three types of DC rapid charger connectors on the market in the UK: CHAdeMO, CCS and Tesla.

The adjacent summarises the different charge point types and provides information on the rates of charge, socket/plug type and charging duration.

Charge point types (images)	Charge point types	Maximum Power Output (Kilowatts)	Current/Supply Type	Input Voltage (Volts)	Maximum Current (Amps)	Charging Mode	Socket/Plugs	Charging duration (40kW battery)
	Domestic Socket	2.3-3kW	AC - Single Phase	230	10-13A	1/2	Type 1/2	Approx. 17 hours
	Slow	3.7kW	AC - Single Phase	230	16A	2/3	Type 1/2	Approx. 11 hours
	Standard	7.4kW	AC - Single Phase	230	32A	2/3	Type 1/2	Approx. 6 hours
	Fast	11-22kW	AC - Three Phase	400	16-32A per phase	3	Type 2	Approx. 2-4 hours
	Rapid	43kW	AC - Three Phase	400	60A per phase	3	Type 2	Approx. 55 mins
	Rapid	20-50kW	DC	400	100A	4	CHAdeMO / CCS	Approx. 40 mins
	Tesla Super Charger	75-250kW	DC	Up to 400	Up to 800A	4	Tesla adapted Type 2	Approx. 10-20 mins
	Ultra-Rapid	Up to 350kW	DC	Up to 920	Up to 500A	4	CCS / Tesla adapted Type 2	Approx. 7-16 mins

Introduction

Study background, objectives and approach

Introduction

Background

Introduction to the study

To help support decarbonisation of the transport system, Norfolk County Council (NCC) is interested in identifying infrastructure related barriers that may slow the public's transition to electric vehicles (EVs). As such, NCC commissioned WSP to undertake a study to identify measures NCC and its constituent district councils can, or should, be taking to overcome barriers to electric vehicle charge point (EVCP) rollout.

The key conclusions which can be drawn from the results of the study are:

- A pipeline of EVCPs with a projected number for delivery should be created
- On-street EVCP parking can be addressed by considering hubs and employment sites
- Acceleration between 2025-2030 needed to be prepared for the impending ICE sales ban
- Rural areas have a higher propensity to switch to EVs, as well as higher car ownership, and more off-street parking
- The private sector will likely deliver in Norwich, Great Yarmouth, King's Lynn & West Norfolk, and along the SRN, therefore points of intervention needed in rural areas

Electric Vehicles

Sales of EVs and ultra-low emission vehicles (ULEVs) are growing rapidly, and there is increasing consensus amongst the motor industry that EVs represent the future of motorised transport. This is recognised by both the public and private sectors, who are providing significant investment to introduce infrastructure to support the electrification of transport.

EVs have a significant role to play in meeting targets to reduce greenhouse gases, through a reduction in carbon dioxide emissions. Locally, they also have an important role in removing harmful local air pollution, in the form of nitrogen dioxide, from our streets.

As part of new plans for a green industrial revolution, the Government has announced that by 2030, all new sales of cars and vans will be ultra-low emission with a 2035 deadline for some hybrids.

Whilst the EV sector has matured considerably over the past few years, it remains an emerging and fast evolving marketplace. It has long been recognised that key barriers to a transition to EVs are the lack of a comprehensive charging network, and the higher purchase price of the vehicles. Local authorities have a key role to play in helping to overcome these barriers, and in turn meeting their own objectives for improving local air quality and reducing greenhouse gas emissions. Local authorities have a variety of mechanisms for influencing EV uptake; as custodians of the local road network, the authors of policy, as planning authorities, land owners and fleet owners.

Electric Vehicle Charge Points

The charging ecosystem is still evolving, with a range of charging technologies, formats and business models emerging. Their suitability for a particular user or area is subject to a wide range of factors, some of which include: population demographics and density, land use, commuting patterns, the existing charging network, availability of off-street parking, and scale/type of planned development. As such the local context is key in shaping this charging ecosystem.

The evolution of the EVCP ecosystem requires intervention from the public sector, in part to secure access to local authority managed roads and parking. **There is also a role for the public sector in stimulating growth, and ensuring latent demand is not stifled by a lack of access to charging infrastructure.** The emerging low emissions economy also presents opportunities for cost savings and potential new revenue streams.



Background Objectives

Study objectives

The objectives of the study are as follows:

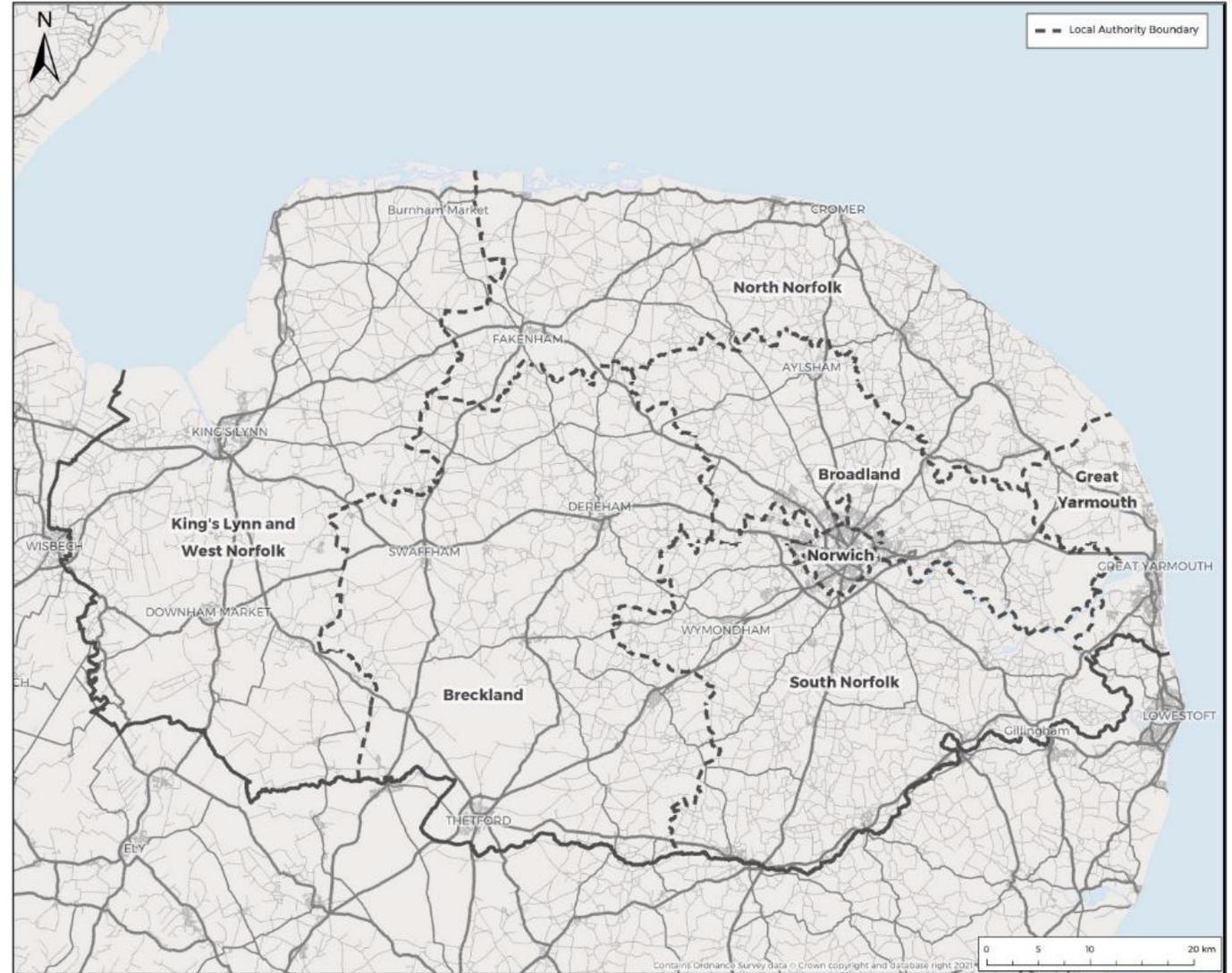
1. Identify the baseline uptake of EVs across Norfolk and the provision of EVCPs. A map of the study area is shown in **Figure 1**
2. Engage with relevant stakeholders
3. Forecast EV uptake across Norfolk, to inform EVCP requirements up to 2030
4. Identify infrastructure-related barriers to provision of EVCPs
5. Provide guidance related to operational and commercial models for EVCPs, as well as funding opportunities.
6. Provide recommendations to overcome any identified barriers, with a focus on measures that NCC and its delivery partners could take to overcome the barriers and enable them to establish an EV strategy.

Purpose of this document

This document serves as the main output of the study, detailing the methodology undertaken and outputs of the analysis.

The document concludes with recommendations for NCC and the district councils.

Figure 1: Study Area (Norfolk)



Overview

The study took a four-stage approach, starting with baselining and research, then analysis of policy context with stakeholder engagement, forecasting demand and charging requirements, and finally the reporting and recommendations. This section of the report details each of the stages, with further detail provided throughout the report.



Stage 1: Baselining & research

Existing charge points – Data on existing charge points in the NCC study area was collated – drawing on publicly available information including from the National Chargepoint Registry (NCR) and ZapMap, supplemented by information provided by the NCC.

Current EV registrations – Data was gathered on current EV ownership in the study area using Department for Transport (DfT) data.

Council owned car parks – Data was gathered on public car parks across the study area, consulting with officers to secure datasets.

On-street parking – The proportion of residential parking reliant on on-street parking was identified by location across the study area.

Review charge point technologies – A review of the latest EVCP technology was undertaken which included types, charging rates supported, future charge point technologies and typical installation and operating costs.

Future proofing – Future Ready thinking was applied to our assessments, including wider trends in future mobility.

Grid Constraints Mapping – Electrical capacity availability estimates were developed at primary substation level across the County.

Stage 2: Policy context & stakeholder engagement

A review of relevant policy and plans was undertaken, at a local and national scale.

Consultation with technical stakeholders – Internal NCC technical stakeholders were consulted to gain an understanding for their requirements and preferences in terms of EV charging provision.

Review issues identified – Key recurring concerns have been drawn out, as well as any stated preferences in terms of EVCP deployments.

Stage 3: Forecasting demand & charging requirements

EV uptake forecasting – A range of forecasts were developed using WSP's EV:Ready tool.

Publicly accessible EVCP network requirements – The EV uptake forecasts were used to identify requirements for publicly accessible EVCP provision.

Delivery models and funding opportunities – A review of the different delivery models for rolling out EVCPs was undertaken.

Soft market engagement with CPOs/ investors – Soft market testing was undertaken with suppliers.

Gap Analysis – Potential gaps in EVCP provision were identified based on the analysis undertaken.

Identify measures for delivering or enabling works to eliminate gaps – A review was completed of options that address the gaps in EVCP provision.

Stage 4: Recommendations & reporting

EV Strategy and Recommendations – This report includes a summary of the analysis undertaken, findings and recommendations. The report concludes with recommendations.

Action Plan – In support of the strategy an action plan that outlines measures to support and enable EV uptake in Norfolk has been prepared.

Next Steps – A series of recommended next steps have been identified for consideration to progress the scheme.

Section 1

Baselining and research



Baselining and research

Current EV registrations

As of 2020 Q3, across Norfolk a total of **2,631 EVs were registered**.

Of the EVs in Norfolk as of 2020 Q3, 1,461 (56%) are Battery Electric Vehicles (BEVs), 1,129 (43%) are Plug-in Hybrid Electric Vehicles (PHEVs), and 2% are unknown. The largest majority of registrations were for EVs in South Norfolk, at 22%, followed by Broadland and Breckland at 15%-17%, and Norwich, North Norfolk, and King's Lynn & West Norfolk at 13%-14%. Great Yarmouth has the lowest share of EV registrations at 5%, as shown in **Table 2**.

Table 2: EV ownership in Norfolk, as of 2020 Q3

Authority	BEV	PHEV	Unknown	Total	%
Breckland	214	172	3	389	15%
Broadland	243	203	0	446	17%
Great Yarmouth	66	68	1	135	5%
King's Lynn & West Norfolk	188	188	6	382	14%
North Norfolk	225	137	3	365	14%
Norwich	189	125	22	336	13%
South Norfolk	334	236	6	576	22%
Norfolk	1,461	1,129	41	2,631	100%

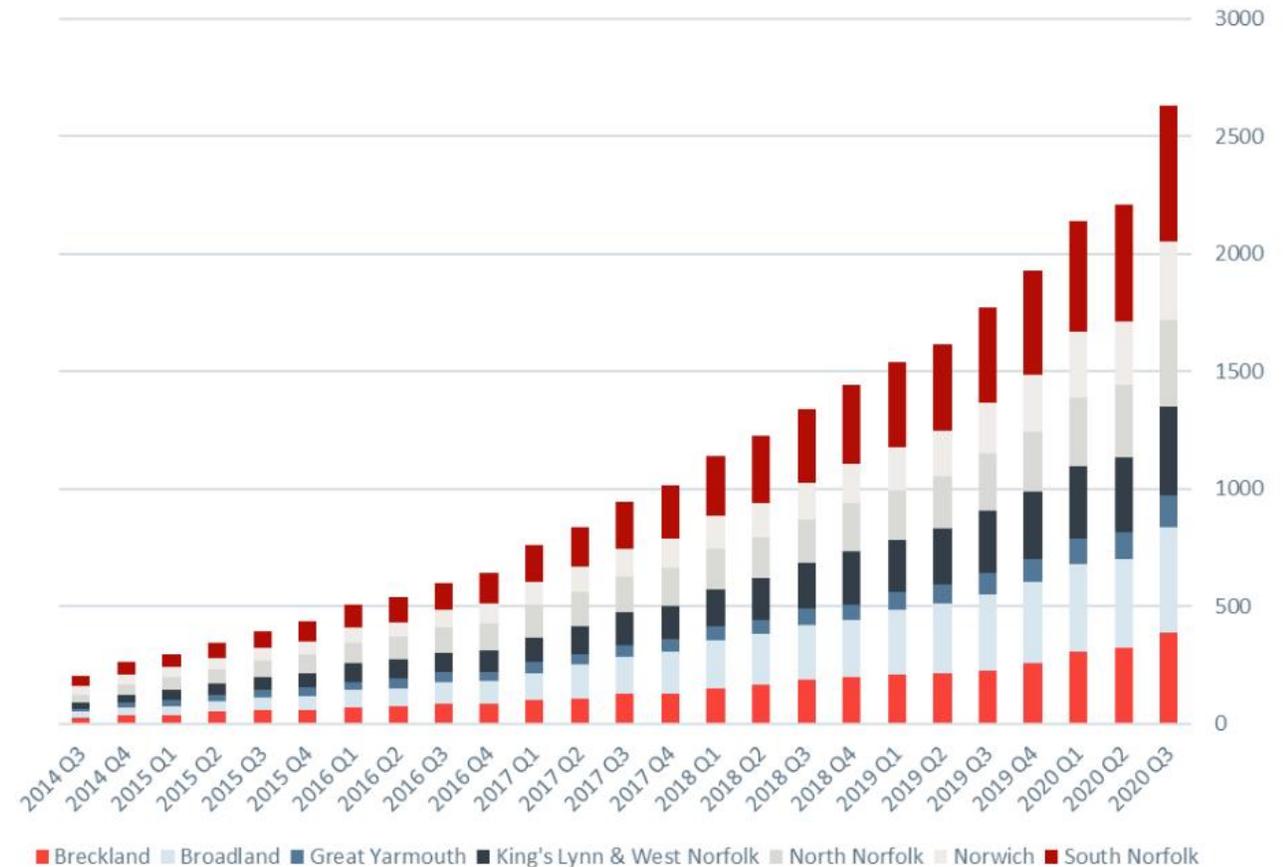
Source: DfT, Vehicle Licensing Statistics (Table VEH0132) January 2021

By comparison, a total of **373,223 EVs** were registered in the UK by 2020 Q3, of which 174,423 (47%) were BEVs, 191,626 (51%) were PHEVs, and 7,174 (2%) were unknown.

Figure 2 shows increasing EV ownership in Norfolk over time. Ownership has increased significantly, from 204 vehicles in 2014 (Q3) to 2,631 in 2020 Q3, which equates to an increase of nearly 13 times.

Table 3 shows the percentage change in EV ownership incrementally for Norfolk and the UK. It reveals that between 2014 (Q3) and 2020 (Q3) there was a 16 times increase in EV vehicles in the UK, which is slightly ahead of the rate in Norfolk (x13).

Figure 2: EV ownership in Norfolk since 2014 (Q3)



DfT, Vehicle Licensing Statistics (Table VEH0132) <https://www.gov.uk/government/statistical-data-sets/all-vehicles-veh01>

Table 3: EV ownership and percentage change in Norfolk and the UK

Region	Statistic	2014 Q3	2015 Q3	2016 Q3	2017 Q3	2018 Q3	2019 Q3	2020 Q3
UK	EV Ownership	23,759	48,493	85,100	130,224	183,443	245,139	373,223
UK	% Change	-	104%	75%	53%	41%	34%	52%
Norfolk	EV Ownership	204	395	600	945	1,342	1,774	2,631
Norfolk	% Change	-	94%	52%	58%	42%	32%	48%

Department for Transport (2020) Vehicle Licensing Statistics (Table VEH0132) Available at: <https://www.gov.uk/government/statistical-data-sets/all-vehicles-veh01>



Baselining and research

Current EV registrations

Another measure of uptake is to compare the proportion of EVs to the total vehicle fleet. At the end of 2019, the UK average was 0.675%, with Norfolk sitting notably lower at 0.316%, as shown in **Figure 3**.

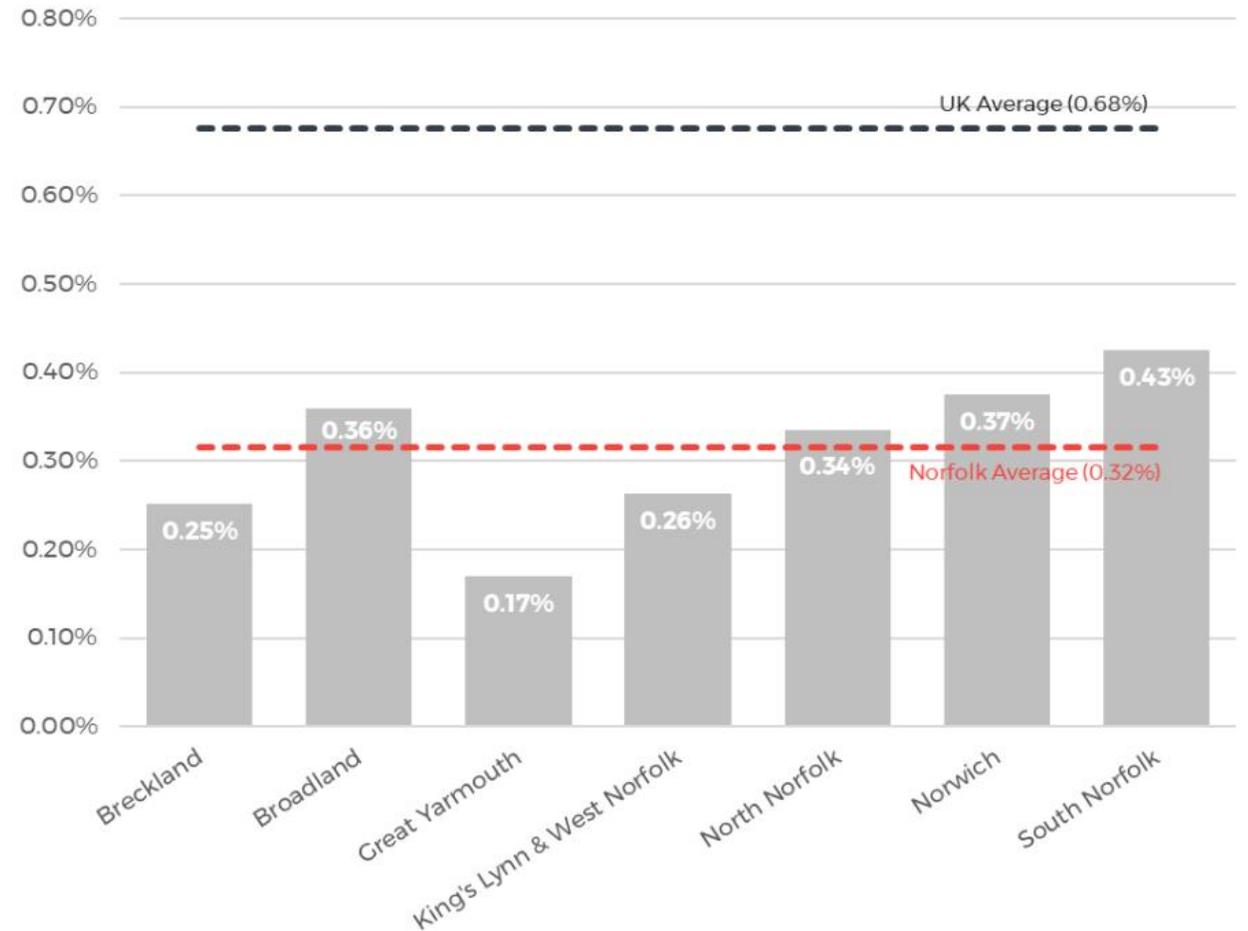
When comparing the local authorities to the county, the following districts are higher than the Norfolk average:

- Broadland (0.359%)
- North Norfolk (0.336%)
- Norwich (0.375%)
- South Norfolk (0.425%)

The remaining local authorities have lower than average proportions of EVs when compared to the vehicle fleet:

- Breckland (0.251%)
- Great Yarmouth (0.169)
- King's Lynn & West Norfolk (0.263%)

Figure 3: EV ownership in Norfolk as a proportion total vehicle fleet (2019 Q4)



Department for Transport (2020) Vehicle Licencing Statistics (Table VEH0132) and VEH105) Available at: <https://www.gov.uk/government/statistical-data-sets/all-vehicles-veh01>

Baselining and research

Existing EVCPs

EVCPs in Norfolk

Across Norfolk there are **198 publicly accessible EVCPs**, including **33 rapid EVCPs**, which is shown in **Table 4**.

Table 4: Charge points across Norfolk

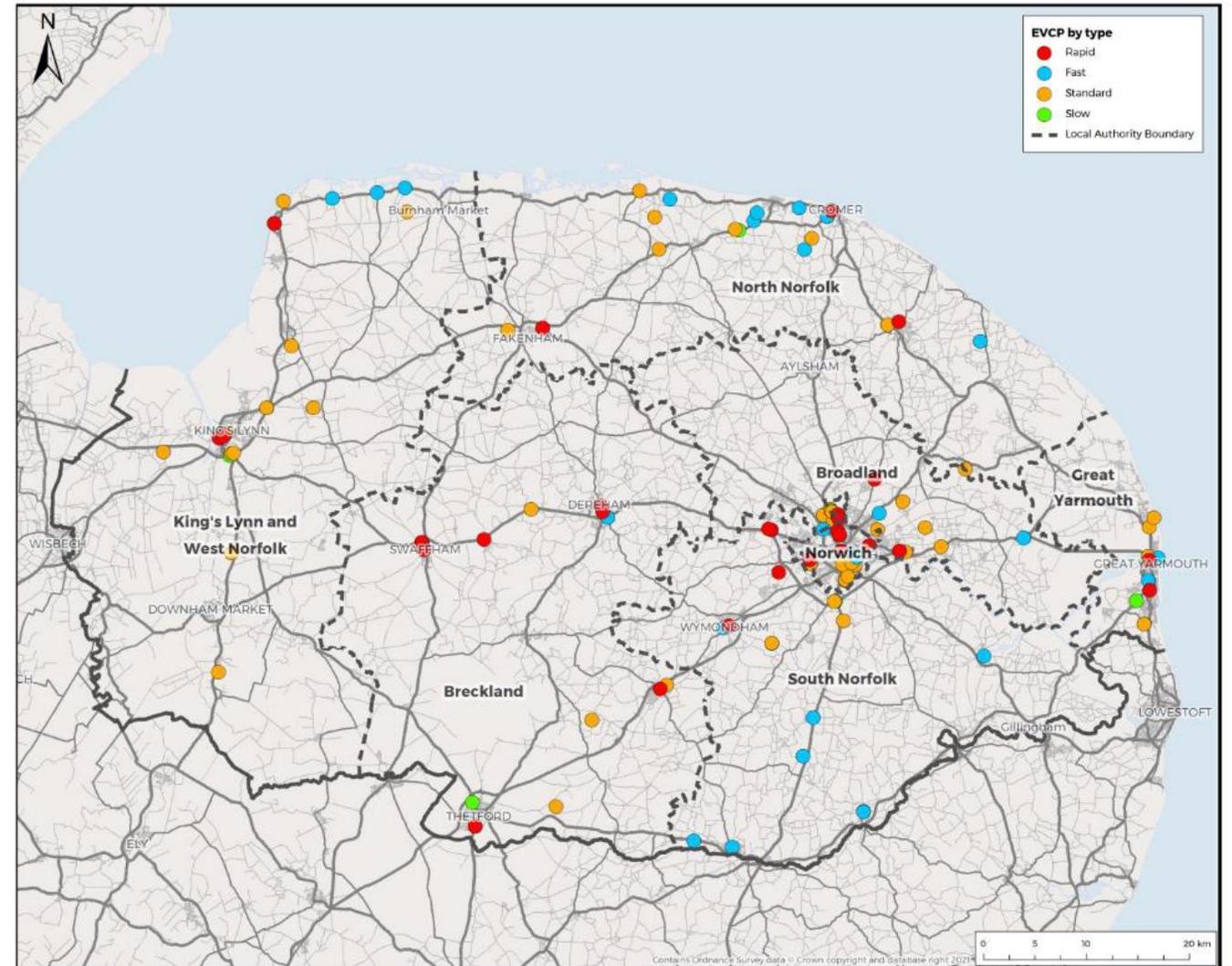
LA	Slow	Standard	Fast	Rapid	Total
Breckland	1	5	4	9	19
Broadland	0	6	4	3	13
Great Yarmouth	2	6	4	2	14
KL & WN	3	11	3	10	27
North Norfolk	1	9	12	5	27
Norwich	7	24	3	9	43
South Norfolk	3	3	9	6	21
Total	17	64	39	44	164

Source: DfT, Electric Vehicle Charging Device Statistics (January 2021)

As of March 2021, there were 38,522 charge point connectors, in 22,231 devices, at 14,167 locations across the UK. The total number of charge points increased from just over 23,000 in June 2019 to more than 38,000 in March 2021. Of the 38,522 charge point connectors, 9,721 of these are rapid. To see charge point locations visit <https://www.zap-map.com/live/>.

The number of EVCPs per 100km of road in the UK has increased from 42 in 2011 to 570 in 2019 (Source: European Alternative Fuels Observatory). Whilst there has been a substantial increase in recent years, the Committee on Climate Change argues this figure will need to increase further to match the rising number of EV's on the road.

Figure 4: Existing EVCPs in Norfolk



Source: ZapMap (2020) Available at: (<https://www.zap-map.com/live/>)

Baselining and research

Existing EVCPs

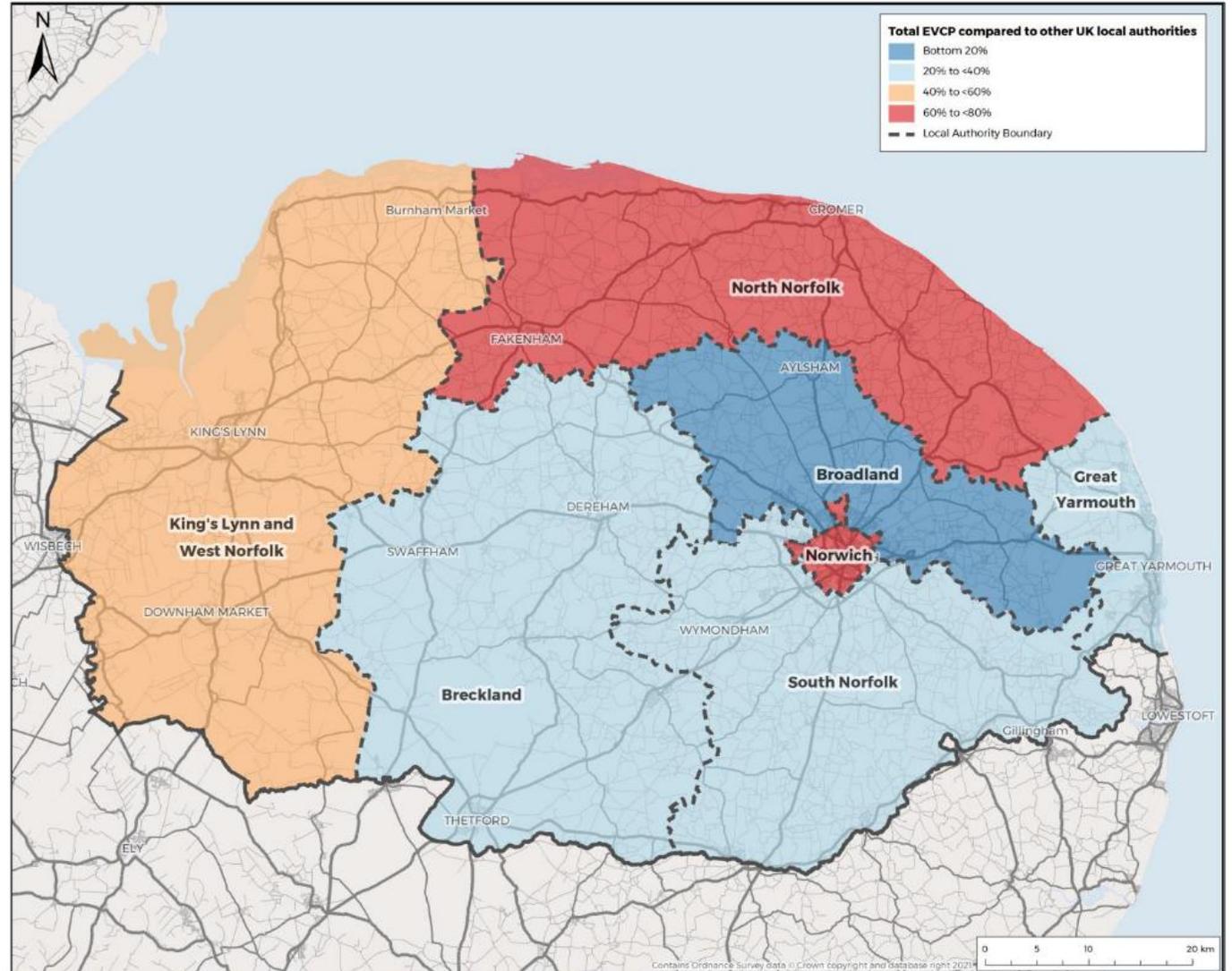
Number of EVCPs compared to other UK local authorities

Using data provided by the DfT, an analysis of EVCP provision in Norfolk, compared to other local authority areas in the UK, has been undertaken, (**Figure 5**). The results of this analysis show that EVCP provision varies throughout the county.

North Norfolk and Norwich are both within the highest 40% of local authorities when examining the total number of EVCPs, and King's Lynn & West Norfolk is in the top 60%. The remainder of the county sits in the bottom 40% of UK local authorities when it comes to total EVCP provision, with Broadland falling into the bottom 20% of EVCP provision.

This data may exemplify the need for greater EVCP provision across the county, as four out of seven of Norfolk's local authority areas fall into the lowest 40% of UK authorities.

Figure 5: Number of EVCPs compared to other UK local authorities



Source: Department for Transport (2020) Electric vehicle charging devices by local authority. Available at: <http://maps.dft.gov.uk/ev-charging-map>

Baselining and research

Existing EVCPs

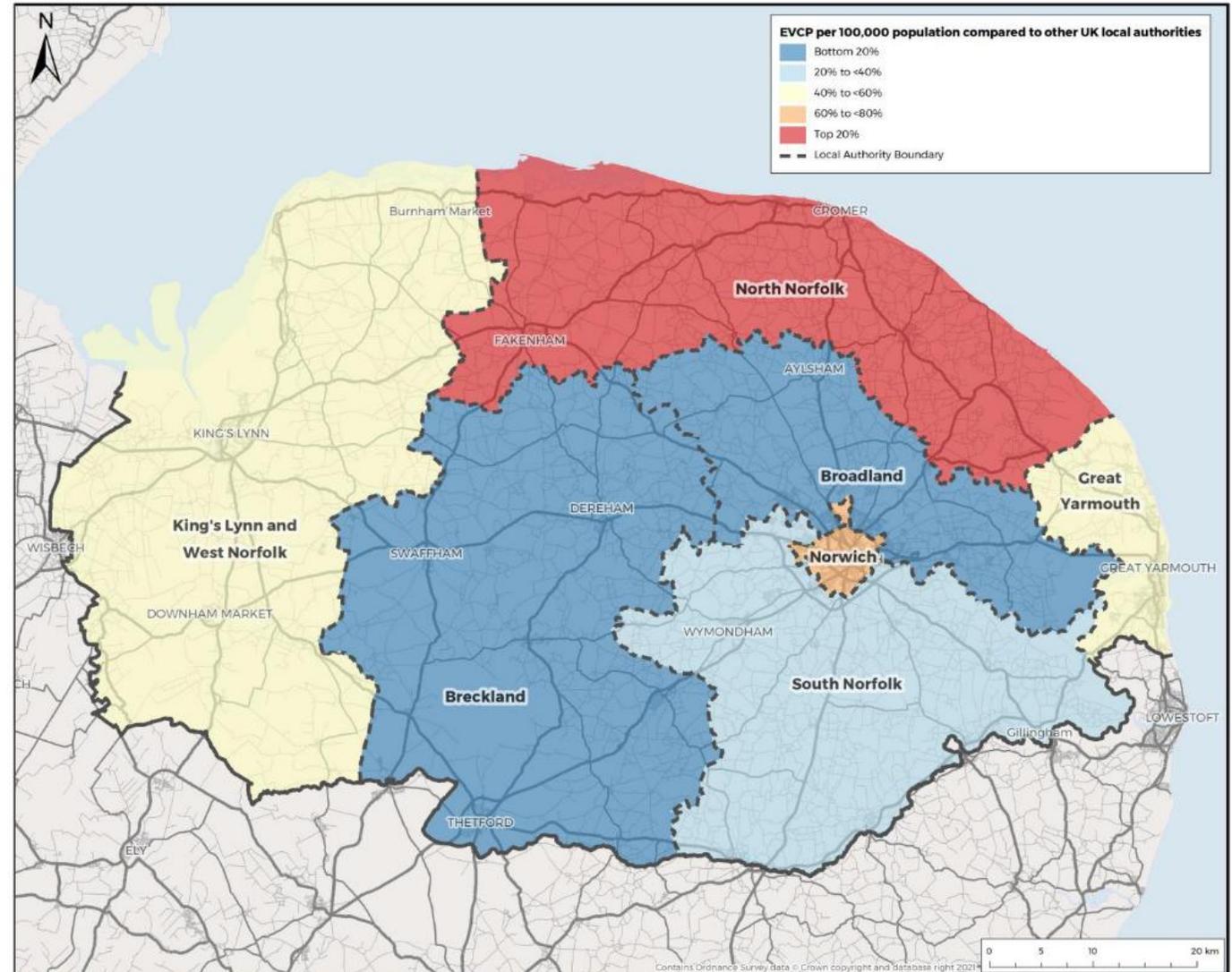
EVCPs per 100,00 population compared to other UK local authorities

When examining the number of EVCPs per 100,000 population, North Norfolk performs the best, falling within the top 20% of UK local authorities. Norwich also features highly, sitting within the top 40%. King's Lynn & West Norfolk and Great Yarmouth are in the top 60% of UK authorities.

On the other hand, South Norfolk is in the lowest 40% of UK authorities, and Broadland and Breckland the bottom 20%, as shown in **Figure 6**.

The data for EVCPs per 100,000 population is more varied than the data relating to the total number of EVCPs, with local authorities now sitting within the top and bottom 20%, whereas previously they were less dispersed. This highlights the differences in population across the county and highlights the rural nature of the area.

Figure 6: EVCPs per 100,00 population compared to other UK local authorities



Source: Department for Transport (2020) Electric vehicle charging devices by local authority. Available at: <http://maps.dft.gov.uk/ev-charging-map>

Baselining and research

Existing EVCPs

Total rapid EVCPs compared to other UK local authorities

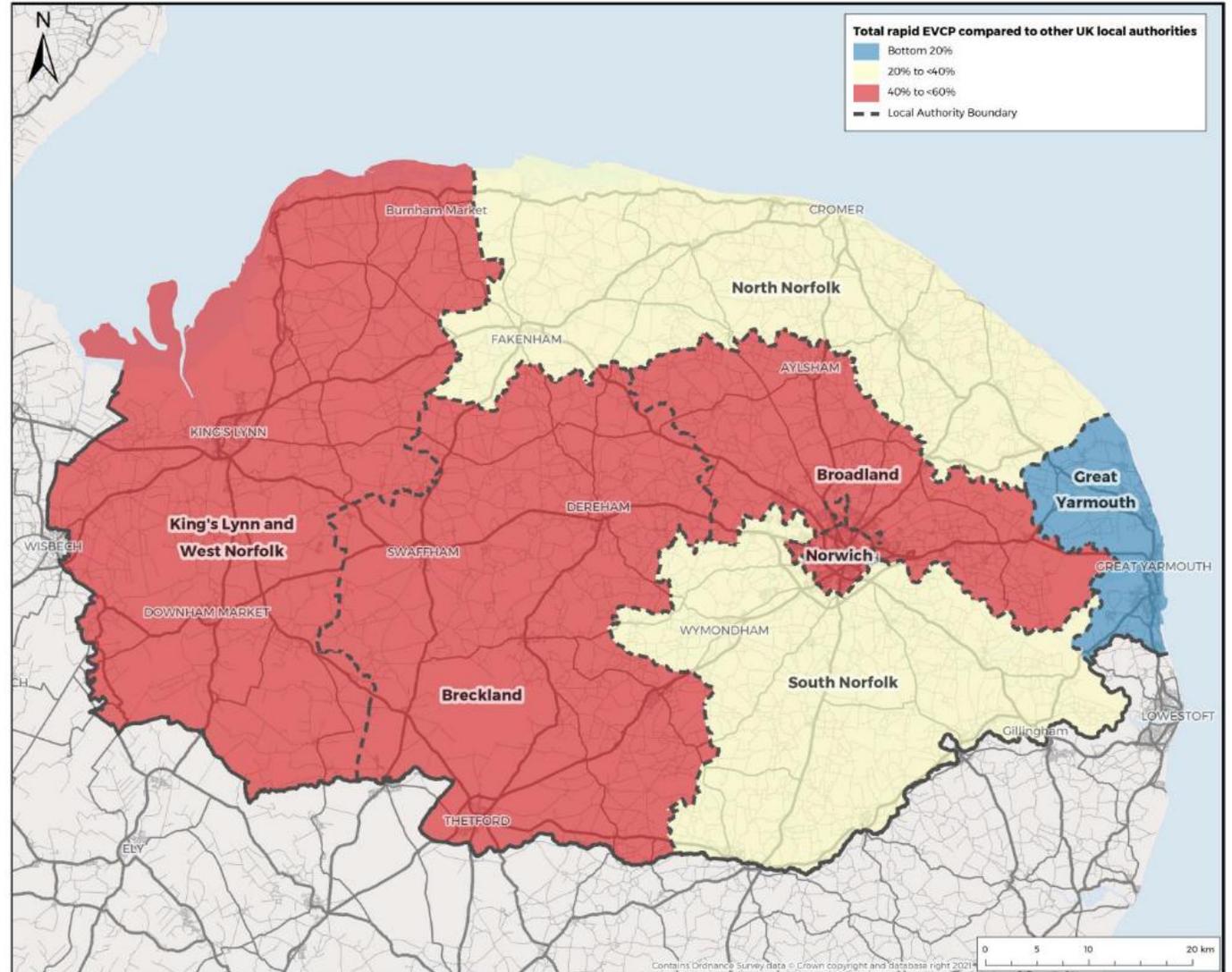
Rapid EVCP provision in Norfolk is at the middle and lower levels compared to other UK local authorities, as the majority of the county sits within the 40% to <60% group. North Norfolk and South Norfolk perform slightly worse when it comes to Rapid EVCPs, falling in the bottom 20 to <40% group. No district falls within the top 40% of rapid EVCP provision, and Great Yarmouth falls within the bottom 20% of UK local authorities.

Overall, the data shows a varied picture across Norfolk, with many local authorities performing well in some measures of EVCP provision, but less so in others. South Norfolk is the only local authority to consistently be in the lowest 40%, whereas Norwich and North Norfolk generally sit within the higher categories. This data highlights the differences in EVCP provision within Norfolk. This lack of consistency across the county may result in a poor user experience, limiting uptake of EVs.

Table 5: Norfolk EVCPs compared to other local authorities.

Authority	Total EVCPs	EVCPs per 100,000	Rapid EVCPs
Breckland	20<40%	Bottom 20%	40<60%
Broadland	Bottom 20%	Bottom 20%	40<60%
Great Yarmouth	20<40%	40<60%	Bottom 20%
King's Lynn & West Norfolk	40<60%	40<60%	40<60%
North Norfolk	60<80%	60<80%	20<40%
Norwich	60<80%	60<80%	40<60%
South Norfolk	20<40%	20<40%	20<40%

Figure 7: Total rapid EVCPs compared to other UK local authorities



Source: Department for Transport (2020) Electric vehicle charging devices by local authority. Available at: <http://maps.dft.gov.uk/ev-charging-map>

Baselining and research

Car Parks

Council Owned Car Parks

To help identify potential locations for publicly accessible EVCPs, data was collated on the location of council owned car parks, as well as park & ride sites. Data was provided by NCC's constituent district councils and NPAs, and supplemented through internet research where required. The data collated was limited to council owned car parks (rather than wider council land assets). The council owned car parks have been presented in **Figure 8**.

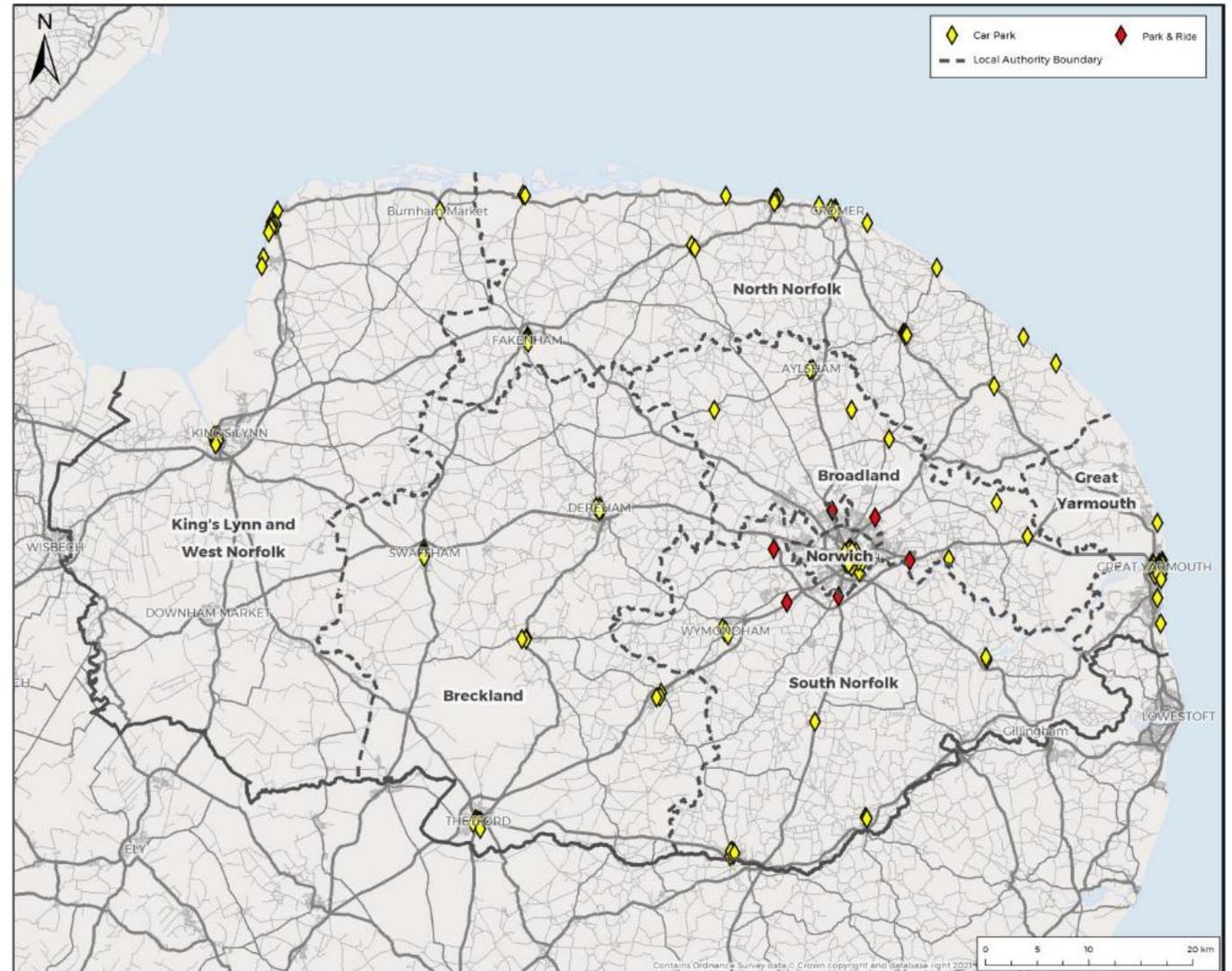
Table 6 shows how the car parks are split across each district (does not include park & ride sites).

Table 6: Car Parks per district (excluding park & ride)

Authority	Car Parks	Spaces
Breckland	27	2,040
Broadland	8	310
Great Yarmouth	20	1,952
King's Lynn & West Norfolk	28	6,013
North Norfolk	28	5,183
Norwich	36	9,246
South Norfolk	17	987
Total	164	25,731

Green number plates are to be introduced from December 2020 to increase awareness of EVs but to also enable local authorities to bring in local incentives, i.e. cheaper parking, exemption from zero-emission zones.

Figure 8: Map of council owned car parks



Source: Data provided by NCC constituent district authorities and NPAs, and supplemented from authority websites as required.



Baselining and research

Charge point technologies

Overview

There are a range of EVCP technologies which are appropriate for different users and use cases. This section provides a review of existing charge point technologies, including charging types, rates and layouts/format, alongside a review of emerging charge point technologies.

Charge point types

The range of charging solutions for EVs is evolving rapidly and reflects the ongoing technological developments and increasing investment in this market, as well as the range of different users and use cases for charging.

The suitability of a particular charging technology is dependent on a wide range of factors, including the use case of the individual, their vehicle type, the type of location and the available power supply.

Most EVs are supplied with two cables for slow and fast AC charging; one with a three-pin plug, and the other with a Type 2 connector. These cables enable an EV to connect to most standard Type 2 sockets.

In the case of rapid chargers, the cable is tethered to the unit, much like a petrol pump, and the user selects the applicable connector for their vehicle. There are three types of DC rapid charger connectors on the market in the UK: CHAdeMO, CCS and Tesla.

Table 7 summarises the different charge point types and provides information on the rates of charge, socket/plug type and charging duration.

Table 7: Summary of the different charge point types

Charge point types (images)	Charge point types	Maximum Power Output (Kilowatts)	Current/Supply Type	Input Voltage (Volts)	Maximum Current (Amps)	Charging Mode	Socket/Plugs	Charging duration (40kW battery)
	Domestic Socket	2.3-3kW	AC - Single Phase	230	10-13A	1/2	Type 1/2	Approx. 17 hours
	Slow	3.7kW	AC - Single Phase	230	16A	2/3	Type 1/2	Approx. 11 hours
	Standard	7.4kW	AC - Single Phase	230	32A	2/3	Type 1/2	Approx. 6 hours
	Fast	11-22kW	AC - Three Phase	400	16-32A per phase	3	Type 2	Approx. 2-4 hours
	Rapid	43kW	AC - Three Phase	400	60A per phase	3	Type 2	Approx. 55 mins
	Rapid	20-50kW	DC	400	100A	4	CHAdeMO / CCS	Approx. 40 mins
	Tesla Super Charger	75-250kW	DC	Up to 400	Up to 800A	4	Tesla adapted Type 2	Approx. 10-20 mins
	Ultra-Rapid	Up to 350kW	DC	Up to 920	Up to 500A	4	CCS / Tesla adapted Type 2	Approx. 7-16 mins



Baselining and research

Charge point technologies

Vehicle / Charger Compatibility

It is important to note that different makes and models of EVs support different combinations of charging speeds and charging connectors / plugs.

The earlier models are more typically only able to support rapid DC charge rates of up to 50kW. Until recently, few EVs were able to support ultra rapid charging rates, but this is now becoming a more standard feature of the new models coming to market, though few can currently charge at the top rate of 350kW.

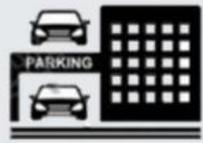
7.4kW chargers are now the de-facto standard for AC charging. AC Fast chargers (11-22kW) are less common and supported by fewer vehicles, but these include some of the top selling vehicles, including the Renault Zoe, Tesla Model 3, BMW i3 and LEVC electric black cab

Charging Locations

There are four broad types of charge point sites, as summarised in **Table 8**.

The majority of charging currently takes place at home, though this is expected to evolve slightly over time (see **Section 3**). Within this study, 'destination charging' and 'intermediate charging' are the main focus of interest, as these are publicly accessible charge points, where there is potentially a greater role for Local Authorities.

Table 8: Summary of the different Charging Location Types

Recharging Location Types (Image)	Recharging Location Types	Description	Approximate Share of Charging Demand (kW)
	Home-based Charging	Home based charging includes drive-ways, garages and off-street residents' parking, and are assumed to be private and not accessible to the general public. The vast majority of charging is currently home based, with overnight charging at your home typically being the lowest cost and most convenient option.	75-80%
	Workplace Charging	Workplace charging where available is a convenient option for employees, and well suited to the long dwell times characteristic of workplace parking, as well as the availability of private parking. Increasingly fleet vehicles are switching to EVs, which are often charged at the workplace..	10-15%
	Destination Charging	Destination charging sites are publicly accessible sites where the driver has chosen to go to a site for other purposes, i.e. somewhere they would already have parked, such as a supermarket, railway stations, retail, leisure, hotels etc. On-street parking can also be considered as a publicly accessible destination, or more accurately as origin charging.	5-10%
	Intermediate Charging	Intermediate charging describes locations such as public charge points at motorway service stations and petrol stations. Typically used for longer journeys, or where a quick turnaround charge is required.	5%

"Publicly Accessible Chargers"

References: EV Charging Behaviour Study, National Grid, Element Energy (2019). Quantifying the electric vehicle charging infrastructure gap in the United Kingdom, ICCT (2020).



Baselining and research

Charge point technologies

Charge Point Types by Land Use

The key determinants of the charging requirements for any given site are often the typical dwell times of the vehicle at the site, and the requirements of the driver for their use of the vehicle.

In most cases, vehicles are parked for long durations at homes or workplaces, therefore vehicles can be charged at lower power over a longer period, which is beneficial as it lessens the peak loading requirements for the development, and enables more charge points to be installed.

Table 9: Typical User/Charge Point Type

Land use Type	Land Use Classification	Typical Use Case	Typical Dwell Time	Typical Charging Requirements	Typical EVCP Provision
Residential	Class C3 - dwelling houses	Resident	Long dwell time (over 3 hrs)	Slower speeds - typically overnight charging	Slow / Standard Charger
Offices/ Industrial (with staff car parks)	Class B - further business and industrial activities	Employee	Long dwell time (over 3 hrs)	Slower speeds - typically occasional daytime charging	Slow / Standard Charger
Offices/ Industrial (with staff car parks)	Class B - further business and industrial activities	Visitor	Medium dwell time (1-3 hrs)	Moderate speeds - typically occasional daytime charging	Standard/ Fast Charger
Offices/ Industrial (with staff car parks)	Class B - further business and industrial activities	Fleet	Medium dwell time (1-3 hrs)	Moderate speeds - daytime or overnight charging	Standard/ Fast Charger
Offices/ Industrial (with staff car parks)	Class B - further business and industrial activities	Fleet	Short dwell time (less than hour)	Higher speeds - reflecting short dwell time	Rapid Charger
Shops/ Retail / Leisure / Hotels (with parking)	Class A - shops Class C1 - hotels Class C2 - Residential Class D - non-residential	Customer	Medium dwell time (1-3 hrs)	Moderate speeds - typically occasional daytime charging	Standard/ Fast Charger
Shops/ Retail / Leisure / Hotels (with parking)	Class A - shops Class C1 - hotels Class C2 - Residential Class D - non-residential	Customer	Short dwell time (less than hour)	Higher speeds - reflecting short dwell time	Rapid Charger
Shops/ Retail / Leisure / Hotels (with parking)	Class A - shops Class C1 - hotels Class C2 - Residential Class D - non-residential	Employee	Long dwell time (over 3 hrs)	Slower speeds - typically occasional daytime charging	Slow / Standard Charger
Shops/ Retail / Leisure / Hotels (with parking)	Class A - shops Class C1 - hotels Class C2 - Residential Class D - non-residential	Fleet	Medium dwell time (1-3 hrs)	Moderate speeds - daytime or overnight charging	Standard/ Fast Charger
Shops/ Retail / Leisure / Hotels (with parking)	Class A - shops Class C1 - hotels Class C2 - Residential Class D - non-residential	Fleet	Short dwell time (less than hour)	Higher speeds - reflecting short dwell time	Rapid Charger



Baselining and research

Charge point technologies

Publicly Accessible Charging Formats

Off-street Chargers

Destination chargers in car parks - The majority of publicly accessible charge points are located in town and city centre car parks, and in retail, leisure or hotel car parks. These are typically standard or fast chargers, with the typical length of stay being the determining factor. In shorter stay car parks, rapid chargers are also deployed, sometimes in combination with a number of slow-to-fast chargers. Supermarkets, food and drink outlets, gyms and hotels have proven to be popular sites for destination chargers. Tesco, VW and Pod Point recently committed to installing 2,500 charge points at more than 600 stores across the UK by the end of 2020

Rapid hub - A rapid charging hub would typically describe a cluster of 4 or more DC rapid chargers, functioning in a similar way to a petrol station. They are an intermediate stop on the route to a final destination, or on the way home, as opposed to a destination in their own right, and so are typically located in service stations along the strategic road network. One such hub opened in Milton Keynes in 2019, with 8 50kW rapid chargers. Others are located in retail car parks, or close to amenities/ services, echoing the patterns of deployment for petrol stations. Petrol stations themselves have been slower to install chargers in significant numbers, but this is likely to change over time as the numbers of EVs increase and recharging via ultra-rapid chargers becomes more common, offering a better fit for the petrol station environment.

Residential / Community Charging Hubs - are a grouped hub of slow-to-fast AC chargers, set in a residential or suburban environment within an off-street car park. These sites are typically intended to cater for catchment areas where residents typically park on-street. These hubs ideally work on a booking model, whereby residents can book an overnight charge once or twice a week with confidence, and enable the chargers to be efficiently utilised, whilst minimising the inconvenience of unnecessary trips to plug in. Few examples of such a model are currently in operation, though Dundee's three hubs serve as a good example, following similar principles, though these also include rapid chargers.





Baselining and research

Charge point technologies

Publicly Accessible Charging Formats (continued)

On-street Chargers

Residential - Residential on-street chargers are typically slow to standard AC chargers, positioned at the kerbside and serving a dedicated EV only bay (or potentially two bays), and play an important role in enabling those without access to off-street parking to charge from home, where their vehicle would already have been parked, and has lengthy dwell times, and can charge overnight with lesser impact on the grid.

As well as conventional charge points, innovative solutions such as lamp column chargers are becoming an increasingly common means of delivering on-street residential charging due to their lower costs and reduced street clutter.



Image: On-street residential charging (Source: The Sunday Times)

Destinations – On-street charge points at destinations are typically standard or fast AC chargers, and are more likely to take the form of conventional chargers.



Images: On-Street Destination Charging (Source: London EV Infrastructure Taskforce Delivery Plan; The Islington Citizen)

Baselining and research

Charge point technologies

Enabling on-street charging from home

A potential alternative for those parking on-street, with no access to public chargers, is for them to trail a cable over the footway and charge from their own domestic charge point or wall socket.

This approach has long been a source of debate. It potentially provides a low tech and cost effective means of enabling residents to charge their vehicle, with the added benefit that operation, maintenance and payment can be managed on a private basis by the individual without necessitating Local Authority intervention. However, concerns regarding safety have been raised.

To help address safety concerns, cables can be covered by safe and secured rubber matting. This approach is regularly used in public spaces and areas of high footfall to cover wires on a temporary/semi-permanent basis. The matting would need to be textured to provide grip in wet conditions, be waterproof, and be brightly coloured to alert partially sighted people to its presence. It would also need to be strong enough to bear vehicle loads should they mount the footway to park. Matting is available which meets this specification.

A limitation however, is that this requires the resident to be able to park immediately outside their home, within reach of the charge point. This may prove difficult in areas of high parking demand, and could become a potential source of contention with neighbours. The bay cannot be restricted to EVs only as it would not qualify as a publicly accessible charge point.

References:

Hampshire County Council (nd) Electric vehicle charging = guidance for residents. Available at: (<https://www.hants.gov.uk/transport/ev-charging-points/ev-charging-guidance>)
 WSP (2015) Electric Vehicle Charging Study. Available at: (<http://content.tfl.gov.uk/ev-charging-options-for-homes-without-offstreet-parking.pdf>)



Cables should be laid flat and not cause a danger or nuisance to the public

Despite attempts to manage safety risk using matting, health and safety concerns regarding trip hazards remain. The matting approach is also not a long-term solution.

When studied for London (which has its own transport legislation distinct from the rest of the UK), it was found there was a potential risk to Local Authority liabilities and exposure to legal claims, as whilst legislation clearly placed liabilities on the individual EV user for charge points on public highways or off-street car parks, domestic charge points were not explicitly covered.

There was also found to be a potential requirement for those trailing the cables to hold public liability cover if the liabilities were definitively placed on the user, which may prove hard to obtain or prohibitively expensive in practice.



Cable protectors should extend the full width of any footway and verge between the property and vehicle

The study noted that these legal concerns are more a case of there being ambiguity, rather than explicitly placing the liabilities with the Local Authority. Most legislation (acts and guidance) indicate that for the most part, widely available external cable protectors should be adequate to conform to the recommendations stipulated.

Most local authorities to date have not taken a specific position on the matter, though Hampshire County Council have published clear guidance on how residents can safely trail a cable over the footway, which is also clear to state that any legal liabilities are the users responsibility, and notes that: *“Currently an EV charging cable does not require a licence. However, as policies are reviewed and updated this may change in the future.....Although no licence is currently required, where a location is not suitable then the County Council has existing powers under Section 162 of the Highways Act to seek to have the cable removed. A license is required for all other temporary placement of cabling on or over the Highway.”*

Baselining and research

Charge point technologies

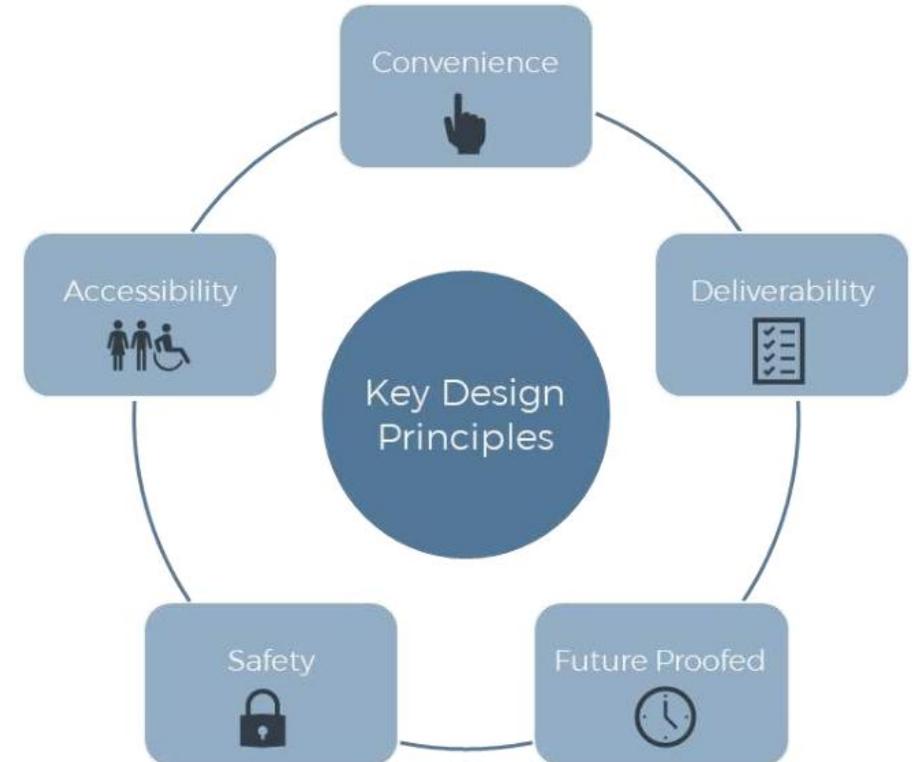
Charge Point Deployment

When planning for charging infrastructure there are number of key design principles to be followed:

- **Accessibility** - there should be sufficient space for a user to access the charge point without negatively impacting on movement around the charge point, and be easy to use for all users, including disabled users.
- **Convenience** - they should be the right type for the typical charging requirements of a user (e.g. accounting for dwell times), easy to use and provide flexible payment options where applicable.
- **Deliverability** - the site must be suitable and enable the chargers to be delivered at an acceptable cost and within reasonable timescales. The power connection is a key determinant to site deliverability.
- **Safety** - the safety of a user and other road users and pedestrians is paramount, and the design should consider vehicular access arrangements, potential trip hazards and proximity to junctions/ crossings.
- **Future Proofed** - it is important that installations are scalable to enable additional chargers to be added at a later date, or charge rates to be increased, in line with demand or changes in operator/ hardware.

Further guidance around EV bays and charge point positioning can be found in the UK Electric Vehicle Supply Equipment Guide, which includes considerations around:

- Socket outlet height - to comply with BS7671:2018, charge point socket outlets must be between 0.5m to 1.5m from the ground.
- Display screen height - recommended to be between 1.2m and 1.4m above ground, to be viewable by a person standing or sitting down.
- Free space around the charging point - for ventilation and cooling purposes, and to allow all doors and covers to be opened for maintenance purposes.
- Impact protection - such as crash barriers or bollards, may be necessary to protect the charger from accidental vehicle damage.



References

UK Electric Vehicle Supply Equipment Association (2019) Making the right connections General procurement guidance for electric vehicle charge points. Available at: (<https://www.r-e-a.net/wp-content/uploads/2020/03/Updated-UK-EVSE-Procurement-Guide.pdf>)

Baselining and research

Charge point technologies

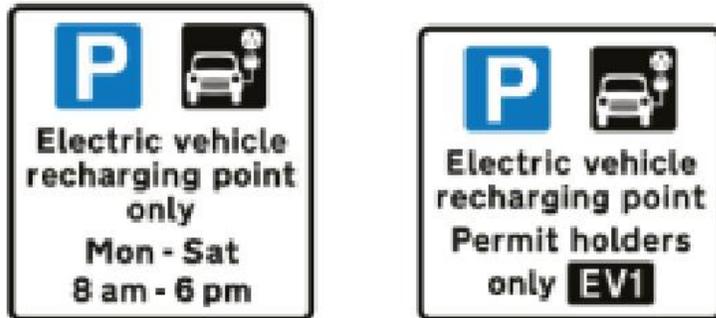
Enforcement and Signage

Councils already have the enforcement powers necessary to enforce on-street and off-street EV charging bays under current legislation (Traffic Management Act), including contravention code 14 for on-street parking, and contravention code 71 for off-street parking. To enable enforcement, a relevant Traffic Regulation Order (TRO) must be put in place by the local authority.

For on-street parking, some local authorities have marked out dedicated EV charging bays, supported with an accompanying TRO to enable enforcement. However, the TRO process adds cost, uncertainty, and delay to the installation process, and a range of options to avoid the use of TROs could be considered, including clustering on-street charge points to help ensure that one is available when needed.

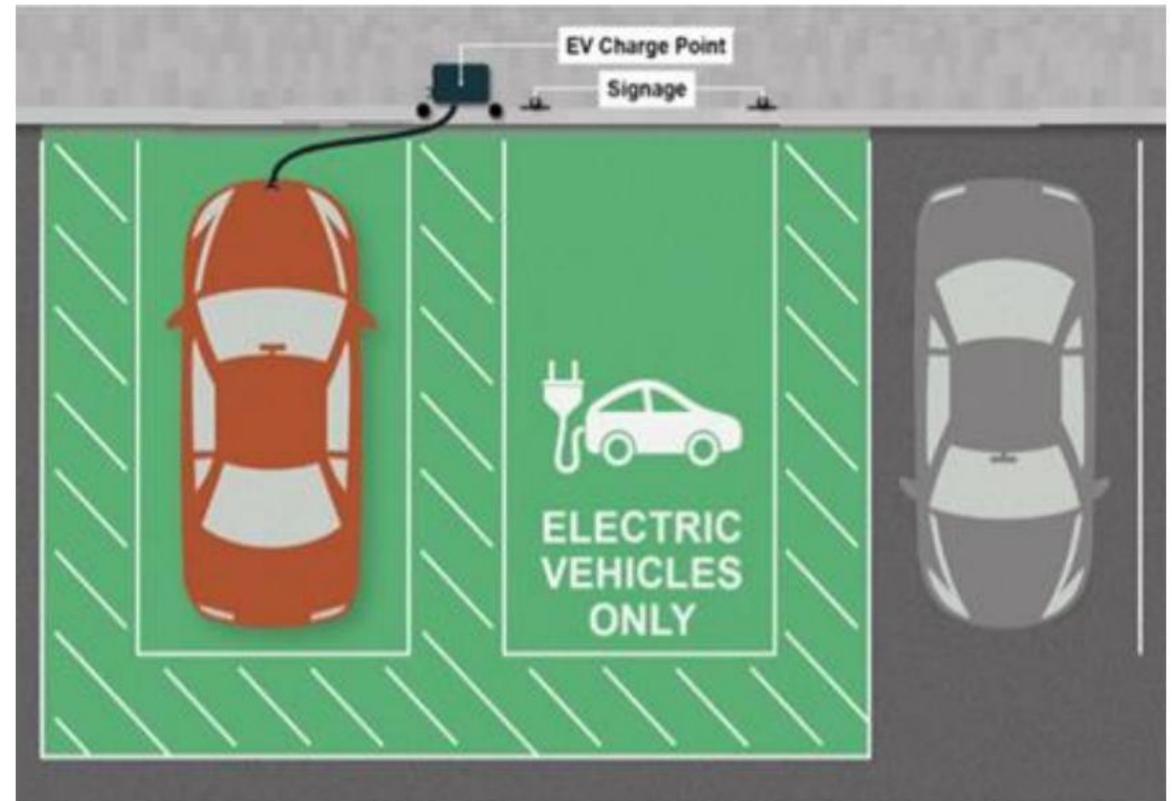
Relevant signage and bay marking for on-street EV bays is set out in **Chapter 3 (Figure 13-44)** of the Traffic Signs Manual. An on-street parking place may be reserved for EVs, with examples of the relevant signage shown in **Figure 9** and **Figure 10**. Some authorities, including Bristol City Council, are preparing bespoke design guidance for EV charging bays to promote best practice and ensure high quality design.

Figure 9: Good practice example of off-street EV bay



Reference: Traffic Signs Manual Figure 13-44.

Figure 10: Good practice example of off-street EV bay layout with signage





Baselining and research

Charge point technologies

Technical Standards

The Office for Zero Emission Vehicles (OZEV) have prepared minimum technical specifications for a range of charge points where grant funding is being sought. Further best practice guidance on charge point technical specifications and installations is provided by:

- BEAMA Guide to Electric Vehicle Infrastructure provides a comprehensive list of the relevant published standards and regulations in terms of wiring, plugs, sockets, outlets, connectors and communications.
- The UK Electric Vehicle Supply Equipment Association¹⁴ (UK-EVSE) Procurement Guide provides further more detailed references.
- The IET Code of Practice for Electric Vehicle Charging Equipment Installation, 4th Edition sets out the considerations needed prior to installation, and the necessary physical and electrical installation requirements.

Scalability

Scalability is a key consideration in ensuring that additional EVCPs can be added to an existing network of charge points at a later date.

It is advisable to plan at least 2-3 years ahead, and ideally five years or more. If the first units that are installed are dumb chargers rather than smart chargers, and not able to optimise their use of the available electricity supply (i.e. are reliant on static load management, which divides available supply on the basis all units may be charging - see Load Management section), this will significantly limit the number of additional charge points that can be added before a costly upgrade will be required to the grid connection.

Load Management

Load management is a critical function in supporting scalability. Load management is where the charger automatically divides the available power over the vehicles that are actively charging. The charger analyses the available capacity and how much power the vehicles require, then distributes the power based on the maximum capacity of the connection. This means that faster charging is available when fewer points are in use, and that power is reduced when there are more vehicles plugged-in, so that the overall demand is managed within the supply capacity.

- **Static load management** - evenly distributes power across all electric vehicles connected to charge points, based on a pre-set load limit. Every charging station is allocated the same charging power.
- **Dynamic load management** (also known as Active load management) - enables each charger to operate at different charge rate, based on the requirements of each vehicle. This maximises the number of vehicles that can enabling faster charging when only a small number of vehicles are charging. They can also enable unused power capacity to be made available to chargers based on the current power consumption of the entire building. Dynamic load management can reduce the load by around two-thirds relative to a static load managed installation.

References

BEAMA (nd) *A Guide To Electric Vehicle Infrastructure*. Available at: (<https://www.beama.org.uk/asset/3D15B964-64C4-4AF0-827C0FF6E07A05B3/>)

UK Electric Vehicle Supply Equipment Association (2019) *Making the right connections General procurement guidance for electric vehicle charge points*. Available at: (<https://www.r-e-a.net/wp-content/uploads/2020/03/Updated-UK-EVSE-Procurement-Guide.pdf>)

Future Proofing

Passive charging provision - is where a parking bay is fitted with the necessary cabling/ ducting/ tray to an isolator, MCB board and RCD board, as well as the reserved power supply. This means the bay can have a charge point installed cheaply and quickly at later date.

The additional charge points can then be installed in a co-ordinated manner with the other chargers at the site to function as part of a wider system, ensuring they can perform dynamic load management across all the chargers.

Passive charging is typically a requirement for new developments, but can also be applied to retrofits, where alongside the installation of an active charge point, a number of additional bays are prepared for future use. The same principle applies to readying a site for higher power charging in the future, should the units need to be upgraded. making sure the charge points are repairable and upgradable rather than static technology

Some public charge points can now be installed using generic groundworks - meaning the charge points can be easily removed and replaced without further excavation. Some charge point suppliers, such as Connected Kerb, are now manufacturing their units from recycled materials, such as tyres and plastic, promoting a circular economy, with a reduced carbon cost of producing most of the materials.



Baselining and research

Charge point technologies

Smart Charging

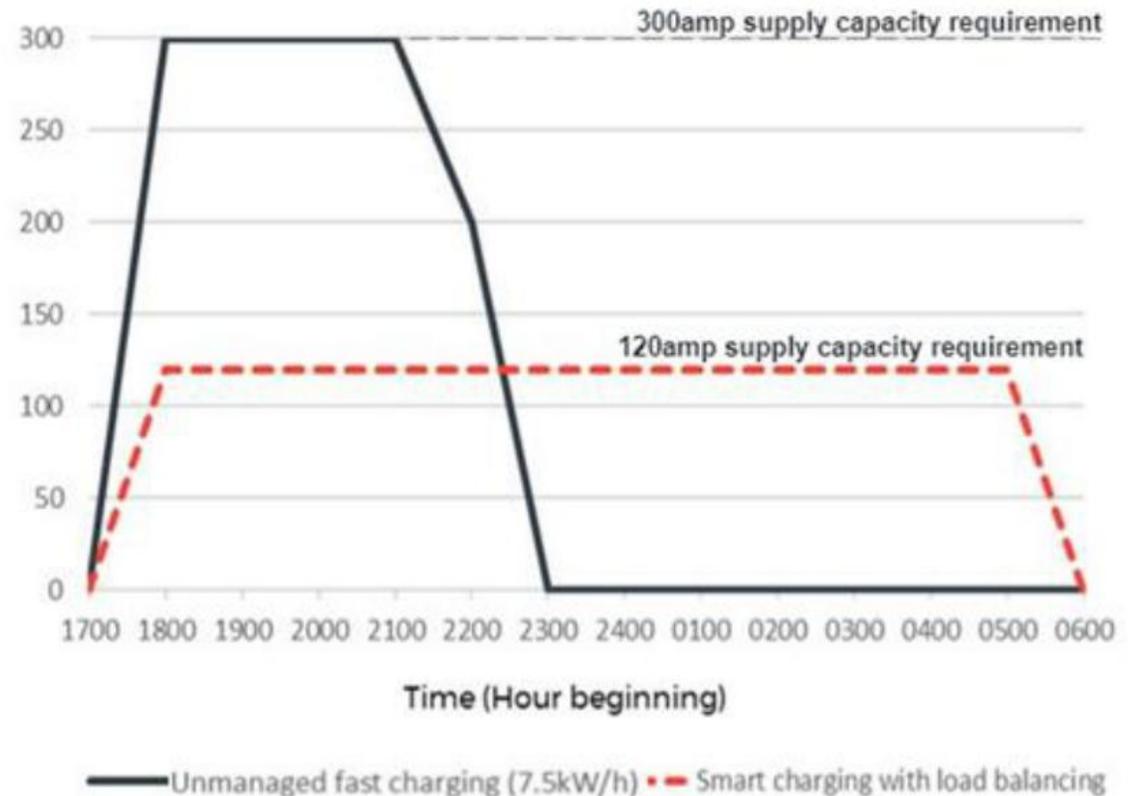
Smart chargers enable active communications between the charge point and the EV (known as Mode 3 charging). A smart charger can receive, process and respond to information or signals, such as adjusting the rate of charge, transmit, monitor and record information such as energy consumption data, comply with requirements around security, and be accessed remotely.

This communication includes information on the available charge rates, enabling faster charge rates, and for the EV to instruct the charging point to turn off the power when fully charged. Crucially, smart chargers also enable charge scheduling, so users can benefit from lower electricity prices by charging overnight.

From a wider grid balancing perspective, it will also be possible to control groups of chargers to manage demand in peak periods. They also enable remote diagnostics, and remote resolution of technical faults by the back-office support team. Much like a smart phone, their connectivity means they are able to receive “over the air” updates to software, to ensure they are kept up to date. Smart chargers communicate frequently (every 3 seconds in some cases), so Wi-Fi signal or a fixed data connection is desirable, or else will require adequate mobile network coverage.

Since 2019 all new charge points deployed in the UK must now be capable of smart charging in order to access grant funding, as stipulated by the Automated and Electric Vehicles Act 2018.

Figure 11: Smart Chargers and Load Management to reduce peak loads and reduce supply capacity requirements (each charging 20 cars)



References
BEAMA (nd) A Guide To Electric Vehicle Infrastructure. Available at: <https://www.beama.org.uk/asset/3D15B964-64C4-4AF0-827C0FF6E07A05B3/>
UK Electric Vehicle Supply Equipment Association (2019) Making the right connections General procurement guidance for electric vehicle charge points. Available at: (<https://www.r-e-a.net/wp-content/uploads/2020/03/Updated-UK-EVSE-Procurement-Guide.pdf>)



Baselining and research

Charge point technologies

Capital and operating costs of EVCPs

Table 10 presents indicative capital and operating cost ranges for EVCPs (at the time of publication).

The costs of installing charger points are typically significantly lower for new builds as opposed to retrofits of existing sites, particularly where trenching would otherwise be required.

The costs can be split into two broad categories, the costs of the charge point unit, delivery, ground works and installation, and separately, the grid connection costs.

There can be significant variability in the grid connection costs (as shown in **Table 11**), subject to the local conditions, the distance of the connection and whether any upgrades are required.

Where grid reinforcement is needed, costs can quickly escalate. In some cases, this may only entail the DNO upgrading service fuses, but in other cases it may entail reinforcing DNO hardware (local transformers, substations etc) at significant cost and delay. In these cases, it is often advisable to consider an alternative site.

In some cases there may be an existing energy supply, with adequate power capacity which is within reasonable distance of the proposed charge point. In this case, a new DNO connection is not required.

Due to the large power requirements, rapid chargers are most likely to require significant grid upgrades. Smart charging, load balancing, on-site generation and renewables and battery storage can all help to reduce grid connection costs.

The number of units, power outputs, whether a unit is wall mounted or column mounted, the ground conditions, and mobile network signal strength also have bearing on costs. There are typically opportunities for costs reductions through negotiated deals with suppliers, often linked to wider commercial agreements, or in the case of bulk-buying.

Table 10 also summarises indicative operating costs (at the time of publication). Annual operating and maintenance costs will also vary

by site and by the size of network, but are typically in the region of £250-£300 per annum for a standard/fast charge point, rising to around £2,000 per annum for a rapid charger. Similar to maintenance, repair costs vary by site, charger type, and the severity of the fault, although many faults can be prevented with regular EVCP maintenance. The Automated and Electric Vehicles Act 2018 also gives the Secretary of State power to make regulations to require operators to ensure that faulty charge points are repaired.

Table 10: Indicative capital and operating cost ranges for EVCPs by location type

Charge/Site Type	Standard/Fast (Off-Street)	Standard/Fast (Off-Street)	Standard/Fast (On-Street)	Standard/Fast (On-Street)	Rapid	Rapid
Cost Range:	Low	High	Low	High	Low	High
Capital Costs	(Low)	(High)	(Low)	(High)	(Low)	(High)
Charging Unit and Installation	£750	£5,000	£1,700	£5,000	£15,000	£30,000
Grid Connection	£0	£3,000+	£2,500	£10,000+	£3,000	£60,000
Operating Costs	(Low)	(High)	(Low)	(High)	(Low)	(High)
Annual Subscription / Operating Cost	£50	£200	£50	£200	£200	£1,200
Annual Service Package and Maintenance	£200	£450	£200	£500	£800	£5,000

Table 11: Indicative DNO connection cost ranges by charge point deployment size

Charge Point Deployment Size	Quantum	Power Requirement	DNO Connection Cost (Approximate)
Small	<ul style="list-style-type: none"> 1-3 Fasts, or 1 Rapid 	Up to 70 kVA	£1,000-£3,000
Medium	<ul style="list-style-type: none"> 10-50 Fasts, or 4-20 Rapids, or 1-6 Ultra-Rapids 	200-1,000 kVA	£4,500-£75,000
Large	<ul style="list-style-type: none"> 50+ Fasts, or 20+ Rapids, or 6+ Ultra Rapids 	Over 1,000 kVA	£60,000-£2m



Baselining and research

Charge point technologies

Charging Fees and Payment Collection

There are three common pricing models for charging:

- Power consumption – £ per kW/h
- Time charging – £ per hour (Stops once charge is complete)
- Time occupied – £ per hour (Stops once EV is disconnected)

Power consumption (£ per kW/h) based pricing is the most common and the most popular amongst users, appropriate for bays where vehicles will be parked for a long time and it would not be desirable/ reasonable to chase them out of the bay to free up the chargers.

Time charging/ time occupied pricing is deployed where it is desirable to keep the bay turning over, to maximise utilisation. These pricing models are most appropriate for rapid chargers, and in communal spaces in residential and business settings.

Charge points in commercial settings where customers or visitors are invited to top up charge as added value may be offered for free charging.



Image: Chargemaster - Polar



Image: Podpoint

RFID and App based Charger Activation

Unlocking and using EVCPs

There are a number of options available for accessing and unlocking EVCPs, including:

- Contactless credit cards
- Radio-frequency identification (RFID) cards
- Apps
- Near field communications (NFC) – where a phone or payment card functions as a key

For publicly accessible chargers made available to customers in retail and leisure sites, it is fundamental that the charge points should be accessible to all public users using common payment systems. Where possible, contactless credit card payments are generally regarded as providing the best and most convenient customer experience (certainly in the case of rapid chargers).

Table 12: Indicative customer charges for public EVCPs by charge point type

Charge Point Type	Location Type	Charge Rates (per kW hr)
Slow/ Standard Charger	Home/Workplace	<ul style="list-style-type: none"> ▪ ~14p flat tariff with a typical domestic rate ▪ ~5p with some off-peak tariffs ▪ Free in some circumstances (e.g. a workplace perk)
Standard/Fast Charger	Destination	<ul style="list-style-type: none"> ▪ ~20-30p ▪ Free in some circumstances, or included within the parking fee
Rapid Charger	Intermediate/ Destination	<ul style="list-style-type: none"> ▪ ~30-40p ▪ Up to 50p
Ultra Rapid Charger	Intermediate/ Destination	<ul style="list-style-type: none"> ▪ Up to 70p

Typical customer charges for public chargers

The cost rates applied to EVCP users, and the method of levying these charges, varies across the different operators engaged in the sector, and depends on a wide range of factors, including:

- EVCP type
- Location
- Payment option
- Commercial viability and funding model
- Operator business model and the nature of their lease and agreements with the host

Table 12 summarises indicative fees levied for public charging (at the time of publication).



Baselining and research

Charge point technologies

Emerging charge point technologies

There are a number of emerging developments for EVCPs, as more innovative solutions are sought to further encourage the uptake of EVs. These new charging innovations should be monitored but are not currently mainstream options.



Inductive charging - a wireless system which uses the principle of electromagnetic induction. Electricity is transferred through an air gap from one magnetic coil in the charger to a second magnetic coil fitted to the car. The charging pads can be embedded within parking bays.

Whilst inductive charging technologies have been around for a number of years, the issue has always been cost, due to a lack of standardisation and interoperability meaning a bespoke kit is required for each vehicle type which does not come as standard on vehicles. The market is beginning to catch up with the technology in this area and in the medium term may begin to be more prevalent for off-street charging. It is considered an enabler of autonomous vehicles, as a vehicle could drive to an inductive charging bay for charging, without relying on a user to plug in vehicle.

SAE International, an industry body responsible for drafting common technical standards, has recently published the SAE J2954 standard for wireless charging of EVs. The WPT (Wireless Power Transfer) system defined by SAE is expected to achieve 94% efficiency in a vehicle with a ground clearance of 25cm. Importantly, the standard also specifies requirements intended to guarantee interoperability.

Inductive charging is currently being piloted in London, the Midlands and Scotland, in a project led by Connected Kerb. Induction pads have been deployed across residential streets, car parks and taxi ranks.



Mobile charging - Mobile charging units avoid some challenges associated with fixed EV charging infrastructure, as they avoid the need for designated EV bays and enforcement, can be disconnected as soon as charging is complete, and potentially require less upfront investment. They can also be repositioned or sold if demand does not materialise.

In 2018 BP invested in US-based manufacturer FreeWire Technologies, the founder of the Mobi mobile charger units. The units are pre-charged, then wheeled over to the vehicle in need of charging. Their models include a 15kW and 50kW DC model. The most likely application for these units are as part of a concierge service and in workplaces.

The drawbacks of the current small, mobile charging units is that they require an on-site attendant if they are

to be repositioned. The battery charging also necessarily entails some energy losses. As such the general view is that these units will have only niche applications, and likely to prove more of a stopgap measure.

References

- *Electrive.com (2020) SAE introduces standard for wireless charging up to 11 kW. Available at: (<https://www.electrive.com/2020/10/24/sae-introduces-standard-for-wireless-charging-up-to-11-kw/>)*
- *ELECTRIC VEHICLE CHARGING IN CHINA AND THE UNITED STATES, Center on Global Energy Policy Columbia | SIPA, ANDERS HOVE AND DAVID SANDALOW, 2019*
- *Reuters Events (2020) Why V2G holds the key to the electric vehicle revolution. Available at: (<https://www.reuters.com/sustainability/why-v2g-holds-key-electric-vehicle-revolution>)*
- *Current-News (2020) Connected Kerb to rollout wireless EV charging <https://www.current-news.co.uk/news/connected-kerb-announce-wireless-ev-charger-rollout>*

Baselining and research

Charge point technologies

Emerging charge point technologies



Vehicle to Grid (V2G) - V2G enables EVs to feed electricity back into a home, workplace, or grid, when demand is at its highest, before then charging at off-peak times during the day or night. This effectively uses the EV as a portable energy storage system, which will become increasingly useful as the share of intermittent renewable generation increases. A single EV can provide 3-4 days electricity for a family home according to the Japanese electricity utility Tepco, which invented bi-directional charging technology. It also presents the user with an opportunity to generate revenues through energy arbitrage and peak shaving.

V2G remains some way off, with smart charging remaining the key measure in the short to medium term, in part because the chargers are still expensive - around £5,000, though the costs have fallen from £10,000. At present only the Nissan Leaf and e-NV200 support V2G charging, but others are expected to do so in the future, with reports CCS will launch their V2G equivalent in 2025.



Battery swap - With battery swapping technology, EVs exchange their depleted batteries for a fully charged replacement, with the potential to dramatically reduce the time required to recharge.

The challenges for battery swap technologies have been the very high infrastructure costs required to build a network of swapping stations, but more fundamentally the lack of a common architecture amongst EVs to enable the process, which led to the bankruptcy of battery-swap start-up Better Place in 2013.

Significant progress has been made in China however, where several Chinese cities and companies are currently experimenting with battery swapping, with a focus on high-utilization fleet EVs, such as taxis and buses. The city of Hangzhou has deployed battery swapping for its taxi fleet, and Beijing has several battery-swap stations supported by local vehicle manufacturer BAIC, which has plans to build

3,000 swapping stations nationwide by 2021. NIO, another Chinese vehicle manufacturer plans to adopt battery-swap technology for some of its vehicles, and to roll-out 1,100 swapping station across China.

Outside of China, vehicle manufacturers have been unwilling to standardise battery packs or vehicle designs, and scepticism remains over whether battery swap has a role to play with the advance in high power rapid charging.

References

- Center on Global Energy Policy Columbia | SIPA, Anders Hove And David Sandalow, (2019) *Electric Vehicle Charging In China And The United States*, Available at: <https://www.energypolicy.columbia.edu/research/report/electric-vehicle-charging-china-and-united-states>
- DC Share (nd) *Using latent capacity to enable rapid charging in constrained urban locations*. Available at: <https://www.dcshare.org.uk/>
- International Renewable Energy Agency (2019) *Innovation Outlook: Smart Charging for Electric Vehicles*. Available at: https://irena.org/-/media/Files/IRENA/Agency/Publication/2019/May/IRENA_Innovation_Outlook_EV_smart_charging_2019.pdf



Baselining and research

Charge point technologies

Emerging charge point technologies



Co-locating EV chargers with battery storage and renewable generation

The co-location of EVCPs with battery storage and renewable energy generation has been promoted for sites with constrained grid capacity which can limit the number or type of EVCPs provided. This can be used to reduce the peak demand of the installation, avoiding or at least deferring costly grid upgrades. The batteries act as a buffer, charging at a low rate during off-peak times or when on-site renewable generation is available, and then discharging to support the grid connection when demand exceeds the site's capacity limit.

This enables the charging site to access low cost electricity, while the revenues could also be supplemented through using the batteries to provide grid services.



Tesla is partnering with utility companies on grid energy storage, where Supercharger stations act as a "grid buffer". A 0.5 megawatt-hour (MWh) battery pack enables vehicles to be charged directly from that pack without a spike in demand reaching the grid.

Tesla previously stated an aim to install battery storage and solar panels across all of its Supercharger sites and have already installed their Powerpacks at some, including South Mimms Service Station.

Other innovations include building a solar canopy over EVCP locations for energy generation. Fastned in the Netherlands installs its solar canopy and storage at its rapid charger hubs.



The DC Share project in Taunton sees Western Power Distribution and partners exploring alternative methods of reducing grid connection costs for rapid chargers, by sharing the load of rapid chargers between four AC substations, without traditional reinforcement of the network.

In May 2018, Pivot Power and National Grid released plans for a £1.6bn investment to install rapid charge points alongside 50MW batteries at 45 sites across the UK, which would connect directly to the transmission system.



Baselining and research

Charge point technologies

Emerging charge point deployment models

Proposed GRIDSERVE Electric Forecourt® (Broadland Gate, Norwich)

An Electric Forecourt® development has been proposed by GRIDSERVE for Broadland Gate Business Park, situated 5.5 kilometres east of Norwich City Centre.

The business park is a large mixed use development which includes retail, leisure, and office buildings. The site is also situated close to the A47 Norwich southern by-pass, which forms part of the strategic road network.

The proposal for the Electric Forecourt® includes the following:

- 12 ultra-rapid EV charging points for cars;
- 12 rapid EV charging points for cars;
- 2 charging points for HGV's;

- 8 charging points;
- 12 car parking spaces for customers and staff;
- 2 mobility impaired spaces;
- Air and water checking facilities; and
- Ancillary facilities which will include a food and beverage offer and customer toilets.

The site will operate 24 hours a day, 7 days a week, with staff working on site during daytime hours.

Speed and convenience are an integral part of the design for the GRIDSERVE Electric Forecourt®. The ultra-rapid chargers feature a full charge time of typically less than 30 minutes, while the rapid chargers are generally between 30 and 60 minutes.

While drivers are waiting for their vehicle to charge a lounge space with food and beverage outlets is provided, and there is also an external picnic area drivers can make use of.

Due to the location of the site, it has been estimated that the Electric Forecourt® will attract 80 to 140 vehicles a day in the first few years (although this is expected to increase in line with EV uptake), and an hourly trip generation rate of 15 to 20 vehicles is expected.

The sites proximity to the Broadland Gate Business Park and the strategic road network mean that it could be considered a destination charger as well as a intermediate charge point that forms part of a longer journey.

The proposed Electric Forecourt® site in east Norwich forms part of the 100 sites GRIDSERVE plans to construct in the next 5 years.



Overview

Emerging technological and social trends and changes related to mobility have the potential to significantly reshape road transport over the coming decades, which could have important implications for vehicle electrification and charging. The DfT's Future of Mobility: Urban Strategy (2019) identifies this, defining six key changes that it expects will significantly impact mobility in the future. These changes include automation, cleaner transport, new business models, new modes, data and connectivity, and changing attitudes. This section of the report looks at how five of these key changes have the potential to impact electric vehicle utilisation and/or charge point implementation; cleaner transport has not been reviewed in this section as this is covered in other parts of this report.

Automation

Improved sensing technology, computing power and software engineering are leading to increasing levels of automation in transport. Whilst the impacts of automation are largely unclear, potential impacts on EVCPs include:

- **A transition towards connected and autonomous vehicles (CAVs)** - There is a broad assumption that CAVs will be electrically powered. Depending on the ownership and usage models for CAVs, their charging requirements may differ. Rather than using a network of charges dispersed across an area, they may benefit more from a central hub of multiple chargers where they can charge when not in use. CAVs may also be better suited for inductive charging, negating the need for a vehicle user to plug a vehicle in.

- **Automation could increase utilisation of vehicles** which is likely to increase daily travel distances of vehicles, which could require more frequent charging (and downtime).

New business models

There is an emergence of new digitally enabled models of transport provision. New business models that have the potential to impact EVCPs include:

- **Acceptance of sharing** - Many people are increasingly happy to share assets and services if it is convenient and the price is right. This can impact the requirements for EVCPs because users will expect to pick up a vehicle with enough charge for their journey. This could lead to EVCPs being located at car club spaces or locations where vehicles are stored when not in use. If operators own large fleets of EVs for users to book/share then these vehicles could be better utilised and will require different charging speeds and types than under-utilised vehicles that are stationary for longer periods of time.
- **Experience economy** - A number of retailers have described a shift from customers consuming products to more disposable income being spent on 'experiences'. This is resulting in a shift within our retail centres, towns and cities with a focus on leisure rather than shopping activities with an associated rise in food, drink and leisure activities. This has the opportunity to increase the dwell time in these areas, and therefore slower charging speeds may be sufficient.

- **Mobility as a service (MaaS)** - If there is a single platform where users can pay for all of their transport usage, EV charging can be incorporated into this cost. This could impact the locations of EVCP as they may be better placed at mobility hubs or transport interchanges. It could also help people worry less if the charging was built into the overall mobility service.
- **Freight and sharing** - In the freight sector, new models based on sharing have the potential to increase efficiency and reduce empty miles. However, if these vehicles are electric and more utilised, larger batteries and faster charging points may be required for successful operation.
- **Fleets** - Taxis and ride-sharing fleets with range limitations and limited access to overnight/off-peak charging may face challenges, as searching for available chargers during busy periods could mean foregone revenues for drivers. Free-floating car sharing fleets also rely on public (and often fast) charging, requiring EVs with sufficient range, and a well-designed charging network.



Baselining and research

Future proofing

Changing attitudes

Consumer attitudes to transport are changing. The Transport and Technology Public Attitudes Tracker found that 65% of respondents recognised the environmental benefits of electric vehicles. Concerns around charging infrastructure (56%) and battery capabilities (41%) were the main disadvantages identified. Social trends that have the potential to impact EVCPs include:

- **Expectation of immediacy** - People want everything on-demand. With the rise of the internet and increasing levels of almost real-time consumption of everything from information to food, there is an increasing expectation for immediate access to products and services. This can impact dwell times by shortening them at certain locations which could increase the need for faster EV charging. It could also mean that consumer expectations of EVCPs may increase, with expectations to have charge points located in convenient locations, be available when required, to work every time with no faults and charge quicker.
- **Social inequality** - Any social inequalities impact transport choices. Therefore EV charging needs to be in locations accessible to everyone and affordable.

- **Simplicity** - New technologies are making it possible to reduce the complexity in products, services, procedures and communications. Consumers in turn are no longer willing to accept complexity, instead demanding transparency, simplicity and availability in everything. In the context of transport, new mobility business models, enabled by innovative digital technology, have challenged long-established transport players and are increasingly offering personal simplified user experiences. Users will expect for EVCP to be simple, easy to use, in convenient locations, to always work without faults and be universal to all vehicles.
- **Ageing population** - Although population is aging, older people are becoming more tech savvy. However, there is still an expectation that the older population may have reservations or struggle with new technology. Therefore, relating to simplicity, EVCPs will need to be designed and located in areas where the ageing population can access and use them, with providers or the council offering support (through an app or over the phone). Accordingly, an inclusive design approach should not only account for an ageing population but also those with mental health or physical disabilities that may experience more barriers when trying to charge a vehicle.

- **Inclusion** - The Equality Act 2010 legally protects people from discrimination in the workplace and in wider society. The Act protects people from discrimination based on their protected characteristics which include age, disability, gender reassignment, marriage and civil partnership, race, religion or belief, sex and sexual orientation. Disability is likely the key consideration in provision of EVCPs, with a need for EVCPs to be accessible for those with disabilities. This is recognised by government in the EV charging guidance for buildings, which states, 'the location of the charge point must comply with the Equality Act 2010'.

New modes

Technology is enabling new ways of transporting people and goods. New modes that have the potential to influence EVCPs include:

- **Shuttles** - Electric shuttles, human driven or autonomous, will have different charging habits than privately owned EVs. Electric shuttles have the potential to drive more miles than other EVs that remain stationary for a lot of the day. Therefore they may require faster charging at origin and destination points on their journeys - or potentially dynamic wireless charging.
- **Robotics** - In places, such as Milton Keynes, small delivery robots are being used to transport groceries and small retail packages to consumers within a local catchment area. These robots are usually electric and require charging. These are much smaller than conventional EVs and therefore will require different types of charging points and charging at different times / frequencies.
- **Micromobility** - Various new micromobility modes are now powered by electricity including docked/dockless bike and electric shared scooter schemes. These will require different charging points, business models and locations to electric cars.

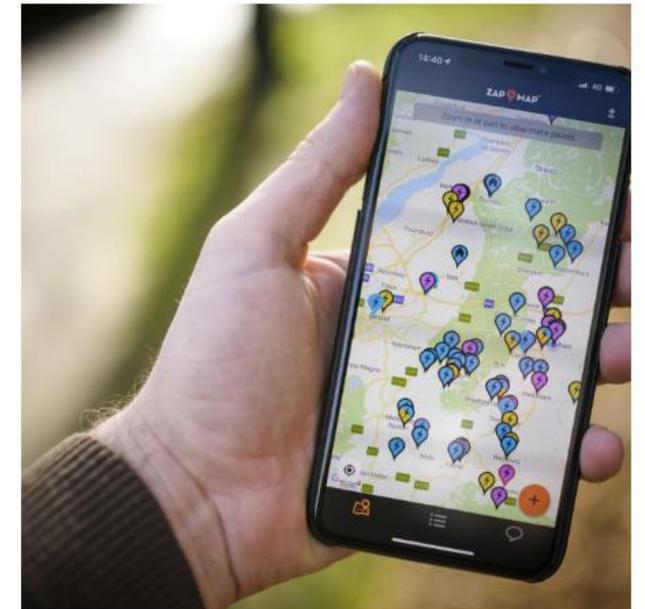
- **Mobility Hub** - A mobility hub is the consolidation of multiple transport services and complimentary community functions. Although not a new mode, a Mobility Hub model has the potential to significantly impact ECVP deployment. Dependant on the business model, charge points may be installed by operators of new modes. However, there could also be a case to have a hub to charge multiple different vehicle types in a central location.

Data and connectivity

The increasing availability of data, improved connectivity and ability for vehicles to communicate with each other and with infrastructure, have the potential to provide relevant information to network operators and users in real time. Trends in data and connectivity that have the potential to impact EVCPs include:

- **Customer centricity** - Customers now have near real time relationships with network and service operators across all modes via social media and other channels. EVCP operators need to be mindful of this and be located in convenient and accessible locations. Getting the customer experience right can help to encourage uptake of EVs because if a person has a bad experience - or knows someone that does - they may be less inclined to buy an EV.

- **Apps** - The rise of apps has led to consumers expecting information at their fingertips. This includes the right customer focused model with an easy to use service. Zapmap provides users with real-time, consistent information regarding EVCPs which has the potential to impact charging behaviour such as where and when users charge their vehicles and potentially even impact uptake of EVs.



Reference: Department for Transport (2020) Transport and transport technology: public attitudes tracker. Available at: <https://www.gov.uk/government/publications/transport-and-transport-technology-public-attitudes-tracker>



Baselining and research

Local context

Taxis

Promoting the adoption of low emission taxis and private hire vehicles has the potential to deliver significant improvements to local air quality. As taxis frequently operate at busy transport interchanges and hubs, such as bus and rail stations, idling their engines, they can contribute disproportionately to local air pollution relative to the number of vehicles.

When applying a life cycle cost calculation, low emission taxi vehicles are often found to be the more cost effective option. For example, the Electric Hackney Carriages, such as the London Electric Vehicle Company (LEVC) TX and the Nissan Dynamo can now cost less than petrol and diesel equivalents once running costs, maintenance, and other costs are considered. However a lack of well placed charging infrastructure will serve to discourage the transition to low emission taxis.

When installing charging infrastructure for taxi vehicles, several guiding principles should be considered. This includes:

- **Choosing convenient charge point locations.** Charge points for taxis should be located near to locations where large numbers of taxis are often stationary, such as a transport hub or large trip attractor. Many drivers also take their vehicle home outside of working hours, therefore the provision of residential on-street chargers or charging hubs in areas where drivers are reliant on on-street parking is essential, to facilitate a transition to electric taxis, as drivers are likely to want to start a shift with a full charge.

- **Providing the right infrastructure.** A key aspect of charging infrastructure for taxis and private hire vehicles is speed, therefore the majority of charge points should be ultra-rapid or rapid, and in some circumstances down to a minimum of fast chargers (22kW), where dwell times are long enough.
- **Engaging with the trade.** It is crucial when deciding which locations are most suitable for chargers for local authorities and developers to engage with local taxi companies, as they will be able to provide important information about their needs and fleet, which should inform the deployment of chargers.

ABC Taxis, Norfolk

ABC Taxis is Norwich and Norfolk's largest taxi service, with a fleet of over 240 vehicles. The company places a strong emphasis on remaining environmentally friendly, offsetting the emissions from their ICE vehicles through their partner company Ecologi.

Their fleet consists of over 150 low emission vehicles, with aims to increase this proportion. This includes a number of fully electric vehicles (BEVs), such as the Nissan Leaf, while the majority of the low emission fleet relies on hybrid drivetrains.





Baselining and research

Local context

Commercial Fleets

Commercial EVs for fleets and businesses offer a number of benefits over conventional petrol and diesel powered vehicles, such as an estimated 20-30% reduction in maintenance costs. With several electric vans already available, such as the Renault Kangoo ZE and Mercedes-Benz eSprinter, more businesses are switching to EVs ahead of the 2030 sales ban.

There are also further financial incentives currently on offer, with the UK Government providing up to £8,000 towards the purchase price of an electric van for businesses, as well as offering grants to help towards the installation of charge points within the workplace of up to £350.

EVs employed in commercial fleets can provide effective solutions for short to mid range duty cycles and are particularly well suited to urban areas, due to the frequent stopping and starting of traffic and lower daily mileage requirements.

UPS have already secured a £340 million order for the Arrival electric van, purchasing 10,000 vehicles.

Another example of a large e-commerce company starting the transition toward EVs is Amazon, who have placed an order for 100,000 vehicles from the EV start-up Rivian, with 10,000 of these expected to be on the road by 2022, and the remainder by 2030.

Amazon's rollout of electric vehicles has already begun in the UK, with the introduction of Mercedes-Benz electric vans into their fleet at various depots, and plans to add a further 500 vehicles within the year. These vans are 100% electric, and currently operate out of depots across the country, including Wembley, Ipswich, and Exeter.

Applying EV technology to freight vehicles poses a greater challenge for HGVs than for cars and vans, due to the large battery range needed and adaptation of charging infrastructure. However, some e-HGV models are being developed, such as Daimler's E-Fuso Vision One, which is planned to be introduced to the European market within the next 4 years.





Baselining and research

Local context

Buses

Policy Context

Bus Back Better, the UK's National Bus Strategy, was published in March 2021. The Government committed to deliver 4,000 new British-built electric or hydrogen buses across the UK in this parliament, and pledged to end the sale of diesel buses, building on the existing ban of petrol and diesel car sales by 2030. To do so, the Government will open consultations with the industry as soon as possible in order to determine an appropriate end date for sales.

Prior to these government targets, many private bus operators and local authorities set their own targets around low emission and zero emission buses (ZEBs). It is noted that although there are no specific policies relating to ZEBs in Norfolk, several recognise the potential of electric buses to help meet targets. *Norfolk's Transport Asset Management Plan (2020-2021)*, in particular, identified that there was good scope for electric buses, particularly in serving the park and ride services, with short journey times and longer dwell times to allow for charging.

Norfolk is served by over seven bus operators across the county. The most prominent of which, First Bus, has committed to purchase no diesel buses after 2022, and to operate a fully zero-emission fleet by 2035. Working with electric vehicle company Arrival, First Bus will begin trials of zero emissions buses across several routes this Autumn.

Current UK Zero Emission Bus Picture

London is the leader of the transition to zero emission buses in the UK. The London bus fleet consists of 3,773 hybrid buses, 316 battery electric buses, and 10 hydrogen buses according to the bus fleet audit of March 2020.

Outside of London, Britain's biggest bus operator Stagecoach began the introduction of 105 electric double deck buses (Enviro400 EV City built by Alexander Dennis Limited) in the fleet between 2019 and 2020. With financial support from the Ultra-Low Emission Bus Scheme and Transport for Greater Manchester. The new electric bus fleet for Greater Manchester offers a 62% improvement in CO₂ emissions over the latest ultra-low emission diesel buses and supports the region's Air Quality Action Plan.

The world's first hydrogen-powered double-decker buses are now operational in Aberdeen.

Brighton & Hove have invested £9.9 million in a trial service of 30 new double decker extended range hybrid electric buses, which will be set to run in the Ultra-Low Emissions Zone (ULEZ).

Outside of large cities and urban conurbations, ZEB deployment in more rural areas of the UK is limited.



Charging Technology Options

The choice of charging strategy used by bus operators (overnight or opportunity charging) is determined to a large extent by the operational requirements of the bus network, with intensive 24 hour bus services and specialist services such as airport shuttles and park & rides being best suited to opportunity charging.

Overnight charging is typically achieved using more conventional standard, fast or rapid chargers, while opportunity charging for buses requires more sophisticated charging infrastructure such as pantograph chargers (see photo below).

The charging strategy is typically influenced by the suitability of the depots to support overnight charging, the capital cost of vehicles and charging infrastructure, operating costs, vehicle range, operating requirements and maintenance arrangements.

Recommendation: *Norfolk County Council should develop their understanding of the Zero Emission Bus environment further, to determine how and they can be appropriately implemented across the county. This should consider fleet deployment, charging options, costings, and engagement with operators.*

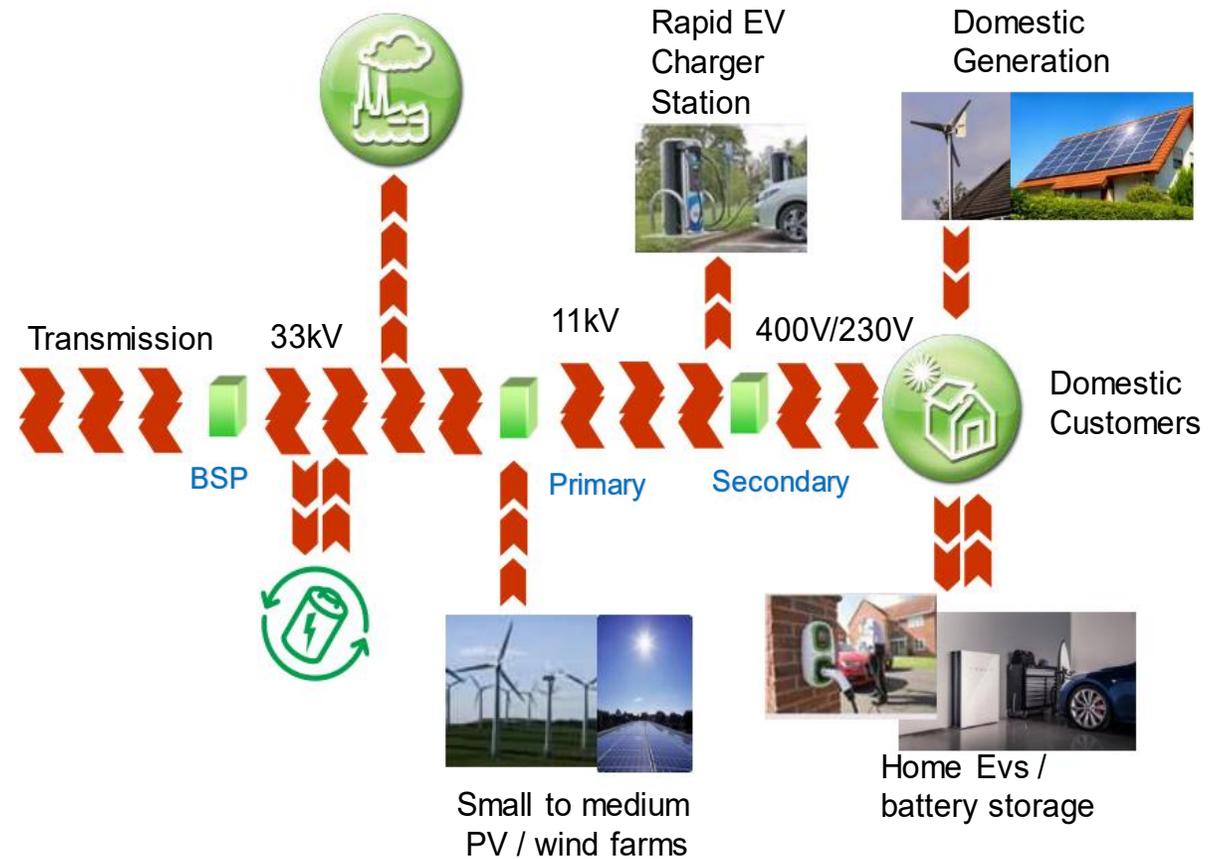
Electricity Network

In the UK, Distribution Network Operators (DNO) are responsible for the distribution of electricity from the transmission network to end users. Electricity is distributed at different voltages, which are stepped up and down using transformers at substations. This is represented in **Figure 13**.

This analysis considers 'primary' substations, which generally have a voltage of 11kV or 6.6kV. Individual EVCPs, such as single domestic or fast chargers, have a demand of 3kW (single phase) to 22kW so these will connect to the low voltage network through secondary substations. If a cluster of individual EVCPs is provided in the same street or estate, there is a risk that the energy demand may overload the local secondary substation.

Large groups of EVCPs or rapid chargers (such as in EV service stations or supermarkets with a large amount of EVCPs) will likely connect to primary substations.

Figure 13: Illustration of how EVCPs connect to the electricity distribution network



Baselining and research

Grid Constraints Mapping

Electrical capacity

The county of Norfolk encompasses 74 primary substations, of which all are owned and operated by UK Power Networks – Eastern Power Networks (UKPN – EPN).

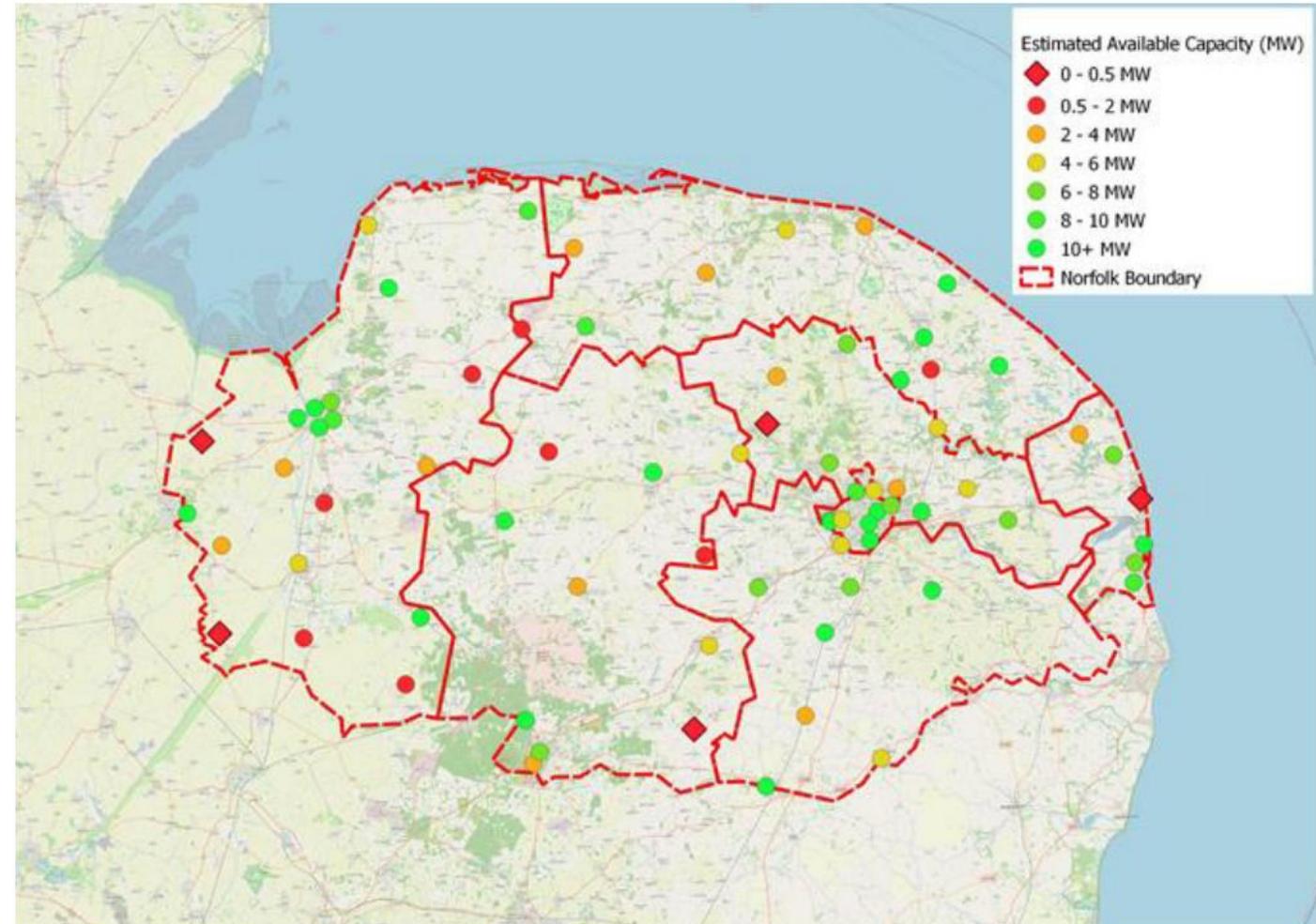
By analysing data published by UKPN, the estimated available capacity (MVA) can be approximated by taking the maximum forecasted demand and firm capacity at each primary substation. This gives a general indication of how much further demand can be added in at this level.

The data shown in the adjacent figure is using the latest available demand data from the LTDS, (for the 2024/25 period), to present the worst case. Though it should be noted that significant EV uptake is expected after this time.

The table below depicts the available capacity banding used at this baseline stage of data analysis.

Estimated Available Capacity (MW)	Comment
0 – 0.5 MW	Fully utilised, no spare capacity
0.5 – 2 MW	Highly utilised, limited spare capacity
2 – 4 MW	Fairly utilised, adequate spare capacity
4–6 MW	Significant spare capacity
6 – 8 MW	Significant spare capacity
10+ MW	Significant spare capacity

Figure 14: 2024/25 Primary substation Constraints Map



Baselining and research

Grid constraints – case studies



Strategic Road Network - Intermediate charging site

Site Location – Shell Petrol Station, NR9 3AU: Just off Thickthorn Roundabout (A47 and A11), Southwest of Norwich, Next to Thickthorn Park & Ride

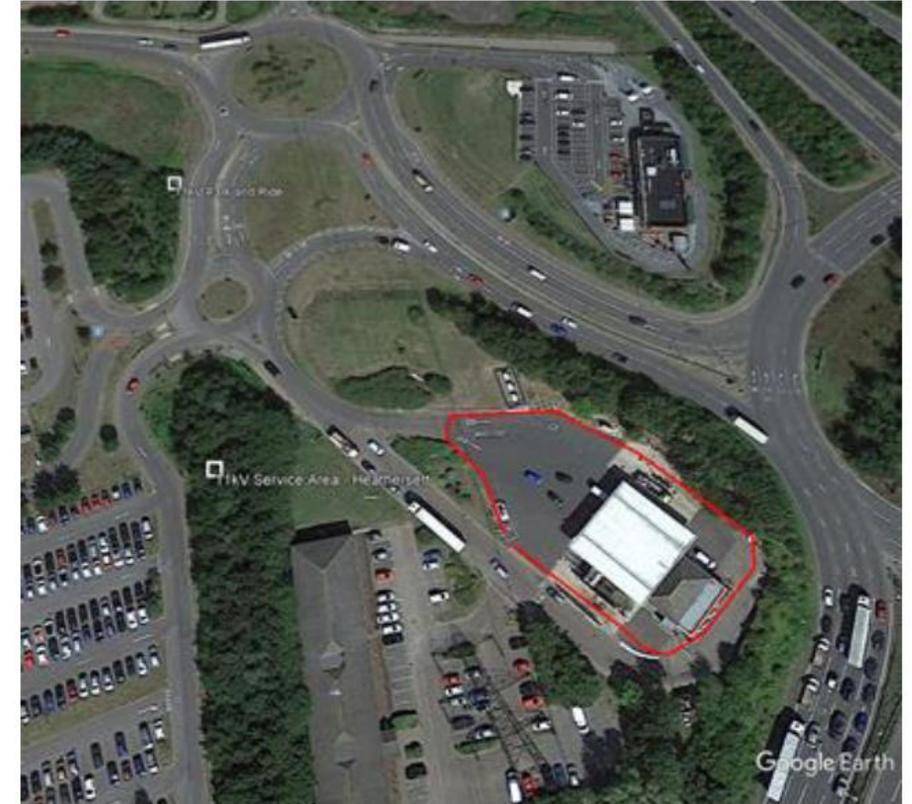
Charging Requirement - Intermediate/ Destination charging, with restaurants and coffee shops, and typical dwell times of 30 mins to 1 hour.

Charge Points Types - A site such as this may require at least 4 rapid chargers and 4 fast chargers ultimately, though initially likely only 1-2 of each.

Secondary Substation - The closest secondary substations are the 11kV Service area secondary substation and the 11kV park and ride secondary substation. The closest substation is the 11kV service station substation, which is approximate 70m of the site. UKPS data shows that this substation only has capacity for <150kW, approximate costs for connection here would be £10,000 to £15,000. The 11kV Park and Ride substation is slightly further away (120m) from the site, though UKPN data shows that <150kW could be connected but does not specify exactly how much so, **4-5 rapid 50kW** chargers or **1-2 ultra-rapid 150kW** chargers may be able to connect here. Approximate costs would be £100,000 - £125,000.

Primary Substation - The closest primary substation is the Cringleford Primary 33/11kV substation, which has an available capacity of approximately 5.1MW. This substation is approximately 1.5km in a straight line from the site. Subject to DNO assessment, this connection could accommodate more than 10 ultra rapid 150kW chargers, or larger combinations of smaller chargers. The costs for this would be much higher at £200,000 - £300,000.

Summary - This site is very close to a secondary substation and fairly close to a primary substation, therefore, it is relatively inexpensive to connect this site to the grid. If a connection is required all the way back to the primary substation, then in this area it may be possible for overhead lines to be used, which reduces cost. However, it may not be required to connect all the way back to the primary substation.



If grid connection costs prove to be too high, it may be an option to install battery storage on site in order to reduce peak load at high demand and reduce the grid connection capacity required. However, for this site it is likely that battery storage will not be economical when compared to grid connection costs (a 1MW battery costs approximately £300,000).

This site could also have the potential for on-site energy generation, particularly photovoltaic (PV) generation, if any of the surrounding land could be made available. If only PV was connected this would not reduce the grid capacity requirements but could reduce the running costs of the site if the PV generation coincided with time of high loading of the EV chargers.



City Centre – Destination charging site

Site Location – St Andrews Car Park, NR3 3AJ: Norwich City Centre, Just off St Andrews Street and Dukes Street

Charging Requirement - Destination with typical dwell times of 2-5 hours.

Charge Points Types - A site such as this may require at least 6-8 fast chargers ultimately, and potentially 1-2 rapids, though initially potentially only 2-3 fast chargers.

Secondary substation - The closest secondary substation to this site is St Andrews multi storey car park 11kV, which is on-site. Up to **10 Fast 7kW** chargers could be connected to the low voltage side of this transformer. This would have an approximate connection cost of £10,000. UKPN data shows that >150kVA could be connected at this substation, though, depending on line ratings and current load, it is unlikely that more than 200-300kW could be connected (it is assumed that these circuits will be quite highly loaded). i.e. **4-5 Rapid 50kW** chargers or **1-2 ultra rapid 150kW** chargers. Approximate costs are £150,000.

Primary Substation – The closest primary substation to this site is the St Stephens 33/11kV substation, which has an available capacity of approximately 11.7MW. This substation is approximately 0.65km following roads from the site. Subject to DNO assessment, this connection could accommodate more than 10 ultra rapid 150kW chargers, or larger combinations of smaller chargers. The costs for this would be much higher at £200,000 - £400,000. However, this connection would be more difficult as it would require access and digging through a busy town centre.

Summary - This installation is in a very built up area, therefore reinforcements will be relatively expensive if new circuits require installing. However, several fast chargers can be installed fairly inexpensively.



A battery could be installed on this site to reduce peak loading, however the site is space constrained so this option may not be viable. A 2MWh battery would have approximate dimensions of 12.2 x 2.4 x 2.6 (LxWxH) metres.

Depending on the likely loading profile of this site, it may be possible to obtain an agreement with the DNO for a variable connection capacity either based on time of use or network loading. This could limit the output of the chargers at peak times but would allow greater capacity at off peak times.

Baselining and research

Grid constraints – case studies



Rural Town – Destination charging site

Site Location – The Buttlands Car Park, NR11 6DU. Aylsham (market town in Broadland District). Rural Destination.

Charging Requirement - Destination with typical dwell times of 1-3 hours.

Charge Points Types - A site such as this may require at least 4-6 fast chargers ultimately, and potentially 1-2 rapids, though initially likely only 2-3 fast chargers.

Secondary Substation - The closest secondary substation to this site is Cawston Road 11kV, approximately 60m west of the site. The local low voltage network close to this site has available capacity for up to **7 fast 7kW** chargers or **one rapid 50kW** charger. This would have an approximate connection cost of £20,000. Depending on line ratings and current load, it is possible that 150-300kW could be connected. i.e. **5-6 rapid 50kW** chargers or **2 ultra rapid 150kW** chargers. Approximate costs would be £100,000 - £150,000.

Primary Substation – The closest primary substation to this site is the Aylsham 33/11kV substation, which has an available capacity of approximately 6.1MW. This substation is approximately 1.5km in a straight line from the site. Subject to DNO assessment, this connection could accommodate more than 10 ultra rapid 150kW chargers, or larger combinations of smaller chargers. The costs for this would be much higher at £200,000 - £300,000.

Summary - Although this is a remote site, several fast chargers could be connected very economically. If several rapid or ultra rapid chargers require connection it may be more expensive to connect with significant network reinforcements required.



Site This site may benefit from a battery on site in order to meet peak demand of the charging units and reduce the requirement for network reinforcements. If the peak charging load is going to be a lot higher than the estimated 100-150kW then a battery may be more economical than network reinforcements. A 500kW battery could cost £150,000 - £175,000, which may be less expensive than grid reinforcements overall.

Additionally, if land is available, it may be possible to install on-site renewable energy generation (wind or PV), which could support the EV charger by either reducing the overall demand or by keeping the batteries charged.

Baselining and research

Grid constraints – case studies



Tourist site – Destination charging site

Site Location – a remote tourist destination, at Sheringham - Water Lane.

Charging Requirement - Destination with typical dwell times of to 2-5 hours.

Charge Points Types - A site such as this may require at 4-6 fast chargers ultimately, and potentially 1-2 rapids, though initially potentially only 2 fasts.

Secondary substation - The closest secondary substation to this site is Water Lane pumping Station, approximately 50m east of the site. The local low voltage network close to this site only has available capacity for <50kW, so up to **7 Fast 7kW**, with an approximate cost of £10,000. The next closes secondary substation is 360m to the west (Water Lane Caravan Park).. This secondary transformer is at the end of a very long 11kV feeder, on the 11kV side, depending on line ratings and current load, it is unlikely that more than 200kW could be connected. i.e. **4 Rapid 50kW** chargers or 1 **ultra rapid 150kW** chargers. Approximate costs are £150,000.

Primary Substation – The closest primary substation to this site is the Cromer 33/11kV substation, which has an available capacity of approximately 2.1MW. This substation is approximately 4.5m in a straight line from the site. Subject to DNO assessment, this connection could accommodate up to than 10 ultra rapid 150kW chargers, or larger combinations of smaller chargers. However the costs for connecting directly to this substation would be extremely expensive (up to £500,000), though a more economical connection may be available following DNO discussions.

Summary - This is quite a remote site and it appears that to connect a single rapid charger or more, it would have to be connected at 11kV, requiring a new secondary substation. However, it is more likely that fast chargers would be installed at this site, as EV drivers are more likely to park at a site such as this for several hours.



This site may benefit from a battery on site in order to meet peak demand of the charging units and reduce the requirement for network reinforcements. It will have to be assessed whether a battery would be economical for this site if there are only one or two rapid chargers required. A 200kW battery is likely to cost £60,000 - £70,000, which may be cheaper than grid upgrades but will require operational and maintenance costs.

Additionally, if land is available it may be possible to install on-site renewable generation (wind or PV), which could support the EV charger by either reducing the overall demand or by keeping the batteries charged.

As with the other sites it may be possible to implement an active network scheme where the grid capacity is reduced at times of peak loads.



Baselining and research

Grid constraints mapping

Summary of Case Study Findings

The preceding studies have sought to provide a high level illustration of the potential grid constraints and connection / upgrade costs for randomly selected sites across the County – the findings of which are summarised overleaf.

One of the sites immediately triggers the requirement for a potentially high connection cost as part of a shorter term roll-out. This is a site sites requiring high power chargers in a relatively remote location.

In the case of the SRN site, this is potentially less problematic if the utilisation of the site is forecast to be high and strategically located, and with no better sites available. However, the site on the secondary road may be expected to be less well utilised, and so the commercial case for a private investor to deploy a rapid charger at the site will be limited.

The other sites require only a small number of fast chargers initially, which present fewer problems in terms of the grid capacity and connections costs, and in the case of the suburban site, a single rapid charger can be provided at reasonable cost.

As demand increases, the medium term requirement is for a greater number of chargers, which will incur increasing connection costs where the power demands require connections to the 11kV network. This entails a high upfront cost, but can then cater for a large number of chargers. So if a large deployment of chargers is required, and they will be well utilised once installed, the initial cost of the upgrade may be justified and still present a viable business case.

Other sites requiring fewer chargers, or which are needed to provide reasonable geographic coverage, but are not expected to be well utilised, are much harder to deliver when a costly grid connection is required – which is well illustrated by the remote secondary road amongst these case studies.

The rural town centre site considered faces particular challenges in transitioning from providing a small number of fast chargers, to also providing a number of rapid chargers, as this is likely to trigger a requirement for network reinforcements.

A number of the sites would potentially benefit from alternative mitigating measures to conventional grid upgrades, with some key considerations being the:

- **Relative cost of battery storage** as compared to the network reinforcements to meet peak demand of the charging units.
- **Space constraints** of site and the ability to accommodate a potentially large battery storage facility.
- **Loading profile of the sites** and whether variable connection capacity, either based on time of use or network loading, would be effective.
- **Availability of land** to install on-site renewables generation (wind or PV), either reducing the overall demand or keeping the batteries charged.



Baselining and research

Grid constraints mapping

Summary of Case Study Findings (continued)

The rural town in particular may benefit from battery storage being installed alongside the chargers, to meet peak demand of the charging units and reduce the requirement for network reinforcements. If the peak charging load is a lot higher than 100-150kW a battery may be more economical than network reinforcements.

The SRN, remote secondary road and remote tourist site potentially offer the greatest potential in terms of land to install on-site renewable generation, which could support the EV chargers by either reducing the overall demand, or by keeping the batteries charged.

STR - Short term Requirement
MTR- Medium term Requirement

Case Study Example Sites	1 Strategic Road Network	2 City Centre	3 Rural town Centre	4 Remote Tourist Site
STR - Fasts	2	3 to 4	2 to 3	2
STR - Rapids	2	-	-	-
STR- Potential Connection Cost	£150k	£10k	£20k	£10k
MTR - Fasts	4	6 to 8	4 to 6	4 to 6
MTR - Rapids	-	1 to 2	1 to 2	1 to 2
MTR - Ultra Rapids	4	-	-	-
MTR - Potential Connection Cost	£200-300k	£150k	Up to £500k	£150k
Indicative Connection Cost per Charger	£62.5k	£18.8k	£62.5k	£18k

Section 2

Policy context and stakeholder engagement



Policy context and stakeholder engagement

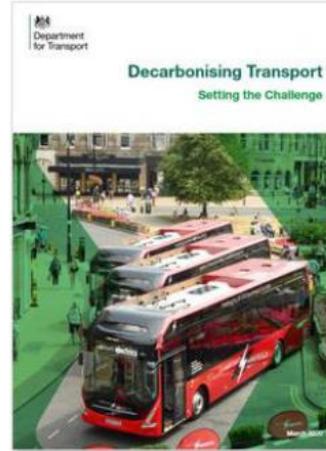
Policy context

Overview

This section presents a policy review, summarising relevant national and local policy.

National policy

Decarbonising Transport, Setting the Challenge (2020): This document highlights the current challenges and steps to be taken when developing the transport decarbonisation plan to reach net zero transport emissions by 2050. The report states that in 2019, the UK was the third largest market for EVs in Europe and is a global leader in their development and manufacture. Future funding is addressed in the report including Government is providing £500million over five years to support the rollout of a fast-charging network for electric vehicles.



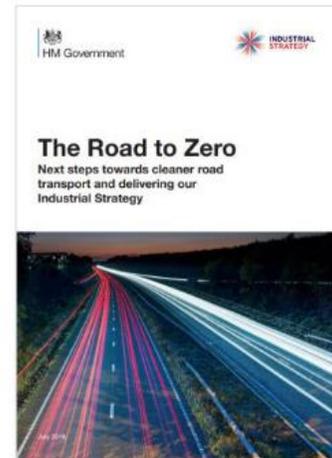
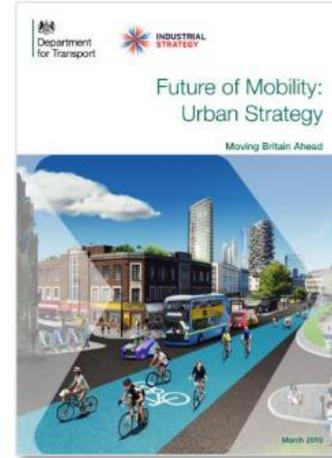
Clean Air Strategy, Department for Environment, Food and Rural Affairs (2019): The report outlines the UK strategy to tackle sources of air pollution and reduce emissions, highlighting how the priority has shifted from large individual sources of pollution to the contribution of smaller, more diffused sources of air pollution. The report highlights the key role that transport must play in reducing emissions, with the sector (inclusive of road transport, domestic shipping, aviation and rail) currently being responsible for 50% of nitrogen oxides, 16% of fine particulate matter (PM2.5) and 5% of non-methane volatile organic compounds (NMVOCs). Actions to reduce emissions from transport include the immediate challenge to reduce roadside concentrations of nitrogen oxides of which roads transport is responsible for 80%. By 2040 sales of conventional petrol/diesel cars and vans will be ended, with progress reviewed in 2025.



Road to Zero (2018): The Road to Zero outlines a strategy to cement the UK as a leader in the design and manufacturing of Zero Emission Vehicles, for all new cars and vans to be zero emission by 2040 and to ensure that by 2050 almost every car and van will be zero emission. The document sets out the actions Government will take to achieve this aim. The measures included amount to nearly £1.5 billion of investment. Key actions include the On-street Residential Chargepoint Scheme, the Electric Vehicle Homecharge Scheme and the Workplace Charging Scheme amongst many others.

Since publication of the Road to Zero, the Government has consulted on bringing forward the ban on the sale of new petrol, diesel and hybrid cars and vans from 2040 to 2035. Government is currently assessing the results of the consultation. There have been further reports that the government is considering bringing this further forward to 2030, as part of wider plans to bring about a green economic recovery from COVID-19.

Future of Mobility Urban Strategy (2019): The Future Mobility Urban Strategy outlines key principles and policies that the government will implement to further advance future mobility in the UK. The strategy states that current established technology specific programmes will be continued. Transport is becoming cleaner, with falling battery prices, improvements in energy density and electric motors and developments in alternative fuels. The UK mission to be at the forefront of the design and manufacturing of zero emission vehicles with all new cars and vans effectively zero emission by 2040 is outlined.



UK Plan for tackling roadside Nitrogen Dioxide Concentrations – The NO2 Plan (2017): The NO2 plan summarises the Government’s plan to bring NO2 air pollution within its statutory limits in the shortest possible time. NO2 concentrations around roads is the only statutory air quality limit that the UK is failing to meet. The plan outlines that the Government is determined to be at the forefront of vehicle innovation by making motoring cleaner – and central to this is the Government’s ambition for Britain to lead the world in electric vehicle technology and use.

Automated and Electric Vehicles Act (2018) : This Act makes provision for the creation of regulations relating to the installation and operation of EV charging points and hydrogen refuelling points. The Act is split into two sections, one focussing on automated vehicles and the liability of insurers, and the one relevant to this report – EV charging. The EV charging element of the Act gives the Secretary of State the power to make regulations in relation to:

- Requirements for EVCPs operators to provide data on EVCP locations and availability.
- Minimum design, function and payment method standards to apply to EVCP operators, with a view to improving interoperability.
- Minimum provision of EVCPs at motorway service areas and large fuel retailers.
- Requirements for EV infrastructure to be ‘smart’.

The explanatory notes for the Act references that:

- Government funding and private investment have led to the deployment of 14,000 public charge points, but that significantly increased provision of EV charging infrastructure is required to support mass market uptake of EVs.
- Currently there are multiple charging networks with different offers to consumers, which leads to the accessibility and convenience of CP being cited by consumers as a key concern.
- Smart EV charging has the potential to avoid network pressures and allows consumers to capitalise on cheaper off-peak electricity generation by modulating or delaying charging.

Physical infrastructure for high speed electronic communications networks (2016): This document introduced a new requirement for in-building physical infrastructure which enables connections to broadband networks for new, and existing undergoing major redevelopment, residential dwellings and other buildings in England.

Along with the above mentioned, there is ongoing consultation on phasing-out of new diesel heavy goods vehicles (HGVs) and the DfT will publish a green paper in the coming months - *post-EU regulatory regime for CO2 emissions from new road vehicles*.



Policy context and stakeholder engagement

Policy context

The Ten Point Plan for a Green Industrial Revolution (2020): In this document, the Government sets out its intentions to pioneer a green industrial revolution, which will be accomplished by investing in clean technologies such as wind, carbon capture, and hydrogen.

Point 4 of the plan is titled “*Accelerating the Shift to Zero Emission Vehicles*”, and it prescribes series of actions intended to accelerate the widespread uptake of EVs. The measures detailed in the plan include:

- Ending the sale of new petrol and diesel cars and vans by 2030, 10 years earlier than originally planned.
- The publication of a Green Paper in 2021 that will detail the UK’s post-EU emissions regulations.
- A £1 billion package to support the electrification of UK vehicles and their supply chains.
- Investing £1.3 billion in EV charging infrastructure to help facilitate a fast rollout, with a particular focus on rapid charge points along the major road network.
- Providing £582 million of funding to extend the plug-in car, van, taxi, and motorcycle grants to 2022-23 to reduce purchase costs.

Point 10 of the plan is “*Green Finance and Innovation*”, which details the importance of innovative technologies and continued R&D investment to help facilitate the transition to a

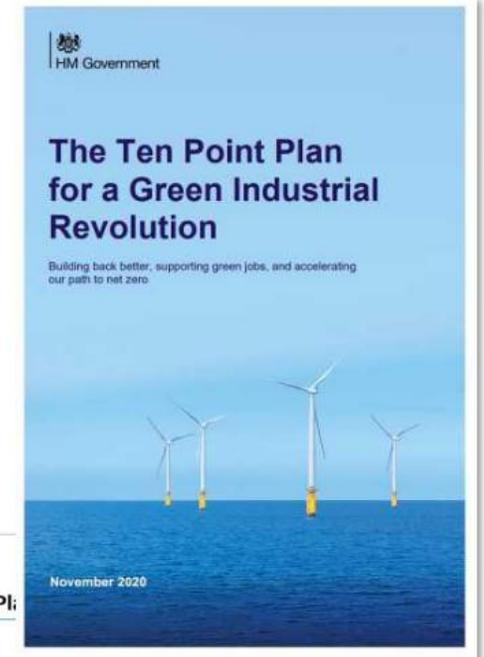
green economy. Examples of these technologies include:

- The UK Governments rollout of green number plates, which make it easier to identify zero emission vehicles and thus provide local authorities with opportunities to incentivise and reward EV drivers.
- £20 million investment in trials of zero emission HGVs.
- £3 million of funding for the Tees Valley Hydrogen Transport Hub.

Regional Policy

Norfolk Strategic Planning Framework (2021): This framework has been developed in unison by Norfolk’s Local Planning Authorities, and has an overall objective of agreeing shared strategic priorities, demonstrating compliance and duty to cooperate with the NPPF, and maximising the opportunities to secure external funding to deliver against agreed objectives.

Within the document, Agreement 3 cites electric vehicles as an alternative method of transport to reduce unnecessary car usage and the subsequent greenhouse gas emissions that it produces, EVs also feature prominence in Agreement 8, which focuses on supporting the New Anglia Covid 19 Economic Recovery Restart Plan, by accelerating the shift towards zero emission vehicles as a tool to local improve air quality.





Policy context and stakeholder engagement

Policy context

Norfolk County Council

Connecting Norfolk - Norfolk's Transport Plan for 2026 (2011): Norfolk's 3rd Local Transport Plan describes the transport vision for the county as having a transport system which offers a range of low carbon options allowing residents and visitors to meet their needs, as well as attracting and retaining business investment.

The focus of Policy 8 within the plan is on vehicle efficiency, which outlines that a shift to lower carbon technology and cleaner fuels is a priority. The policy describes how NCC will deliver EV charging infrastructure in Norfolk's urban areas by taking advantage of external funding schemes, as well as using council assets to support bids for EV technology. Section 6.5 also states long term goals for the council, which includes a vehicle fleet with a proportion of EVs large enough to make a difference to emission levels.

Norfolk's Transport Asset Management Plan 2020-21 - 2024-25 (2019): The aim of the Transport Asset Management Plan is to evaluate current practices within the county relating to asset management, and set out a way forward which is more effective at meeting national and local objectives. Identified within the plan is scope for EVs within the county, specifically electric buses. The short journey times and longer dwell times of the park and ride buses is highlighted as an ideal opportunity to promote electric bus uptake within the county.

Safe, Sustainable Development (2011): This document contains aims and guidance notes intended to act as best practice for use by developers, with the intention of ensuring high quality design is achieved. Section G3.5 details parking provision standards, and what is deemed appropriate by NCC. Information relating to EV charging infrastructure states that major developments are expected to provide a minimum of 2 charge points per 200 spaces.

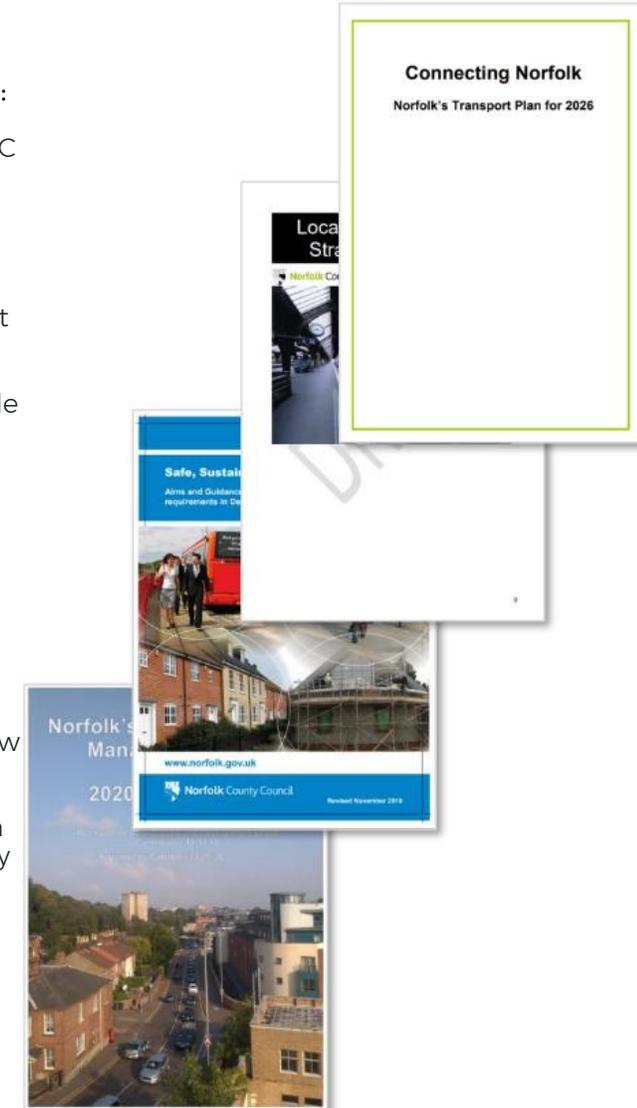
Local Transport Plan 4 Strategy 2021-2036 (2021): This plan is currently in draft format, and with consultation being completed on it recently, NCC intend to formally adopt the plan in April 2021.

Within the LTP4, Policy 2 emphasises the importance of transitioning to more sustainable travel modes, outlining that NCC aim to work with the private sector to create a charging point network that encourages EV uptake. The policy also states that EV charging infrastructure must be in place before people will view EVs as a viable option.

Policy 7 outlines methods to tackle the problem of air quality within the county, stating that new developments must demonstrate evidence of sustainable interventions, such as including EV charging points.

Outlined in Policy 11 is actions that will be taken by NCC to improve air quality in urban areas, in an effort to meet the desired thresholds for AQMAs. One of the suggested actions details how a transition to electric public transport will help facilitate an improvement in local air quality. Policy 12 is NCC's ambition of achieving a carbon neutral transport by 2030, which is stated as only being attainable if EV usage is encouraged.

While LTP4 describes numerous policies to support EV uptake, it also acknowledges that Norfolk currently has a lacking EV charging network, and that NCC does not possess the funding or expertise to provide these charging facilities.





Policy context and stakeholder engagement

Policy context

Norwich City Council

Norwich Local Plan: Development Management Policies Plan (2014): This document contains a suite of detailed planning policies to help guide and manage change in Norwich between now and 2026. It closely follows national planning requirements for sustainable development and positive, community based planning.

Within the plan, Policy DM29 states city centre public off-street car parking will only be permissible if it meets a range of criteria, one of which is provision for publicly accessible electric vehicle charging points. Further guidance is given in Section A3.20, which details that all new homes must have access to a charging point, either within a garage, or in a communal location.

Norwich City Council Environmental Strategy 2020-2025 (2020): The vision set out in this document specifies that Norwich aims to be recognised as one of the best councils in the country for addressing the issue of climate change. The measures needed to realise this aim are detailed in an extensive action plan, and include a review of EV charging provision to ensure Norwich is “zero emission ready” (Measure 1.26), the encouragement of more electric taxis (Measure 1.36), and exploration of the potential for partner organisations to assist in establishing EV charge points throughout the city (Measure 2.62).

Corporate Plan 2019-22 (2019): One of the priorities identified in the Corporate Plan is to develop a resilient city in the face of a changing climate. The plan specifies that this will be achieved through a number of actions, which includes improving EV charging provisions within the city.

South Norfolk Council

Local Plan: Development Management Policies (2015): The vision of South Norfolk’s local plan reflects the Joint Core Strategy of the Greater Norwich authorities, which specifies that by 2026, the region will be strong, cohesive, and forward-looking. Policy DM 3.12 details that planning permission for developments will be granted where the parking standards are adhered to, and these will reviewed to include provisions of dedicated charge points for EVs.

Environmental Strategy (2020): This strategy sets out that South Norfolk would like to see an expansion electric vehicle infrastructure within the district, stating that there are currently 20 existing public EV charge points across 5 sites. The document describes steps South Norfolk Council has taken to achieve this, such as introducing a leasing scheme for electric and hybrid vehicles, and working in coalition with NCC to promote new technologies for EVs.

Broadland District Council

Environmental Strategy (2020): This document provides a range of measures which Broadland District Council plan to undertake to expand electric vehicle infrastructure within the district. This includes the investigating opportunities to increase the number of publicly accessible charge points, consideration of installing charging bays in all council owned buildings, and introducing a new leasing scheme for EVs.

Place Shaping Guide SPD (2012): Only a minor mention of EVs is contained in this document, whereby Section 3.3 states that consideration should be given to convenience and accessibility of on street EV charging equipment.

Greater Norwich Authorities

Greater Norwich Local Plan (2021): Broadland District Council, Norwich City Council and South Norfolk Council have produced a joint strategic plan, the Greater Norwich Local Plan (GNLP). This plan is currently in the pre-submission draft stage, and is expected to be adopted in 2022.

The vision of the GNLP provides goals to be achieved for Greater Norwich by 2038, which includes supporting the growth of a diverse low carbon economy, leading to healthy and vibrant communities. Specifically mentioned in the vision is that electric vehicles will predominate throughout Greater Norwich in 2038.

The plan contains strategic policies which will help facilitate the transition to a low carbon economy. Policy 2 states that development proposals (where appropriate) are required to make provisions for the new technologies, explicitly listing electric vehicles within this.

Policy 4 of the GNLP, which relates to strategic infrastructure, shows support for electric vehicle use to assist in emissions reductions, detailing how this may be especially important in rural areas where public transport provisions vary.





Policy context and stakeholder engagement

Policy context

North Norfolk District Council

North Norfolk Local Plan 2016-2036 (2019): The Local Plan is currently in its first draft, and is being revised following a public consultation. The vision for this plan is boost economic activity and provide high quality services within the district, while simultaneously retaining a sense of unique identity. Policy SD16 provides guidance on EV charge point requirements for new developments, giving specific standards for various development classes. For example, residential developments with a private driveway must provide 1 active charge point per unit. Policy ENV9 discusses EV charge points as well, providing design guidance in an effort to reduce street clutter.

Design Guide SPD (2019): This document is also in a draft stage, and was open for public consultation during the same period as the local plan. The guidance reflects that of the draft local plan, providing specific requirements for new developments, such as 20% of parking spaces must include active EV charging provision for non-residential developments.

Borough Council of King's Lynn and West Norfolk

Air Quality Action Plan (2015): This document aims to tackle the Air Quality Management Areas (AQMA) within the borough. Measures within the action plan include investigation into providing EV charge points in public car parks and new developments within the town centre (Measure 19), and the possible development of a low emission strategy (LES) for the borough, which would encompass EV charging infrastructure.

Great Yarmouth Borough Council

Local Plan Part 2 Final Draft (2020): Policy II in the plan gives guidance relating to vehicle parking standards, stating that provision for electric car charging points will be actively encouraged in all new developments, with the aim of supporting the goals set out in the governments 'Road to Zero Strategy'. Further mention of EVs can be found in Section 5, where it is specified that housing developments should be designed with consideration of future requirements, such as EV charge points. The document also references that the Borough Council will work in partnership with NCC to establish appropriate provision of EV charge points within the borough.

Great Yarmouth Transport Strategy: Draft for Consultation (2019): The draft transport strategy for Great Yarmouth has a vision of supporting sustainable economic growth, while contributing to improved air quality and safety. Within the strategy, 2 electric vehicle schemes were identified as a conceptual option for Great Yarmouth to address the challenges and opportunities it currently faces in relation to transport. However; these were not shortlisted in the option appraisal stage.

Air Quality Annual Status Report (2019): Within the annual report, measures are provided with the aim of improving air quality, although the report also states that there has not been any exceedance of air quality standards currently. The measures described include procurement of electric vehicles for multiple Council Services, procurement of an electric pool car for Council Staff use, and the installation of rapid electric vehicle charging point in Council car parks.

Breckland Council

Breckland Council Local Plan (2019): This document sets out how the council will achieve its goal of sustainable growth by 2036, ensuring Breckland's communities mitigate against the impacts of climate change. Policy TR01 within the plan provides broad measures on how Breckland Council will achieve a sustainable transport network, and while EVs are not implicitly mentioned in the policy, support for a transition to a low carbon future is specified. The plan also references reviewing parking standards to include guidance for EV charging provisions for new developments, and specifies how Breckland Council will work with NCC to help provide EV charging infrastructure in large scale housing, retail and commercial developments.

Air Quality Action Plan (2015): This document aims to improve air quality within the district, with one of the key priorities being given as continuing to encourage sustainable travel. Measure 19 in the action plan states that greater provision of EV charge points will be investigated for the town, to encourage EV uptake. Measure 20 also outlines the possibility of measures that enforce bus operators to use vehicles with the best emissions standards, and while EVs are not directly referenced, they could be included in the scope of this measure.





Policy context and stakeholder engagement

Policy context

New Anglia LEP

The New Anglia Local Enterprise Partnership is a business led partnership between the local authorities of Norfolk and Suffolk, and local private sector businesses. The goal of the partnership is to determine local economic priorities, therefore facilitating economic growth, increased employment, and improved infrastructure.

The Norfolk and Suffolk Electric Vehicle Working Group, established in July 2020, aims to develop a connected strategic approach to the delivery of EV infrastructure across the region. The outcomes of a recent business forum were detailed in a position paper, and includes a set of operating principles that were agreed upon. These include:

- **Shared good quality data** and information on growth, transport, mobility, and electrification.
- **Diverse ways of working** between the public and private sector and innovative funding mechanisms.
- **Diverse delivery models** in order to have a good 'network'.
- **Consumer expectations** are important and the need for a 'just transition'.
- **Diversity of charging** including a core rapid network and a wider fast and slow network.
- **Wider benefits** need to be understood, such as grid stability, air quality improvements, and future investments.

Norfolk Transport Greenhouse Gas Assessment

In 2020, WSP produced a greenhouse gas (GHG) assessment for Norfolk County Council. This assessment examined current GHG emissions of vehicular traffic and produced a baseline scenario up to the year 2050. A selection of agreed alternative scenarios were then analysed in relation to this, studying the effects of hypothetical policy interventions and societal trends that would reduce the total transport GHG emissions produced in Norfolk.

Figure 15 shows the results from the car and van electrification scenario. This scenario explores the possible rate of uptake of electric vehicles up to 2030, and was created to inform Norfolk County Council's decision making around the roll out of electric vehicle infrastructure, regardless of future government policy interventions. The scenario assumes 36% of cars and vans to be electric by 2030, which results in an emissions reduction of 251,344 tCO₂e by 2030, when compared to the baseline scenario. This suggests that Norfolk County Council's support for electric vehicles uptake could be a particularly beneficial initiative.

Figure 16 examines the effect of the 2030 sales ban on new diesel and petrol cars, looking beyond **Figure 15** to 2050. This scenario assumes that as a consequence of the ban, 99% of cars and vans in Norfolk are electric by 2040, and 100% by 2050. outputs of this analysis shows that the ban from 2030 significantly increases the rate of uptake in electric vehicles in Norfolk, leading to a further large decrease in total traffic GHG emissions..

The results from this analysis demonstrate the magnitude of impact that electric vehicles have on reducing transport emissions, when compared against scenarios which rely on conventional internal combustion engine vehicles (ICE), and emphasise the importance of facilitating the increase in electric vehicles through infrastructure development initiatives.

Figure 15: Electrification of cars and vans to 2030

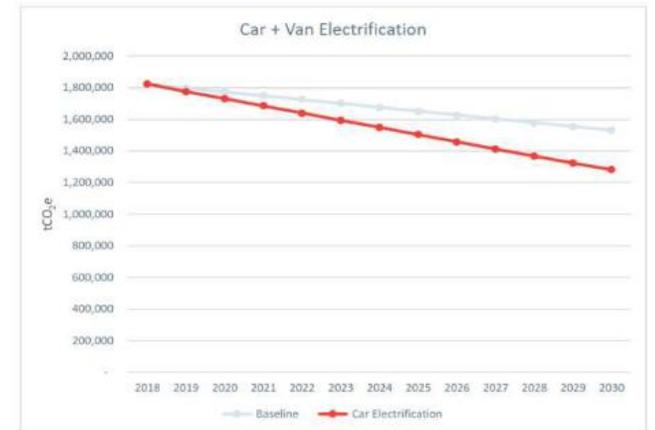
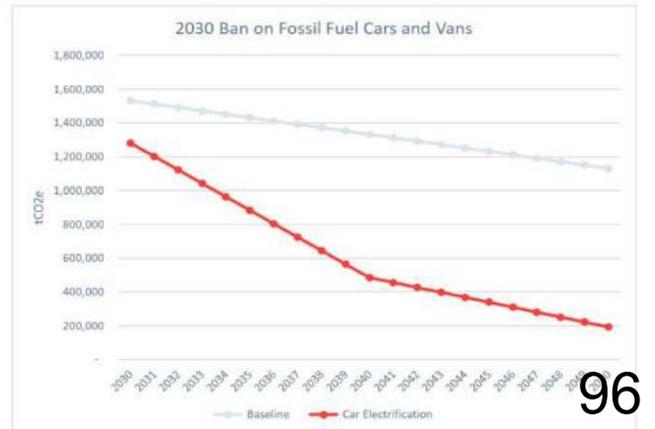


Figure 16: Impact of the ban on fossil fuel car and van sales from 2030



Overview

A key aspect of the study has been to engage with officers from local authorities within Norfolk, to understand their existing plans and ambitions for promoting EV uptake. This includes any future plans for charging infrastructure, opportunities and barriers, as well as any issues or challenges encountered to date, and what the County Council could do to support them. The study has also sought to capture their preferences and requirements in terms of charge point deployment and delivery models, to inform the subsequent recommendations.

The stakeholders that were engaged with as part of study included:

- Borough Council of King's Lynn & West Norfolk
- Breckland Council
- Great Yarmouth Borough Council
- North Norfolk District Council
- Norwich City Council
- South Norfolk Council

Policy

- EVCPs are not in existing policy
- Discussions underway regarding including requirements for EVCPs in future new developments

Barriers

- Grid capacity at future EVCP sites
- EVCP infrastructure cost
- Public sector funding is low and constrained
- Reliance on on-street parking
- Narrow streets
- Price of electric vehicles
- Rurality of the area
- Range anxiety
- Lack of chargers could have negative impact on tourism sector, a key economic sector for the area

Experience

- Successfully applied for OZEV grant funding in 2014/15
- Infrastructure frustrations - receive some complaints regarding existing EVCPs due to them not working or there being too few
- Constrained by budget and grid capacity
- Problematic due to reliability of the hardware
- Undertake maintenance and enforcement of North Norfolk and Breckland car parks, though each looks after their own EVCPs

Role / Remit

- Workplace charging at council sites
- Rapids for short stay, standard for long stay
- Highways authority needs to take lead county wide to provide a consistent approach
- County council to take the lead so that districts do not work in isolation
- Rapid EVCPs for short stay, standard for long stay if funding available

Plans and Aspirations

- Replace existing fast chargers as they are end of their life
- Currently looking at workplace charging schemes
- Long term concern is in resort areas so will require destination charging

Delivery and commercial model

- Needs to be consistent in terms of costs and access.
- Location is important, must be accessible to everyone
- Open-minded on public or private
- Preference would be for a bold, consistent delivery model across the county
- Cost neutral. Not looking to make money from charging but do not want to lose money from parking



Policy context and stakeholder engagement

Stakeholder engagement



Policy

- Sustainability Strategy which allocates funding for EVCPs across the district
- Declared climate emergency in 2019
- Not hugely prominent in current strategy but it is gaining pace

Barriers

- 51% of people live in a rural setting
- Long distance journeys due to rural nature make EVs less viable
- Accessibility to the EVCPs
- Lack of EVCPs
- Some car parks are county or town council owned
- Liability of costs
- Potential grid constraints

Experience

- 4 EVCPs that the council are responsible for, funded through OZEV funding
- Piecemeal approach so far
- Usage is low at the moment as EV ownership is low in the district and EVCPs have only been installed for 18 months (much of which was during the COVID-19 lock down)
- Some town councils are very sensitive over car parking loss

Role / Remit

- District are planning authority
- On-street should be led by the county working with town councils and districts
- Large employer - encourage council staff to use EVs or sustainable transport
- Be more joined up across districts, county and the LEP

Plans and Aspirations

- Carbon neutral by 2035
- Review fleet in 8 years time
- Market towns initiative - £150k to each of 5 market towns
- Swaffham aspiration to be EVCP mecca for Norfolk
- Provide at council owned car parks including at the council HQ

Delivery and commercial model

- Preferred model in development, open to ideas
- Dependant on town council priorities
- District council prides itself on being commercial
- Mixed economy within the district will require a flexible approach

Policy

- In early stages of developing a parking strategy and EVCPs will form part of that
- Included in the local plan
- EVCPs feature within legislation around new builds

Plans and Aspirations

- Successful with two applications to OZEV to supply 16 twin units - confirmed funding for £107k. Project is underway (procured through framework, have partner to provide EVCPs and UKPN have ensured grid capacity) now a delay in units being installed due to COVID-19
- 3 EVCPs will be installed at the leisure centre, but have been delayed by 12 months due to wider delays in the new leisure centre development.
- Demand led - Do not want to install EVCPs too early if demand is not there
- Planned regeneration of the largest estate (500 homes) will need to include EVCPs

Delivery and commercial model

- GYBC own assets, supplier will run, provide software and maintenance throughout lifetime of EVCPs
- Profit share between LA and CPO
- Hands off, low risk

Role / Remit

- Free charging for residents who do not have off-street parking
- Locations close to residential areas where difficult to home charge
- Standardisation of charging
- EVCPs should be considered as part of overall infrastructure of the county
- Standardisation of EVCPs
- Provide for visitors to area

Barriers

- Non-standard EVCPs
- Cost / affordability of EVs
- Income levels are low in the area
- Range anxiety
- Limited highways funding

Experience

- Joint local authority eastern region bid to HE
- Rapid recharge service in Fullers Hill car park - in place for 2 years - 1 dual charger
- Business, including hotels, holiday sites and supermarkets, have installed EVCPs in the area
- Frustrating and confusing

Policy context and stakeholder engagement

Stakeholder engagement

North Norfolk District Council



Norwich City Council



Policy

- Not specifically mentioned in corporate plans
- Political willingness

Barriers

- The main barrier identified by North Norfolk District Council for residents wanting to switch to EVs is the upfront cost of the vehicle itself, being significantly more expensive than ICE alternatives.
- When it comes to implementing EVCP infrastructure, the main barrier is also upfront costs, this is based on infrastructure costs to the authority including grid upgrades.

Experience

- Current project has taken a long time to deliver
- EVCPs deployed in 6 car parks
- Applied for funding for EVCPs in off-street car parks

Role / Remit

- District council do not provide on-street EVCPs, these are provided by the county
- Should make sure EVCPs are implemented in new build car parks
- Influence provision in new developments
- Implement EVCPs in car parks, leisure centres and country parks
- NCC should promote sharing of good practice on units, payment, delivery, innovation

Plans and Aspirations

- Delivering EVCPs into 4 car parks
- No confirmed plans beyond current roll-out
- Looking at providing Solar Canopies over car parks, linked to batteries and EV charging

Delivery and commercial model

- Minimising parking bay loss will be an important consideration
- At the moment they consider EVCP deployment to be a Council function
- Look to minimise revenue costs
- Drive to be more commercial
- Capital funding not an option

Policy

- Referenced in the Norwich Transport Plan
- There are requirements in place for EVCPs in new developments

Barriers

- Low public trust in EV technology
- High cost of EVs
- Limited second hand market of EVs

Experience

- Norwich CC stated that their current experience in implementing EVCPs has been ok. There have been no major complaints and all EVCPs have been installed successfully

Role / Remit

- Transition to EVs in the council fleet where possible
- City council are not a highway authority so it may not be a role for the council to provide EV services outside their own parking assets
- Introduction of work place charging levy

Plans and Aspirations

- Have applied for HE funding
- Cater for high density housing without off-street parking
- 45 EVCPs in 5 years via UKPN charge collective project

Delivery and commercial model

- Use grant funding where possible
- Parking revenue is important to maintain services
- Enabler and asset manager on council owned land
- Own EVCPs on council owned land



Policy context and stakeholder engagement

Stakeholder engagement

South Norfolk and Broadland Council*



Norfolk County Council



Policy

- Environmental strategy has not been adopted
- Want to look at future policy for new developments

Barriers

- High cost of EVs and range anxiety
- Concerns some segments of the population may struggle to adapt to new technologies such as EVs
- New technology could serve to make EVCPs redundant

Experience

- EVCPs installed 2 years ago - has since been an issue as the back office provider (Vanttenfall) have withdrawn from UK.
- BMM solutions have been excellent as an EVCP supplier/operator
- Remit for EVCPs in Broadland but no paid car parks in Broadland
- Chargepoints were due to be installed at offices and leisure centres put on hold (due to COVID)
- Occasionally get people that can't access the machines. 1 complaint in 2 years that it was too expensive
- OZEV funding - 4x fast chargers 22kw in 5 car parks in 5 market towns - Network of 20 across the district
- Positive experience so far - securing funding most difficult

Role / Remit

- SNC role is to provide a top up charging service for shoppers and those using their car parks
- Political issue - would not expect a council or government to build petrol stations
- NCC to encourage a common platform across the county
- Provide EVCPs at council offices and leisure centres

Plans and Aspirations

- Overriding ambition is to encourage local residents to use EVCPs as well as visitors
- Want to continue to expand the network
- Approaching OZEV for another grant
- Ambition to have network in council car parks to provide for local people
- No plans for on-street charging
- Capacity for up to 16 EVCPs in each council car park

Delivery and commercial model

- Part of Norfolk Parking Partnership
- Co-op have installed free EVCPs
- Need to balance loss of parking income of spaces
- Keen to be innovative
- Cost neutral - pay for own up keep
- Small profit as a revenue stream for future to reinvest into EVCPs.

Policy

- Political interest
- Not prominent in current policy
- Lacking direction in terms of long term plan
- Gaining momentum
- Last local plan shifted emphasis away from county policy to district policy

Barriers

- Infrastructure
- Access - desire to be no more than 3 minutes away from an EVCP
- Range anxiety
- Ongoing cost
- Funding
- Government grant does not cover all of cost
- Do not want EVCPs to encourage private vehicle use in urban centres
- On-street can be contentious, how many per street, what technology etc

Experience

- Historically has been fragmented and needs to be pulled together
- EVCPs at park & ride sites
- Collaborate and engage with the right partners early on - working with partners has smoothed process e.g. UKPN

Role / Remit

- County wide strategy to corral investment across the districts
- County level of intervention may be to guide districts
- Not about technology, more about mobility
- Last mile opportunities around park & ride
- Think strategically, long term goals
- Destination charging is out of scope
- Scope of county deployment is residential on-street
- Park & ride sites

Plans and Aspirations

- Each member has £10,000 funding which could contribute towards EVCPs in local areas
- Balanced approach - do not want to focus on urban centres and leave rural hinterland with no infrastructure
- Follow industry lead

Delivery and commercial model

- Urban centres are likely to be taken care of by the private sector
- Do not want to own or operate the assets, county to be a facilitator
- Cost neutral
- At most a modest return/profit share

*In July 2018, both South Norfolk and Broadland Councils agreed to move forward with a collaborative partnership



Policy context and stakeholder engagement

Stakeholder engagement

Summary

Due to the area being made up of six district councils and the county council, there are naturally both convergent and divergent opinions when it comes to the various aspects of EVCP provision and the promotion of EV uptake. Here we have sought to highlight any key findings, emerging themes and points of difference from the responses to the consultation exercise.

Planned EVCP delivery

Across the majority of the authorities, there are no specific numbers for planned future EVCP deployments, often owing to lack of budget. Most have focused on firstly completing some initial EVCP deployments at a number of identified priority sites. Whilst others have adopted a more demand responsive approach. Norwich are the only authority with specified number of future EVCP deployments planned (45), which are to be implemented via the UKPN charge collective project. Although not planned, South Norfolk have the capacity for up to 16 in each car park, subject to the availability of funding.

Overall, the pipeline of future planned public sector led EVCP deployment across the County is limited, though it is important to note that a number of major private sector led deployments are planned, including a GridServe Electric Forecourt. of demand and the need for them to act / implement EVCPs.

Delivery and commercial models

With regards to delivery models, most authorities are open minded. Norwich and LCC however specified that they see their authorities taking a more enabling and facilitating role when it comes to delivering EVCPs, with an expectation that the private sector would fund, manage and maintain the infrastructure.

In terms of the preferred commercial model, most authorities did not have a specific preferred model but stated that they want to take a cost neutral and low risk approach. Breckland was the only authority that stated they would want to actively seek to make a return on the implementation of EVCP infrastructure through a profit share with the CPOs.

Remit

A recurring theme throughout the engagement sessions was the recognition that local authorities needed to lead by example, so potentially greening their pool cars and other vehicles and installing EVCPs in council owned car parks, and at council facilities. The district councils also believe that the remit of the county is to take the lead to ensure the reasonable EVCP coverage and ease of use amongst EV owners across the county.

A common platform, or network roaming, was also highlighted by districts as essential for equitable EVCP roll-out across the county. This standardisation could allow easier roll-out by authorities and encourage EV uptake if they are more convenient and user friendly.

The importance of writing EV related measure into local planning Policy was raised by some of the authorities as having a role in influencing EVCP deployment across the county. As the current policy is lacking EVCP related targets and standards. This includes standards for new developments. North Norfolk felt that part of their remit should be to ensure developers provide for adequate charging infrastructure within new developments.

The county council noted during the engagement that it would be important to adopt a more strategic approach going forwards, when considering EVCP deployment, and assessing the longer term plan in terms of EVCP infrastructure.

Technology

The role of different charging technology options were discussed in the engagement sessions. Rapids were favoured by authorities for short stay destinations such as site along larger trunk roads. However, there was a general consensus to have a mixed approach, and implementing slow or standard chargers to cater for residential locations, and fast chargers at destination sites.



Policy context and stakeholder engagement

Stakeholder engagement

Summary

On-street

Residents and employees who are reliant on on-street parking were widely recognised as key group requiring support to access EVCPs. Each authority highlighted the need to address this when installing new EVCP infrastructure across the county. Breckland did note however, that they are a predominantly rural authority, with a high proportion of homes with off-street parking, so was less of an issue. Breckland also stated that as the highway authority, the remit for on-street should fall to the county, with district being responsible for providing EVCPs in off-street car parks.

To improve charging for those reliant on on-street charging, North Norfolk, Norwich and West Norfolk suggested destination and/or workplace charging as a solution, as this negates the need to deploy EVCPs on-street. Great Yarmouth and South Norfolk stated that free or low cost charging at off-street hub locations for those reliant on on-street parking would be a solution that they would consider.

Experience

There is wide ranging experience across the county, some authorities have 30+ EVCPs installed, others have as few as 3. The current charge point deployments also varies, some have rapid, others have focussed on fast. To date the experience of each authority when implementing EVCPs has been mixed, with the majority have encountered issues, due to factors such as procurement processes and technological faults.

Policy

EVs and EVCPs are not prominent in current published policy documents across the county. However, a number of authorities noted that the topic is rapidly beginning to gain more prominence, and is expected to feature in updated local plans and policy. For example, Great Yarmouth are developing a parking strategy which will include EVCPs in public car parks.

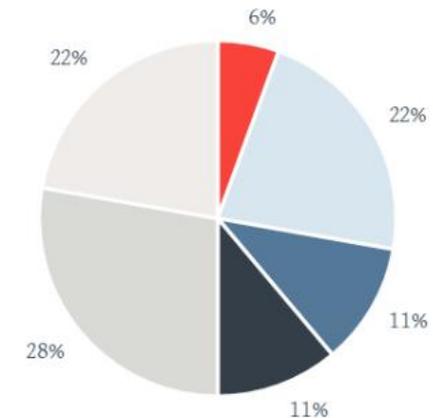
Barriers

When discussing barriers, there were two distinct topics, barriers to uptake of EVs and barriers to implementing EVCPs.

When discussing the main barriers to the uptake of EVs, range anxiety was the most commonly cited concern. Access to charging infrastructure a further key concern. Affordability was also frequently mentioned due to income levels across the county being relatively low.

Five of the seven authorities highlighted infrastructure costs as being a barrier to implementing EVCPs. This was the only response that was cited by multiple authorities. Other barriers highlighted by individual authorities included grid capacity, evolving technology and the risk of technical obsolesce, a lack of demand, accessibility of EVCPs, land ownership, parking bay loss and politics.

Figure 17: Impact of the ban on fossil fuel car and van sales from 2030



- On-street parking reliance
- Rural area
- Cost of EVs
- Range anxiety
- Income
- Accessibility of EVCPs

Section 3

Forecasting Demand and Charging Requirements



Forecasting Demand and Charging Requirements

Overview & approach

Overview

Having baselined the existing EV uptake and EVCP provision across Norfolk, **Section 3** focusses on forecasting future uptake of EVs up to 2030.

Using the demand forecast, analysis has been undertaken to provide an indication of requirements for publicly accessible EVCPs. Those requirements have informed the recommendations presented later in this report.

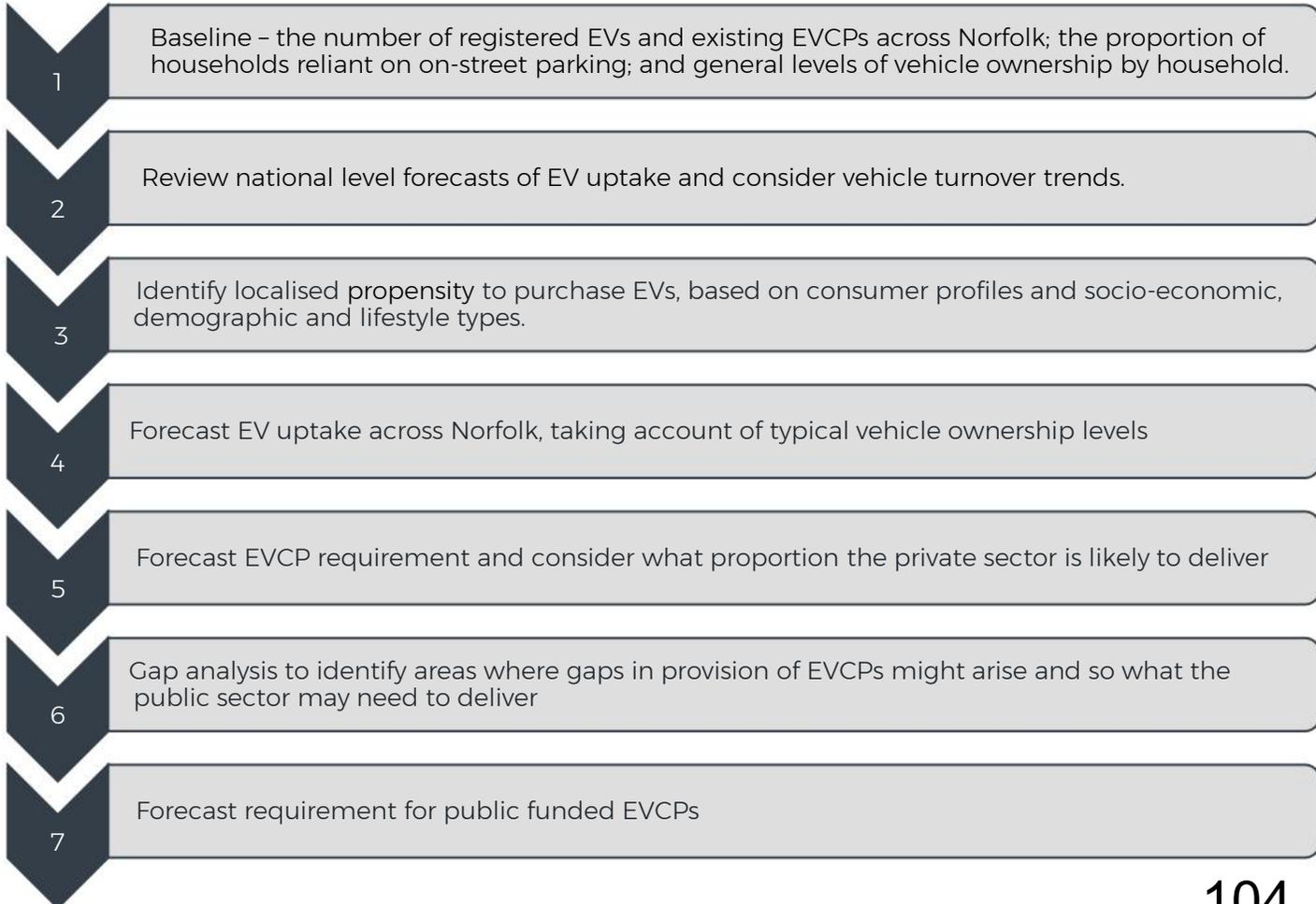
This section of the report explains the approach to forecasting demand and EVCP requirements and presents the results.

Approach

The broad approach taken to forecast EV uptake across Norfolk and subsequent requirements for EVCP provision is summarised opposite.

The approach utilises WSP's in-house **EV:Ready** tool to derive forecasts for future EV uptake. **EV:Ready** enables sophisticated EV uptake forecasting and scenario testing.

It generates granular forecasts to a neighbourhood level, accounting for highly localised spatial variations in the key determinants of EV uptake rates, including consumer profiles, socio-demographics, the availability of off-street parking, vehicle ownership, vehicle sales and turnover rates and vehicle ownership trends.





Forecasting Demand and Charging Requirements

EV uptake forecasting

Forecasting EV uptake

In order to assess the requirement for future EV charging infrastructure across Norfolk it is first necessary to forecast the growth in EVs and future charging habits. For the purposes of this study, an EV is defined as a BEV or PHEV which fulfils the OZEV requirements to qualify as a ULEV (Ultra-low Emission Vehicle), i.e. any vehicle that: uses low carbon technologies; emits less than 75g of CO₂/km from the tailpipe.

There has been rapid and accelerating growth in the sales of EVs over the past decade, with an increasing choice of models available, developments in battery technologies improving range and reducing costs, as well as sustained government grants and exemptions to subsidise purchase costs and reduce ownership costs. There is also growing consumer acceptance; 26% of the population reports they are likely to purchase a ULEV as their next vehicle.

National EV sales trends and forecast growth

Baseline EV registrations presented in **Section 1** are informed by available data from DfT on registered vehicles and type by local authority areas.

A comprehensive review of available literature and other key determining factors for uptake was undertaken, including:

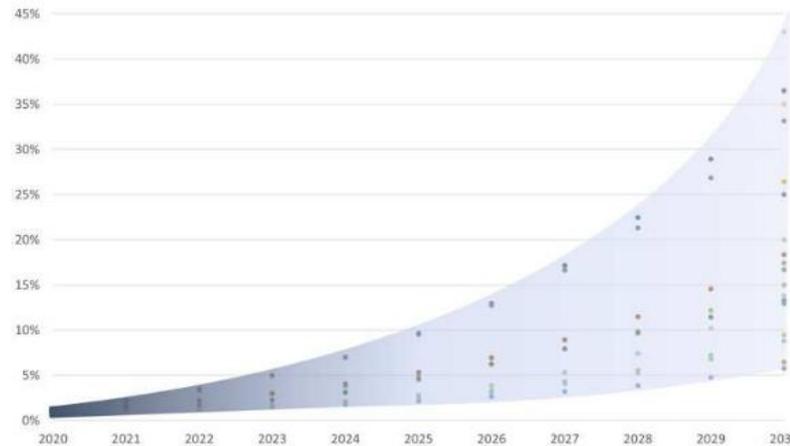
- Industry forecasts, research and studies.
- Planned model launches by vehicle manufacturers.
- Relevant committed key policy interventions.

A wide range of industry forecasts were assembled and reviewed, including Bloomberg NEF, DfT, National Grid, SMMT, IEA, ICCT and Deloitte. These forecasts range widely in their estimates of the share of EVs within the overall vehicle fleet by 2030, from as high as 42% to as low as 6%, and averaging at around 20%. **Figure 18** demonstrates the range of forecasts collated.

In addition to benchmarking against this range of industry forecasts, the latest sales data was reviewed alongside other near term trends in year-on-year sales growth.

The proportion of total vehicles registered in Norfolk that are EVs (0.3%) is currently less than half the national average (0.7%).

Figure 18: Range of industry forecasts for EV uptake



References: SMMT (2020) Car Registrations. Available at: <https://www.smmt.co.uk/vehicle-data/car-registrations/>

McKinsey & Company (nd) Automotive OEMs. Available at: <https://www.mckinsey.com/industries/automotive-and-assembly/how-we-help-clients/automotive-oems#>

SMMT (2020) Average Vehicle Age. Available at: <https://www.smmt.co.uk/industry-topics/sustainability/average-vehicle-age>

DfT (2019) Transport and Technology: Public Attitudes Tracker. Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/847653/Summary_Report_of_Wave_4_of_the_Public_Attitudes_Tracker.pdf

Beyond 2020, further step changes in the sales growth rates of EVs are anticipated, with the principle drivers being:

- Strong pipeline of new model launches and production volumes.
- Purchase price parity with conventional vehicles is expected from 2024-25 in light duty segments.
- A recent notable development in November 2020 was the announcement from Government that the ban on new petrol and diesel vehicles would be introduced in 2030, sooner than previous 2040 target, and the 2035 date that was consulted on. This poses some challenges in forecasting uptake, as most industry forecasts precede this, so will not account for its impact on future uptake, though some do anticipate increasing policy support within their scenarios in more general terms. At the time of writing, industry forecasts published since the announcement, or with specific referenced to a 2030 ICE ban scenario were limited to forecasts by Greenpeace, developed by Cambridge Econometrics and Element energy, which forecast a 20% increase in the number of EVs on the road relative to a 2035 ban, rising from 35% to 42%. Whilst a more conservative estimate from Platts Analytics estimated EVs could account for 20% of vehicles by 2030 following the announcement.



Forecasting Demand and Charging Requirements

EV uptake forecasting

However, a key downside risk amongst the near term trends has been the considerable economic uncertainty related to the impact of the COVID-19 pandemic. To date the sales of EVs have held up well despite sharp drops in the sales of conventional vehicles. Year to date figures from SMMT found that in February 2021, diesel sales were down 61.7% on the same period a year ago, and petrol sales were down 48.5%, whilst BEV and PHEV were up 49.0% and 35.2% respectively.

The momentum behind EV sales growth will inevitably be slowed in the near term, and whilst growth is likely to continue in absolute terms, the rate of acceleration in that growth is likely to be stifled. With a looming economic recession, consumers' purchasing decisions are expected to be postponed due to the reduction in disposable income, particularly when it comes to discretionary spending.

McKinsey recently published an article in which it states "Automotive OEMs (original equipment manufacturer) and players within the mobility industry are among the hardest hit. Over the long term, COVID-19 could have a lasting impact on mobility as it drives change in the macroeconomic environment, regulatory trends, technology, and consumer behaviours. These trends could slightly decrease investment in EVs and market share could fall below the projected levels for the next few years". It notes, however, that these trends will probably vary significantly globally, and that in Europe the projected increase in EV market share is still expected to remain on broadly the same trajectory, due to strong Government support and tightening regulations, but slightly delayed

The revised deadline for the banning of petrol, and diesel vehicles and the COVID-19 outbreak, are not fully accounted for within the majority of industry forecasts, as most pre-dated these developments. This has been factored into the resultant forecasts for EV sales growth rates, with a mid-range forecast EV uptake scenario of approximately **27% of total vehicles in Norfolk to be EVs by 2030**.

Wider Fleet and Vehicle Turnover Trends

In order to forecast the number of EVs it is also necessary to assess current and future vehicle fleet size, vehicle replacement rates, average vehicle age when scrapped and the range of ages at which vehicles are scrapped.

The baseline vehicle fleet for Norfolk (610,828) was projected forward based on an average of the National Grid Future Energy Scenarios (FES), which include a range of assumptions around the share of travel by public transport, the growth in ride sharing and autonomous vehicles. This equates to a steady growth in vehicle numbers up to 2035, after which point growth rates slow, peaking in 2041 and then slowly declining.

The average age a vehicle is scrapped in the UK is approximately 13 years (SMMT).

Through analysis of this data, there are **forecast to be 628,116 vehicles in total registered in Norfolk by 2030**, a 2.8% increase on 2019 figures.

Accounting for local factors

The *EV:Ready* forecasts account for a number of local factors in determining localised variations in EV uptake, these include:

- Propensity to purchase or lease an EV – based on socio demographics and consumer attitudes.
- Car ownership.
- Reliance on on-street parking.

The differing attitudes and socio-demographic circumstances of local populations were analysed to identify their likely propensity for registering (purchase or lease) an electric vehicle, using the latest version of Experian's Mosaic UK (Generation 6 datasets). This includes a wealth of richly detailed demographic data for the whole of the UK, detailed to full postcode level as well as property and tenure information, economic indicators and census data. As well as earnings, demographics and lifestyles, the data accounts for technology adoption and attitudes to environmental issues, as well as likelihood to buy a new vehicle and have vehicle, and hybrid vehicle ownership (derived from DVLA data).

Mosaic clarifies the entire UK population into one of 66 consumer groups, based on the above data. Each of the 66 consumer groups has been scored for their propensity to switch to an EV based on 10 different indices, which provide a statistical measure of variation across a representative group of individual data points. **In Norfolk the average propensity is slightly below the UK average.**



Forecasting Demand and Charging Requirements

EV uptake forecasting

We have also accounted for **vehicle ownership** based on ONS data by household, as whilst the household may fit the characteristics of an early adopter in terms of their propensity, if they are not a vehicle owner, they would not be expected to become one just to purchase an EV. Vehicle ownership levels are relatively high in Norfolk (564 cars/vans per 1,000 people) relative to the UK average (487 cars/vans per 1,000 people). It is highest in South Norfolk, and lowest in Norwich.

A further important factor is the extent to which areas have **access to off-street parking** or are reliant on-street parking. To date, those with access to off-street parking where they can conveniently and reliably charge their vehicle overnight have been over 3 times more likely to switch to an EV. 93% of EVs are estimated to have access to home charging by NextGreenCar in the Committee on Climate Change's 'Plugging the Gap' (2018) study, despite between 20-40% of vehicles nationally having no such access to off-street parking. The detrimental impact of a lack of off-street parking is however expected to lessen over time as EV ranges increase, recharging times shorten and public infrastructure improves, assumed to reduce from 40 to 10%.

The likelihood of an area having access to off-street parking is based on the typical property types of the predominant mosaic group at a postcode level and assumes that terraced dwellings and converted flats are reliant on on-street parking. All other housing types, such as detached dwellings, semi-detached dwellings and purpose-built flats, are assumed to have dedicated off-street parking and therefore not reliant on on-street parking. In Norfolk around 25% of households are reliant on on-street parking.

Forecasting EV uptake - results

Table 13 presents the results of the analysis undertaken, showing forecast EV uptake across Norfolk, up to 2030.

The forecast uptake of EVs across Norfolk by 2030 is 168,279 (27% of vehicles), rising from 1,931 in 2019 (0.3%) and 25,924 (4%) in 2025. These forecasts seek to provide an objective and measured assessment of an EV uptake scenario across Norfolk, accounting for the trends in: total vehicle sales; vehicle age; turnover rates; the localised propensity to purchase an EV of the local population; vehicle ownership levels; and reliance on on-street parking.

South Norfolk is projected to have the greatest share of the EVs (31,062, 19%), which is in part due to South Norfolk being one of the larger districts in terms of total vehicles registered, though King's Lynn & West Norfolk has more, and Breckland has only marginally fewer.

Relative growth in EV uptake is forecast to be fastest in Norwich and South Norfolk, followed by Broadland.

Great Yarmouth and Breckland are projected to see slightly slower growth in EV uptake.

Table 13: Forecast EV uptake for Norfolk up to 2030

EVs Registered	2019 (Actual)	2025	2030
Norfolk	1,931	25,924	168,279
Breckland	260	3,488	26,492
Broadland	346	4,616	27,554
Great Yarmouth	97	1,400	13,410
King's Lynn & West Norfolk	285	4,143	28,945
North Norfolk	256	2,986	20,472
Norwich	239	3,500	19,040
South Norfolk	446	5,713	31,062
% EV	0.3%	4.9%	26.8%

Note: There is a small discrepancy (0.1-0.8%) between the District sub-totals and the total figure for Norfolk, due to small rounding errors incurred through the forecasting process, and the presence of a small number of vehicles in each Local Authority area which are recorded as 'Local Authority District unknown' within the vehicle registration records.



Forecasting Demand and Charging Requirements

EV uptake forecasting

The share of annual new vehicle sales made up of EVs in Norfolk is forecast to reach 89.4% in 2030, rising from 2.1% in 2020, and 16.6% in 2025.

As demonstrated in **Figure 19**, this results in an increasingly rapid drop in the share of total vehicles made up by internal combustion engine (ICE) vehicles, shown by the blue line, and the increasing share of EVs is shown by the red line.

Figure 19: Forecast EV uptake for Norfolk, up to 2030

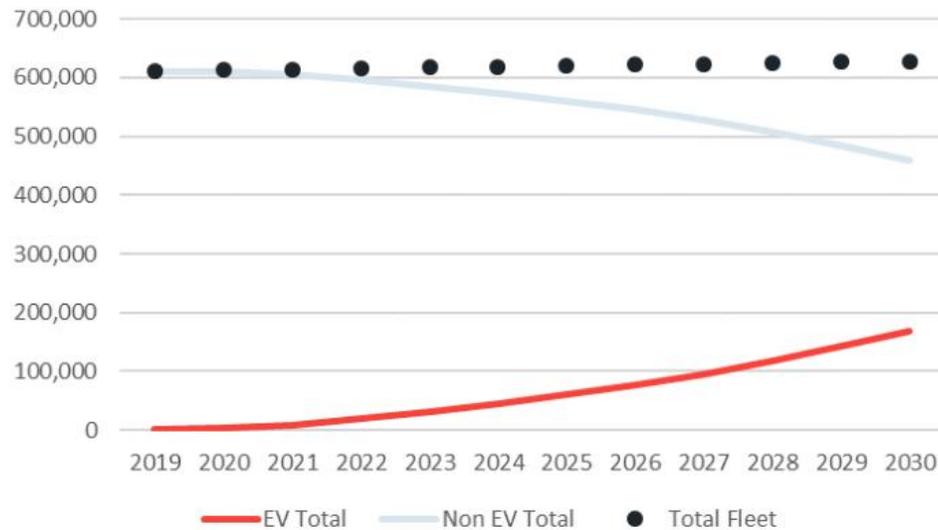
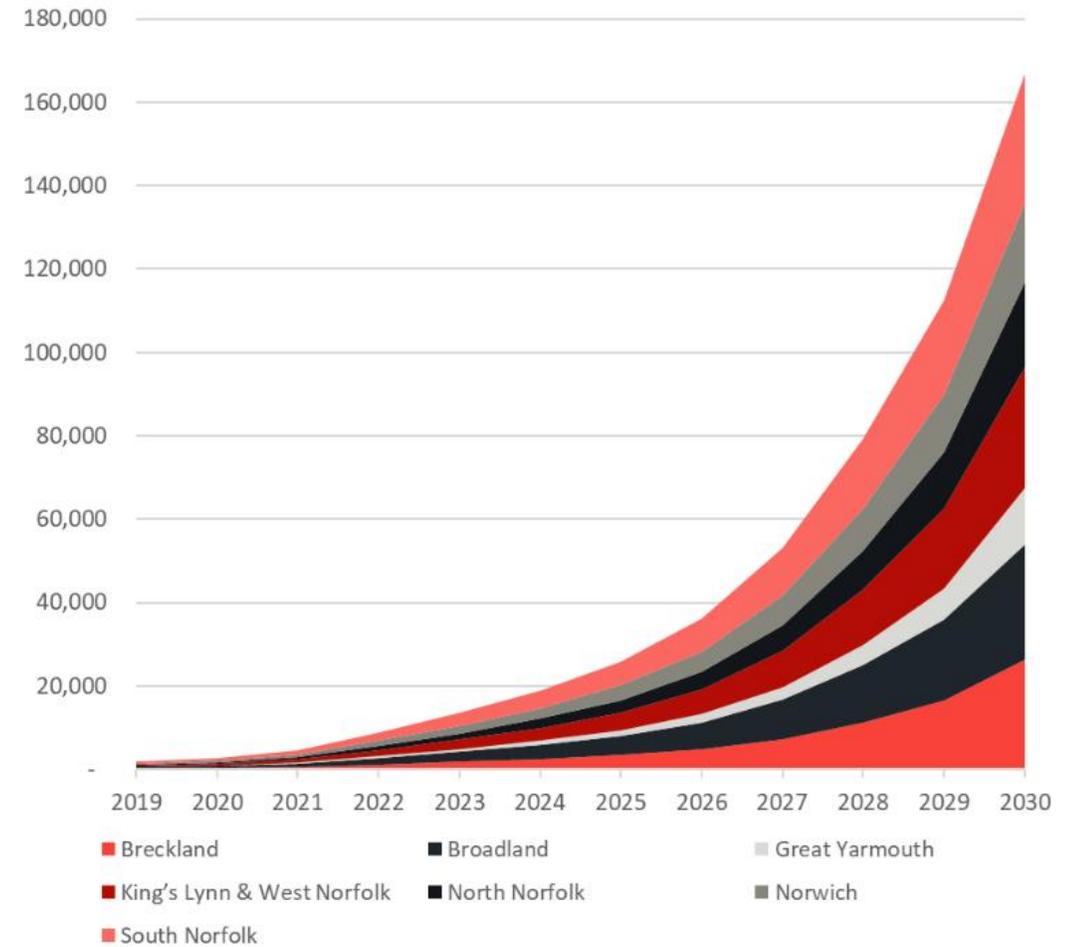


Figure 20: Forecast EV registrations by authority



Forecasting Demand and Charging Requirements

EV uptake forecasting

Spatial analysis of forecast uptake

The outputs derived from the *EV:Ready* tool allow for spatial variations in EV uptake across Norfolk to be examined, which subsequently enables the requirement for EV charging infrastructure across the county to be determined.

Figures 21-23 present a number of the key determinants in forming these forecasts.

Propensity of Local Residents to Switch to an EV

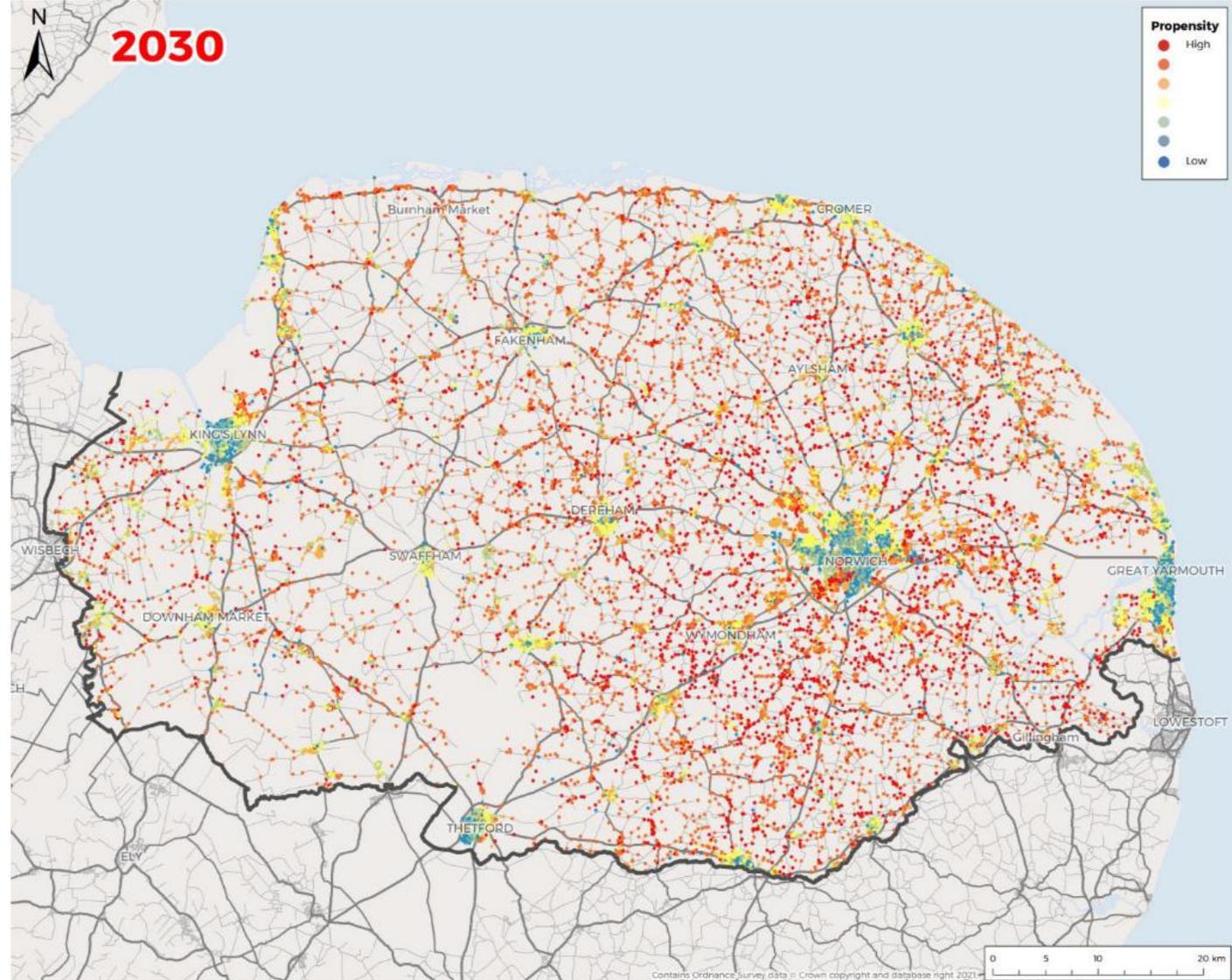
Figure 21 presents the forecast propensity of residents to register an EV across Norfolk, based on socio-demographic factors such as income, education and lifestyles, as well as attitudes towards new technology and to environmental issues, as well as their likelihood to purchase a new vehicle and hybrid vehicle ownership.

The outputs of this analysis show that areas which feature a greater propensity towards switching to an EV are widely dispersed across the county, with slightly greater concentrations in the eastern half than in the west.

Areas which exhibit low propensity for switching to EVs can be seen in the central urban areas of Norwich, King's Lynn, Great Yarmouth, and Thetford. There is also a spread of smaller towns across the county which feature low to moderate propensity, such as Cromer, Swaffham, and Dereham.

This is only one of several factors influencing EV uptake, however, as discussed on the following pages.

Figure 21: Forecast Propensity of Residents to switch to Electric Vehicles



Forecasting Demand and Charging Requirements

EV uptake forecasting

Vehicle ownership levels

Figure 22 presents average vehicle ownership levels by household at a postcode level, based on ONS data.

As previously mentioned, understanding the baseline car ownership levels across the county is imperative. This is largely due to the fact that some local populations may have a high propensity to switch to an EV in theory, but if they are not already a vehicle owner then it is unlikely they will become one for the sole purpose of purchasing an EV. Therefore, EV propensities should not be considered isolation, but rather in conjunction with the car ownership levels of a given area.

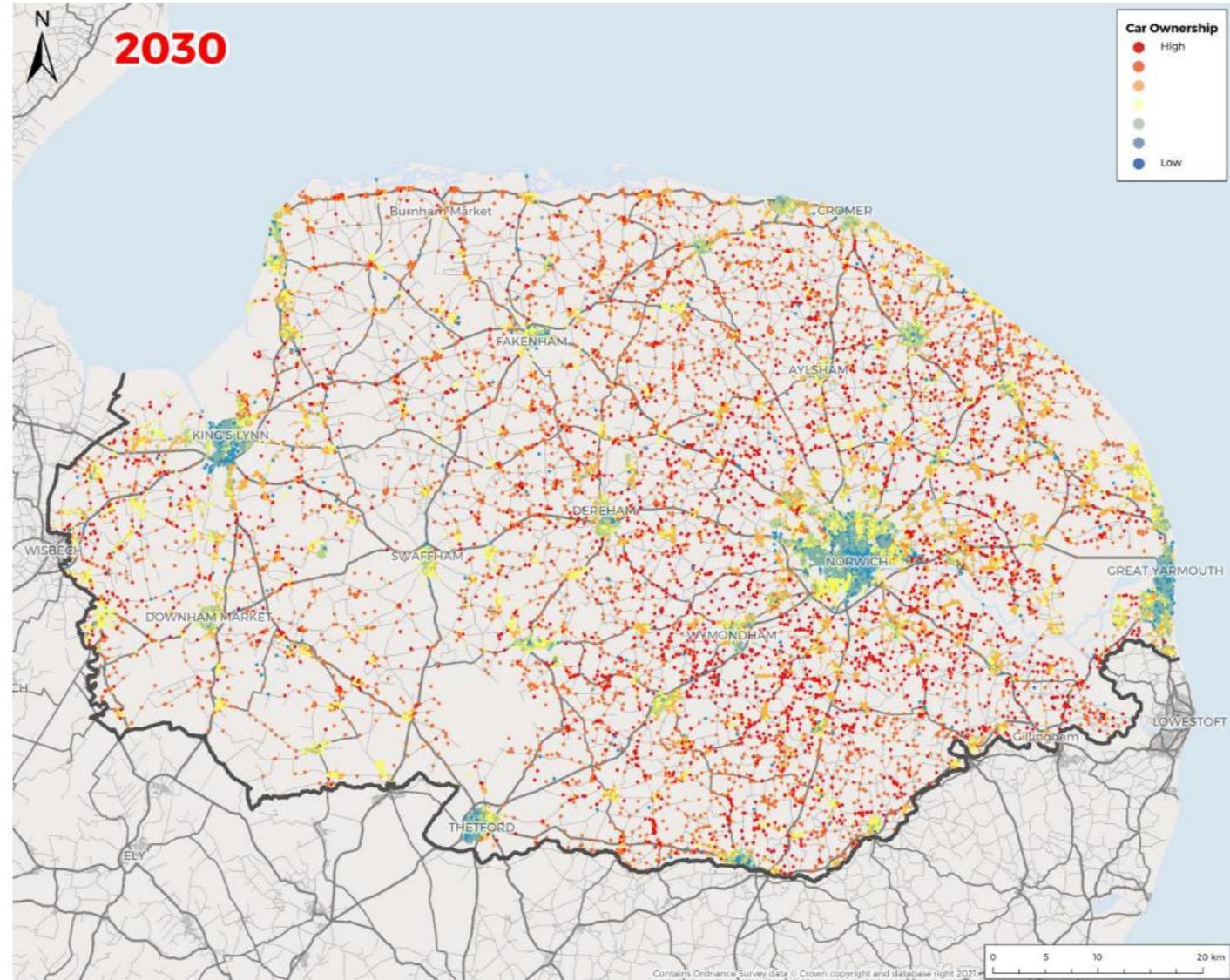
From studying **Figure 22**, an immediately apparent pattern is that lower levels of car ownership are concentrated within the larger urban conurbations, such as the three cities within the county (Norwich, King's Lynn, and Great Yarmouth). This result is to be expected, as urban centres typically feature greater public transport accessibility, and higher levels of parking constraints.

In addition to the above, some of the smaller towns also feature low levels of car ownership, including Thetford, Wymondham, and Fakenham.

Places of high car ownership are scattered across the county, mainly being found in rural areas and villages that are located at a distance from the urban centres.

Blank areas on the map indicate a lack of data due to these areas being very low in population

Figure 22: Vehicle Ownership



EV uptake forecasting

Availability of Off-street Parking

Figure 23 presents the average share of households with access to off-street parking at a postcode level, based on the typical property types of the local population and their profile. This method serves as a proxy to identify areas of greater dependency on on-street parking.

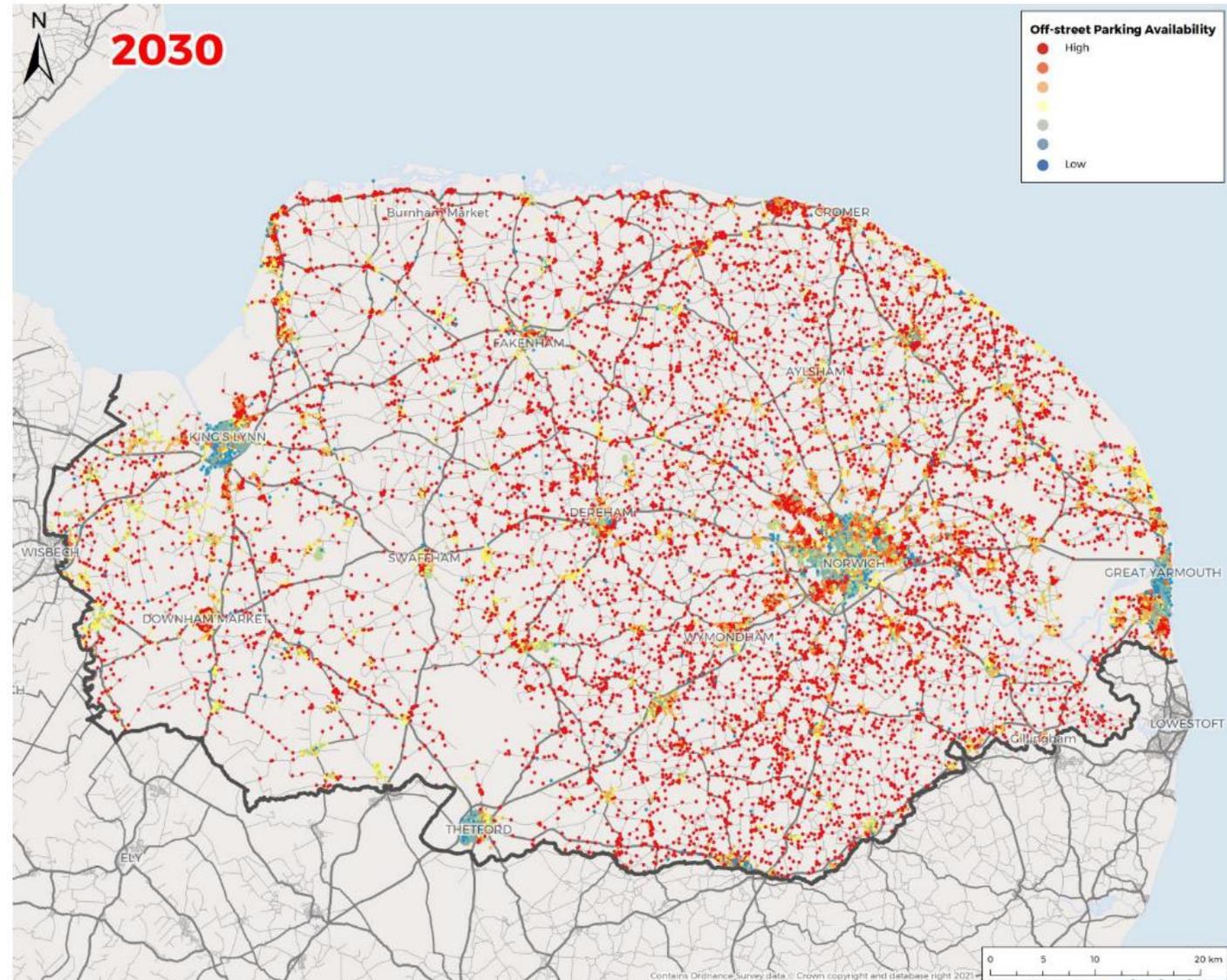
For many areas within Norfolk, off-street parking is readily accessible, which reflects the low density of household across the more rural regions of the county.

The exceptions are the denser urban areas, with a greater proportion of terraced dwellings and converted flats, which are assumed to be more dependant on on-street parking. This is particularly noticeable in Norwich, with King's Lynn, Great Yarmouth, and Thetford also displaying relatively low levels of on-street parking availability.

Table 14: Households (HH) reliant on Off-street Parking (OSP)

Authority	Households	HH reliant on OSP	% HHs reliant on OSP
Breckland	60,190	15,285	25%
Broadland	57,329	10,385	18%
Great Yarmouth	44,142	15,270	35%
King's Lynn & West Norfolk	67,041	16,952	25%
North Norfolk	49,143	9,122	19%
Norwich	66,584	23,506	35%
South Norfolk	65,606	12,972	20%
Norfolk	410,035	103,491	25%

Figure 23: Availability of Off-street Parking



Forecasting EV uptake across Norfolk

The preceding inputs and analysis culminate with a detailed spatial forecast of EV uptake across Norfolk up to 2030.

As can be seen in **Figures 24 and 25** (overleaf), the competing effects of the local populations propensity for switching to EVs, their car ownership levels, and the extent to which they are reliant on on-street parking, serve to create a varied picture of EV ownership across Norfolk, as areas with high propensities towards EV ownership are often partly offset by also being areas of lower car ownership and greater reliance on on-street parking

Figure 24 presents EV uptake measured by total number of vehicles, which initially suggests that there uptake is relatively low across most the county.

However, when an alternative metric of EV uptake is presented in **Figure 25**, which examines EVs as a proportion of total registered vehicles, the level of uptake increases significantly across the majority of Norfolk.



Forecasting Demand and Charging Requirements

EV uptake forecasting

Forecasting EV uptake across Norfolk

As described earlier, **Figure 24** depicts forecasted EV uptake across Norfolk in 2030, presented by total number of EVs registered.

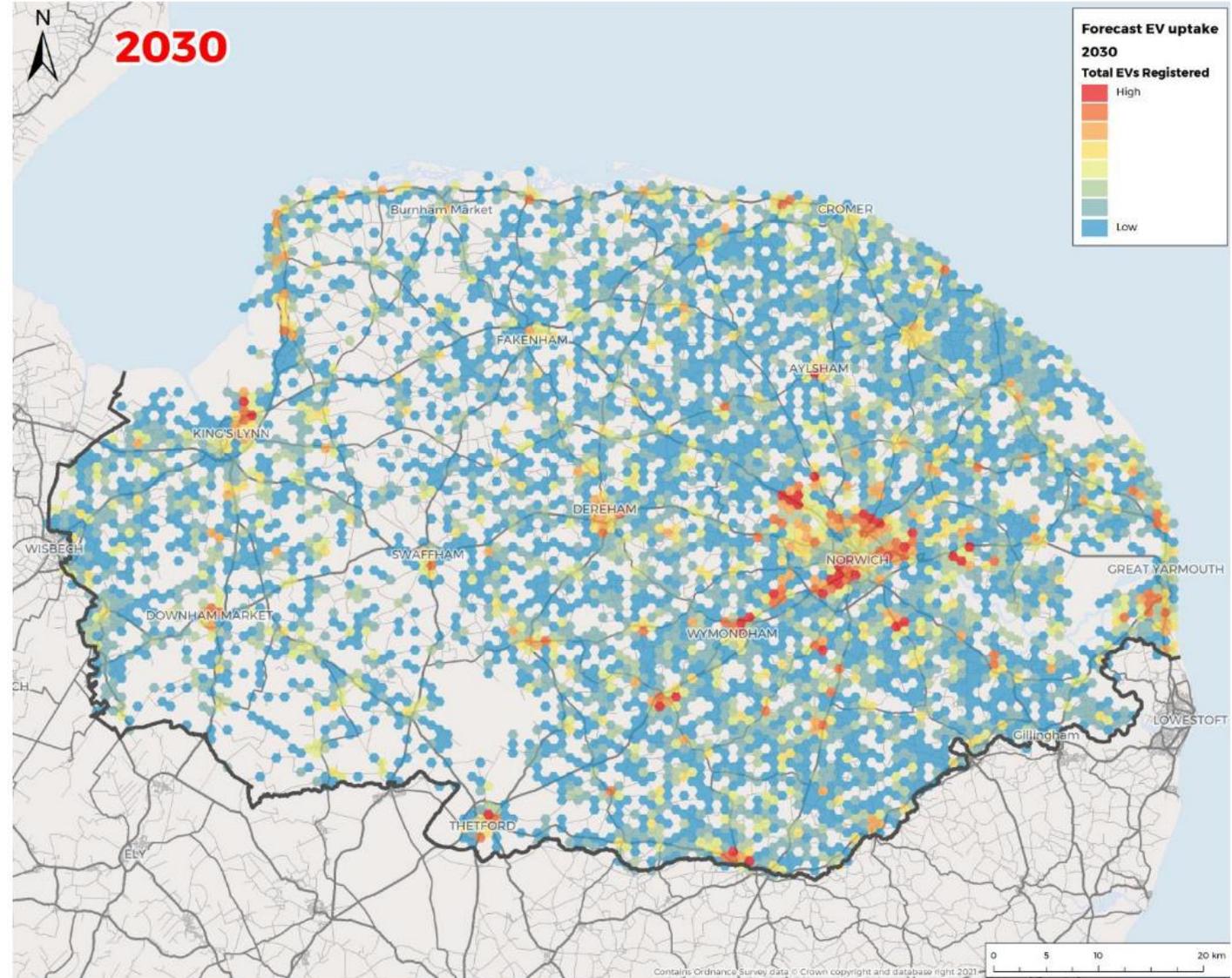
At a district level, most of the county appears to feature low uptake, with Norwich being the main region displaying any high values.

At a more granular level, there are smaller pockets of moderate to high uptake in Norfolk's other cities, King's Lynn and Great Yarmouth, as well as in the towns of Thetford and Diss.

Some of Norwich's peripheral towns also display higher levels of uptake than the more rural areas in the county.

While the information displayed **Figure 24** provides a useful indicator of overall EV uptake, areas which feature greater numbers of registered EVs may be a result of population density, therefore the data presented in **Figure 25** (overleaf) is best considered in unison with this metric.

Figure 24: Forecast EV uptake across Norfolk (Number of EVs registered)



Forecasting Demand and Charging Requirements

EV uptake forecasting

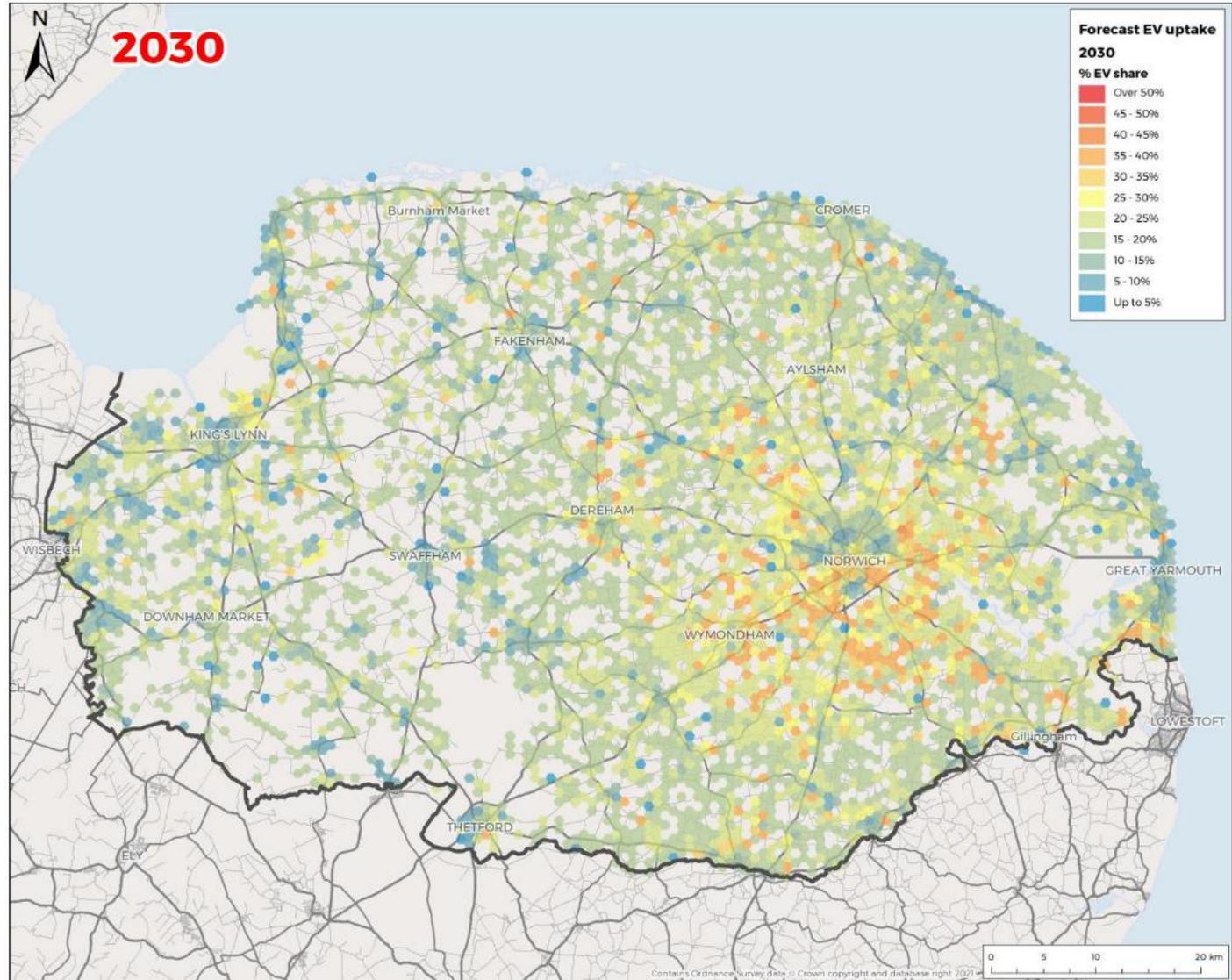
Forecasting EV uptake across Norfolk

Figure 25 illustrates forecasted EV uptake across Norfolk in 2030, calculating EV registrations as a proportion of total vehicle registrations. This gives a clearer sense of where EV ownership is expected to be higher in relative terms, once accounting for difference in the numbers of vehicles registered.

The urban areas of Norwich, Great Yarmouth, King's Lynn, Thetford, and Fakenham are forecasted to experience lower rates of uptake, when compared the rest of the county.

Overall, the information displayed in **Figure 25** presents a strong image of EV uptake across Norfolk in 2030, with moderate to high levels expected in most areas within the county.

Figure 25: Forecast EV uptake across Norfolk (Number of EVs registered as a proportion of total vehicles)



EVCP requirement forecasting

The forecasted uptake of EVs in Norfolk by 2030 enables an assessment of associated charging infrastructure requirements.

For the purposes of this assessment the charge point demand being considered is limited to **publicly accessible charge points**.

Forecasting public charging infrastructure requirements presents a number of challenges and is a matter of some debate within the industry, with wide ranging estimates based on a number of critical assumptions and forecasts implicit within any such estimates, including:

- **Charging habits** - Public vs Private charging, rapid vs slow chargers.
- **Off-street parking availability.**
- **Trends in vehicle technologies** - range, efficiency.
- **Trends in charger technologies** - charge rates.
- **Vehicle mileage and ownership trends.**
- **PHEV or BEV.**
- **PHEV miles in electric mode.**

Each of the above elements are discussed further here.

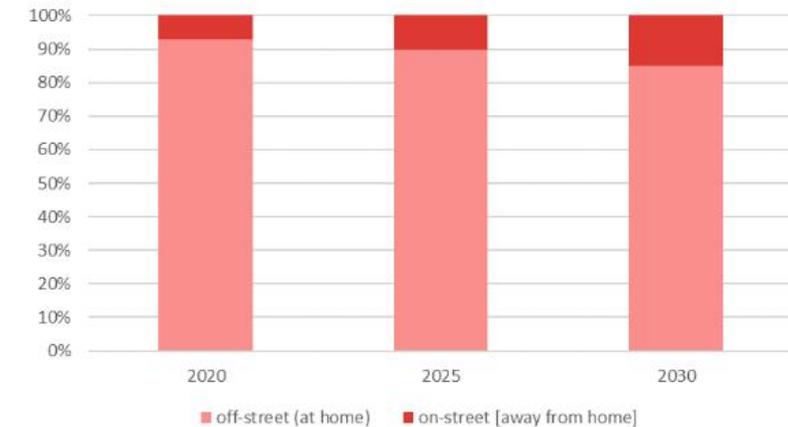
Charging habits - Public vs Private charging

Firstly, there is a need to consider the extent to which vehicles will use public chargers, as opposed to private residential or workplace charging. At present a large majority of charging takes place at homes and workplaces (~80% of kW delivered). However, this ratio may change over time, with implications for the number of public chargers required.

There are some contrasting and often strongly held views amongst the EV industry as to the whether in the future, EV charging habits and infrastructure will pivot more decisively away from the current model, towards a far larger proportion of charging at ultra-rapid charging hubs, with quick turnaround times which are more akin to the petrol station model. Whilst others anticipate sustained high levels of home and workplace charging, or greater destination charging, with slow/ fast chargers proliferating within car parking spaces and supporting a 'grazing' or top-up behaviour.

Workplace charging may sometimes double as publicly accessible charging. There are also diverging views of the extent to which workplaces will accommodate employees wishing to charge, particularly where larger numbers of chargers would be required, triggering electrical upgrades making them more costly to install.

Figure 26: Proportion of charging forecast to take place off-street and on-street





Forecasting Demand and Charging Requirements

EVCP requirement forecasting

Off-street parking availability

A further challenge in assessing the future trends in EV charging behaviour is that the current sample size of EV ownership is still very small in percentage terms as a part of the overall vehicle fleet (1%), and still dominated by early adopters, and not reflective of the wider populations.

For example, around 93% of EV owners to date are estimated to have access to off-street parking, whereas it is commonly cited as many as 40% of households have no access to off-street parking. This would indicate EV ownership is significantly lower amongst those without access to off-street parking.

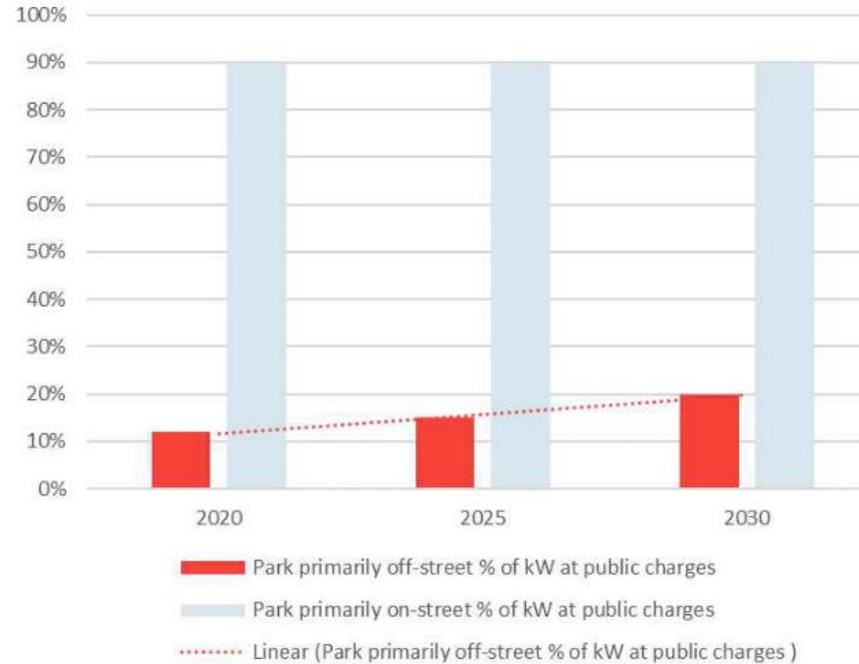
It should be noted however, that car ownership is much lower amongst households without off-street parking. A recent study by PWC estimated as many as 78% of UK drivers have access to off-street parking at home.

However, even accounting for this would still indicate that, to date, those with access to off-street parking are over three times more likely to switch to an EV than those without.

As the profile of EV owners comes to reflect the wider population, this will see an increase in the proportion of EVs with no access to home charging, and so are more reliant on public infrastructure.

Figure 27 presents the assumed charging behaviours used in forecasting the proportion of charging that will take place off-street, and on-street.

Figure 27: Assumed proportion of charging undertaken at public chargers, split by EV owners who primarily park off-street, and those who primarily park on-street





Forecasting Demand and Charging Requirements

EVCP requirement forecasting

Trends in vehicle technologies

Another key factor in the future charging infrastructure requirements are the trends in vehicle technology, in particular: range, battery size, efficiency and charge rates supported. There has been a steady upward trend in all of these aspects, and that trend is expected to continue. Faster charge rates (kWh) and an increasing number of vehicles supporting ultra-rapid charging potentially means a greater share of charging (in terms of energy consumed) could be delivered by fewer ultra-rapid chargers. Equally however, larger ranges and battery capacities will lessen the need to stop at an intermediate charger on route. Improving vehicle efficiencies (miles per kW) also have implications for charging requirements.

Trends in charger technologies

Similarly, the EV charger technology is evolving, with increasing charge rates being delivered at up to 400kW/ 900V+, as well as improved functionality and ease of payment, scalable lower cost deployments and smart load management. Future charge point requirements will depend on the prevailing average charge rates and the number of vehicles which can be supported by each unit. A further consideration is the legacy charge points, and what these mean for the average charge rate. For the purpose of this assessment, conservative mid-range assumptions were applied, assuming the majority of charging continues to take place from home/ workplaces, but with an increase from 17% to 31% of kW drawn from public chargers by 2030, based on the share of EVs registered at households without off-street parking rising from 7 % to 15%, and the share of public charging for those with off-street parking increasing from 12% to 20%.

PHEV or BEV and PHEV miles in electric mode

The share of vehicles made up by PHEVs also has a bearing on EVCP requirements. PHEVs currently make up 55% of the UK ULEV fleet, but the trend is towards increasing BEV uptake, and so over time this is expected to fall.

Current estimates are that around 45% of PHEV mileage is completed in EV mode, though some speculate the figure is much lower than this.

For the purpose of this assessment BEVs are forecast to make up 75% of ULEVs by 2030, with 60% of PHEV mileage completed in EV mode by 2030.

Vehicle mileage and ownership trends

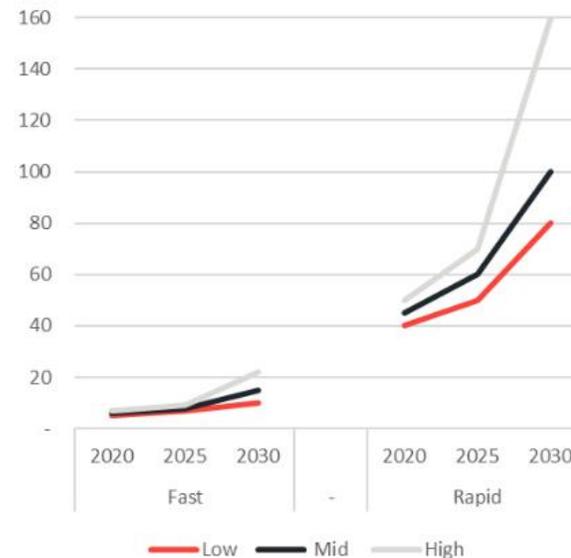
Trends in vehicle mileage and the numbers of vehicles registered are further variables.

In Norfolk, the average vehicle miles travelled is 18% higher than the average for Great Britain (when accounting for total locally registered vehicles and excluding trunk roads), which likely reflects the longer trip distance and greater reliance on car travel in parts of the County.

However, the motor vehicle flow figures reported by DfT, which are intended to provide a measure of how heavily used the roads are across the UK, indicate that the number of vehicles travelling on Norfolk's roads is lower (2,567) than the average for England (4,440), indicating traffic is relatively dispersed across the network. It also likely reflects the low density and rural nature of large areas of Norfolk, and that it does not carry large volumes of through traffic destined for other regions.

Emerging trends towards reduced car ownership, and the increasing use of car sharing schemes and ride hailing seen amongst younger demographics would be expected to unfold more slowly across Norfolk, given the low population densities, longer trip distances and more limited public transport options. Car ownership is expected to grow until early 2040, when 'peak car' is reached.

Figure 28: Forecast Trends in Average Charge Rate (kWh)



References:

- DfT (TRA8903 - Motor vehicle traffic (vehicle miles) excluding trunk roads by local authority in England, annual from 1993, 2019)
- DfT (VEH105 - Total vehicles registered, 2019)



Forecasting Demand and Charging Requirements

EVCP requirement forecasting

Defining adequate EVCP provision?

As well as the challenges already outlined, a further difficulty in forecasting EVCP requirements lies in what is deemed to be 'adequate' EVCP provision. This could be taken to mean the absolute minimum level of provision required, assuming all the EVCPs are optimally positioned and intensively utilised.

Conversely, it could be taken to mean what is sufficient in terms of providing users with the utmost reassurance that there is adequate EVCP coverage/availability, or their perceived requirement. It could also extend to minimising waiting times and maximising convenience, or sweating the asset and maximising EVCP utilisation to improve the investment case. Whether the charge points are provided at scale at destinations and used to graze/ 'top up charge', or used intensively in EV only bays is another underlying factor.

A further consideration is EVCP reliability and availability. At present EVCP utilisation is typically very low, in many cases EVCPs have been installed ahead of demand and have sometimes been poorly situated. As the number of EVs increases this would be expected to increase.

Ratio of EVs to EVCPs

A critical judgement around the ratio of EVCPs to EVs required, is the proportion of EVCPs made up of standard/fast chargers and rapid chargers.

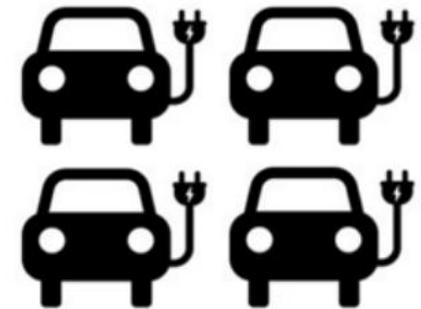
Recognising the challenges outlined above, a top-down and bottom-up approach was undertaken, to enable benchmarking of the outputs against a range of industry forecasts. The assessments were also informed by stakeholder engagement undertaken with a range of CPOs.

A wide range of estimates for EV:EVCP ratios are reported within industry publications, including IEA, CCC, ICCT, T&E, Deloitte, and SMMT, drawing markedly different conclusions as to the number of EV chargers required.

Based on a literature review and market engagements, for standard/ fast chargers between 3 and 60 EVs per EVCP were suggested, averaging around 25. For rapid chargers between 40 and 1,200 EVs per Rapid were suggested, averaging around 400.

There are currently around 14 EVs per public EVCP in Norfolk, which represents a good level of EVCP provision, though in part also reflects the low level of EV uptake to date.

The significant ranges in these figures serve to illustrate the significance of the differing assumptions as outlined earlier, plus in many cases each is referring to a slightly different scenario (e.g. standard/fast chargers only, differing charge rates assumed, inclusive of workplace chargers etc).



References

Deloitte (2020) *Hurry up and... wait: The opportunities around electric vehicle charge points in the UK*. Available at: <https://www2.deloitte.com/uk/en/pages/energy-and-resources/articles/electric-vehicles.html>

Quantifying the electric vehicle charging infrastructure gap in the United Kingdom (2020), *Electric Vehicle Charging Behaviour Study, Final report for National Grid ESO (2019), Element Energy*

Quantifying the electric vehicle charging infrastructure gap in the United Kingdom (2020), *ICCT*

IEA (2020) *Global EV Outlook 2020*

Systra (2019) *Plugging the Gap: An Assessment of Future Demand for Britain's Electric Vehicle Public Charging Network*. Available at: <https://www.theccc.org.uk/wp-content/uploads/2018/01/Plugging-the-gap-Assessment-of-future-demand-for-Britains-EV-public-charging-network.pdf>

T&E (2020) *Recharge EU: how many charge points will Europe and its Member States need in the 2020s*

SMMT (2020) <https://www.smmt.co.uk/2020/09/billions-invested-in-electric-vehicle-range-but-nearly-half-of-uk-buyers-still-think-2035-too-soon-to-switch/>



Forecasting Demand and Charging Requirements

EVCP requirement forecasting

Assessment of EVCP requirements

The assessment of EVCP requirements completed for this study considered the wide range of variables outlined in this section, including:

- Forecast EV growth by vehicle type
- Vehicle mileage
- Vehicle efficiency (kW per mile)
- BEV and PHEV ratios
- PHEV mileage in electric mode
- EVs with access to off-street parking
- Proportion of charging (kW) delivered via public chargers
- Average charge rate (kW)
- Average charger utilisation
- Proportion of charging (kW) delivered by charger type

The average charge rate for fast chargers is forecast to increase from around 6kW/h at present, to between 8-22kW/h by 2030.

The average charge rate for rapid chargers is forecast to increase from around 6kW/h at present, to between 80-200kW by 2030

The average charge point utilisation is forecast to increase over time in all scenarios, from a relatively low level at present, as the number of EVs on the road increases.

Ratio of EVs to EVCPs

In the case of fast chargers, which currently average around 0.4 charges per day, they are forecast to increase to between 1.5 and 3 charges per day by 2030.

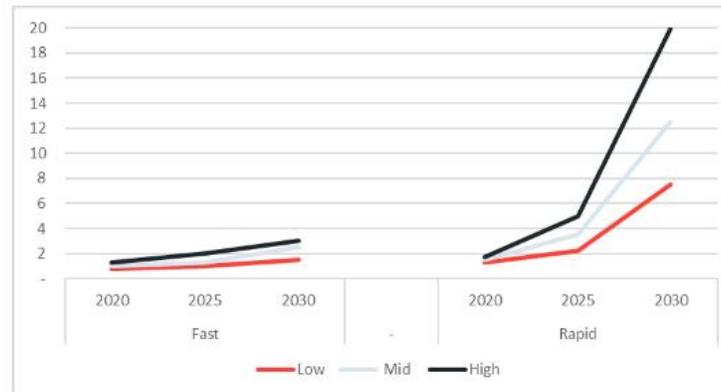
Rapid chargers are currently utilised around 1.25 times per day on average, and this is forecast to increase to between 7.5 and 20 charges per day by 2030.

Based on all these factors, **Low, Mid and High** ratios were determined for the number of EVs per EVCPs, ranging from between 294 and 1,570 EVs per rapid charger, and 14 and 110 EVs per Standard/ Fast charger by 2030.

Rapid chargers are forecast to make up around 7% of EV charger numbers and deliver 75% of the public charger energy consumed by 2030.

This combination equates to an overall requirement for EVCPs at a ratio of between 28 and 110 EVs per EVCP.

Figure 29: Forecast charge point utilisation of EVCPs for each scenario (charges per day)



Forecast EV uptake

Based on the ratios of EVs to EVCPs, a series of forecasts for the number of publicly accessible EVCP required across Norfolk were developed. Forecasts are presented for the Low, Mid and High levels of provision, where:

- **Lower EVCP provision** - where fewer EVCPs are assumed to be required, with a greater number of EVs to each public EVCP provided. This scenario assumes chargers are more optimally deployed, with higher utilisation and higher average charge rates (i.e. higher EVs to each public EVCP). This could reflect a scenario where there is greater emphasis on high power ultra-rapid charging, and fewer slow/standard chargers at destination sites or on-street.
- **Higher EVCP provision** - is a scenario where a more generous level of public charging is provided, assuming each charger is utilised less intensively, with lower average charging rate (i.e. fewer EVs to each public EVCP). This could reflect a scenario where large numbers of slower chargers are provided on street and widely across destination car parks.
- **Mid-range EVCP provision** - is a middle ground between these two extremes, assuming increasing utilisation and charging rates, so may be regarded as the more likely scenario.



Forecasting Demand and Charging Requirements

EVCP requirement forecasting

Forecast EV uptake

The results are presented for 2020, 2025 and 2030, in **Table 15**. The results show that in 2030, there is a requirement of 2,630 EVCPs under the mid ratio forecasts, assuming a blend of both rapid and fast chargers.

Under a lower ratio of EVs to EVCPs, this rises to 5,974 EVCPs, and under a high ratio it falls to 1,632 EVCPs.

Figure 30 demonstrates the forecast requirement for publicly accessible chargers between 2020 and 2030, with only a modest requirement forecast in a high ratio scenario, and a significantly increased provision required in the low ratio scenario. The mid range scenario represents something of a middle ground, with a balanced set of assumptions in terms of technical developments and charging behaviours.

The blue marker shows the current number of EVCPs (198) within Norfolk, slightly above the higher range forecast requirement for 2020.

It is important to emphasise, given the range of forecasts and assumptions required, that these figures are intended to provide only a high level indication for the potential numbers required for planning purposes. The increasing divergence between the low, mid and high ratios in the later forecast periods reflect this increasing uncertainty.

Finally, **Figure 31** presents the forecast number of EVCPs required up to 2030, segmented by charger type, under each of the low, mid and high ratio scenarios

Table 15: Total Forecast EVCP requirement, by year

Forecast EVCP Requirement	2020	2025	2030
Lower EVCP Provision	90	1,356	1,632
Mid-range EVCP Provision	124	2,411	2,630
Higher EVCP Provision	188	3,431	5,974

Figure 30: Forecast number of EVCPs required up to 2030 (including a combination of rapid and fast chargers)

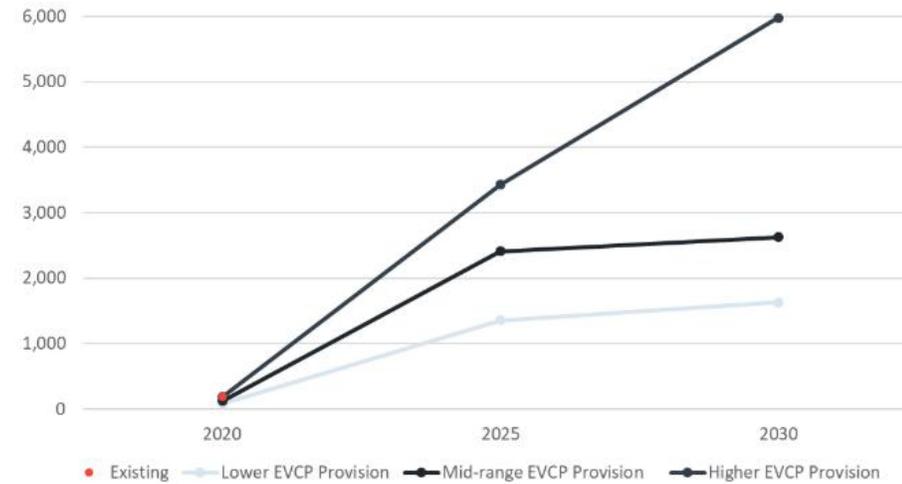
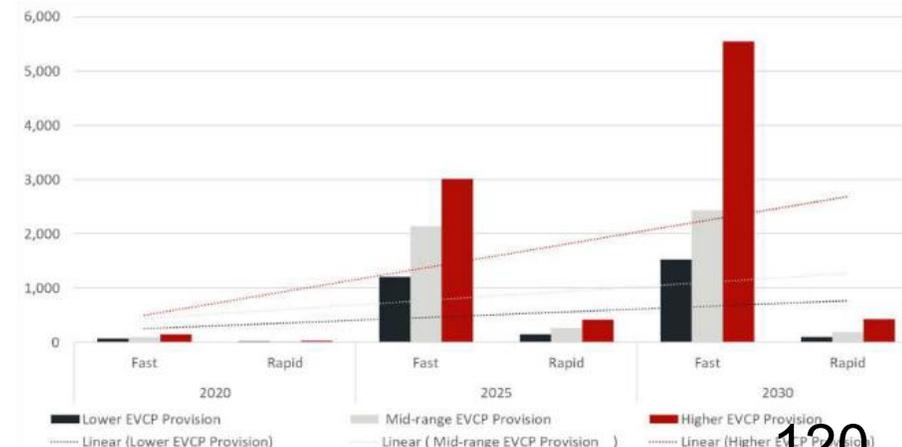


Figure 31: Forecast number of EVCPs required up to 2030 by charger type



Forecasting Demand and Charging Requirements

Gap Analysis

Spatial analysis of public EV charging demand

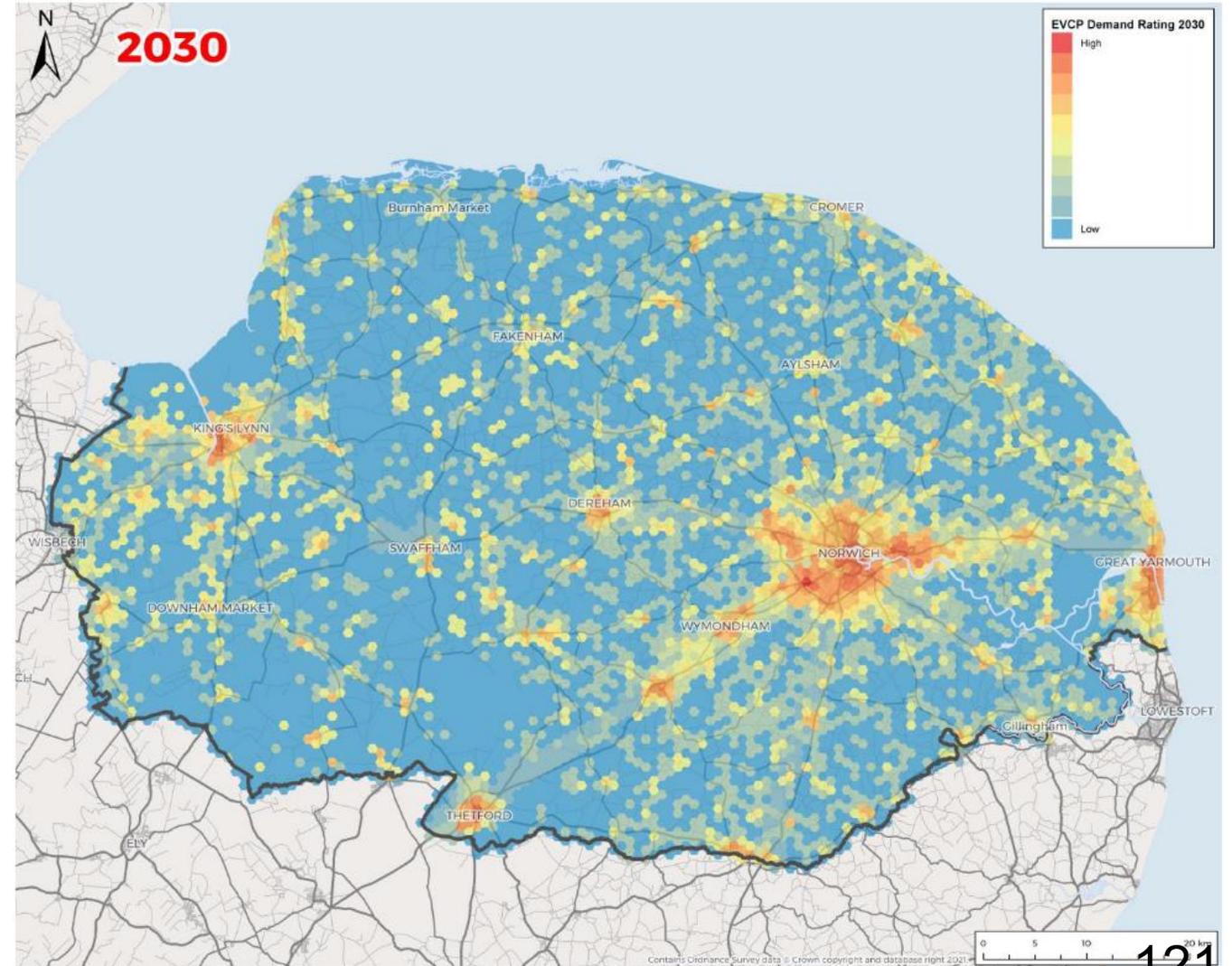
Based on the preceding analysis of the potential requirements for public EV charging infrastructure, a spatial analysis of the likely distribution of EVCP demand was undertaken. This analysis is informed by:

- Forecast EV uptake by postcode
- Number of destination land uses by postcode
- Proximity to high traffic volumes
- Reliance on on-street parking

A radius of influence and / or weighting was attributed to each dataset, to illustrate the likely spatial variation in demand at a granular level across Norfolk.

This analysis indicates a strong focus of demand around the larger conurbations. Demand can also be seen along key road corridors.

Figure 32: Forecast EVCP demand ratings across Norfolk



EV charging demand and available substation capacity

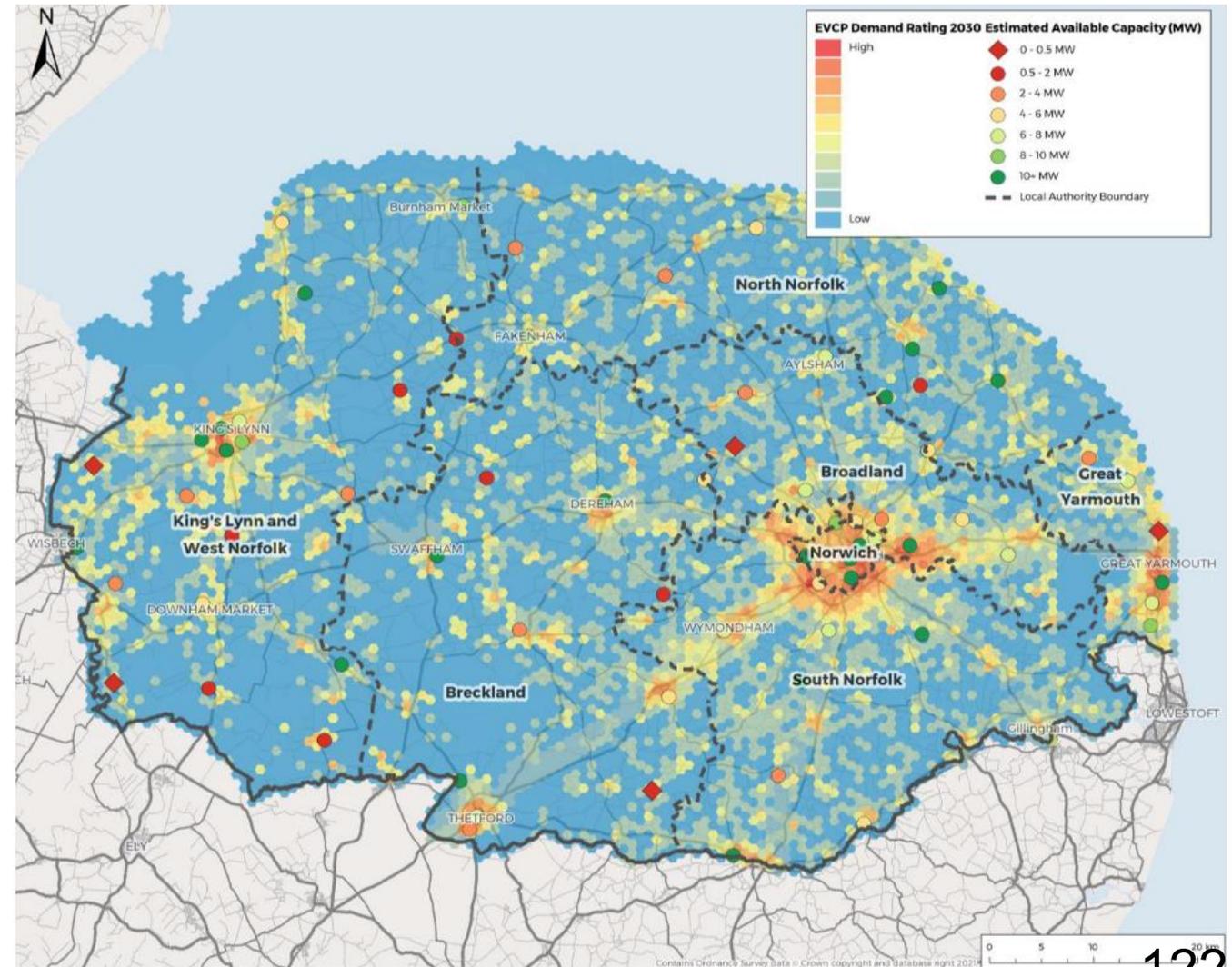
Figure 33 depicts forecast EVCP demand ratings across Norfolk, overlaid with estimated available substation capacity.

As previously identified, the forecast EVCP demand analysis shows a strong focus of demand around the large urban areas, as well as along key travel corridors.

The available capacity at the 74 substations across Norfolk follow a similar pattern in some respects, as the urban areas of Great Yarmouth, King's Lynn, and Norwich feature the greatest available capacity. The peripheral towns surrounding Norwich also display moderately high levels of available capacity.

This comparison shows that there is a significant overlap of the two sets of data, suggesting that areas of high EVCP demand are in locations that are close to substations which can accommodate further demand, thus should be able to provide the power supply necessary for EVCP deployment.

Figure 33: Forecast EVCP demand ratings compared to estimated available substation capacity



Forecasting Demand and Charging Requirements

Gap Analysis

Supply of publicly accessible chargers by the private sector

There is a keen appetite to invest in EV charging infrastructure from the private sector, with a number of large operators having established themselves, as well as new entrants and acquisitions by major investors.

In order to understand the extent to which the private sector may cater for the forecasted demand for EV charging, analysis was undertaken to consider the relative attractiveness of sites across NCC for private sector EVCP investments.

To inform these assessments, a number of CPOs were consulted (as detailed later in this section) to understand their deployment strategies, and the key parameters they consider when determining the likely commercial viability of a site.

The key findings of this engagement are summarised below:

- Commercial charge point deployments are typically **focused on destinations and intermediate sites** (i.e. service stations, petrol stations, roadside cafes).
- Chargers are more likely to be delivered on a fully funded basis **where demand is high, with high traffic volumes or reasonable dwell times**.
- **Prime sites and strategic partnerships with major chains** are a key driver of commercial charge point delivery, including sites that provide attractive waiting facilities/ amenities.
- **Rapid chargers** are more likely to be commercially deliverable by the private sector than standard/ fast chargers.

- **Around 33-50% of sites considered typically do not have sufficient electrical capacity** to deliver fast / rapid charging hubs, and the cost of upgrading the connection makes them commercially unviable.
- A number of CPOs noted that they anticipate that the **market is moving towards ultra-rapid chargers** within the next 10 years.
- **On-street residential chargers are challenging to deliver on a commercial basis**, and so are generally grant funding led, though some CPOs will part fund on-street chargers (up to 25%) where the remainder is covered through grant funding, provided they can be incorporated as part of a wider network.
- **CPOs preference is typically for off-street car parks**, due in part to delivery issues over on-street EVCPs, including resident objections to TROs.
- **Some CPOs focus on roadside retail, food and leisure outlets, moving away from forecourt/ petrol station market** where they feel they offer a poor retail experience, given the longer dwell times at the sites.
- For commercial deployments, **CPOs may seek to avoid over-saturating markets** with chargers and risking cannibalising their own charge point utilisation.
- **CPO approaches to EVCP deployment varied** from detailed modelling and site identification, to partnership led models, and from installing ahead of demand to aligning with EV growth, with some estimates that by 2030 around 50% of public EVCPs might be delivered by the private sector, whilst others felt it was more art than science when it comes to forecasting future EV charge point requirements.



Forecasting Demand and Charging Requirements

Gap Analysis

Spatial analysis of public charge points provided by the private sector

Based on the findings outlined on the previous page, the potential share of EV chargers that might be delivered by the private sector, and their distribution across Norfolk was assessed. This analysis is informed by:

- Forecast EV uptake by postcode
- Destination land uses by postcode
- Proximity to the strategic road network
- Grid constraints

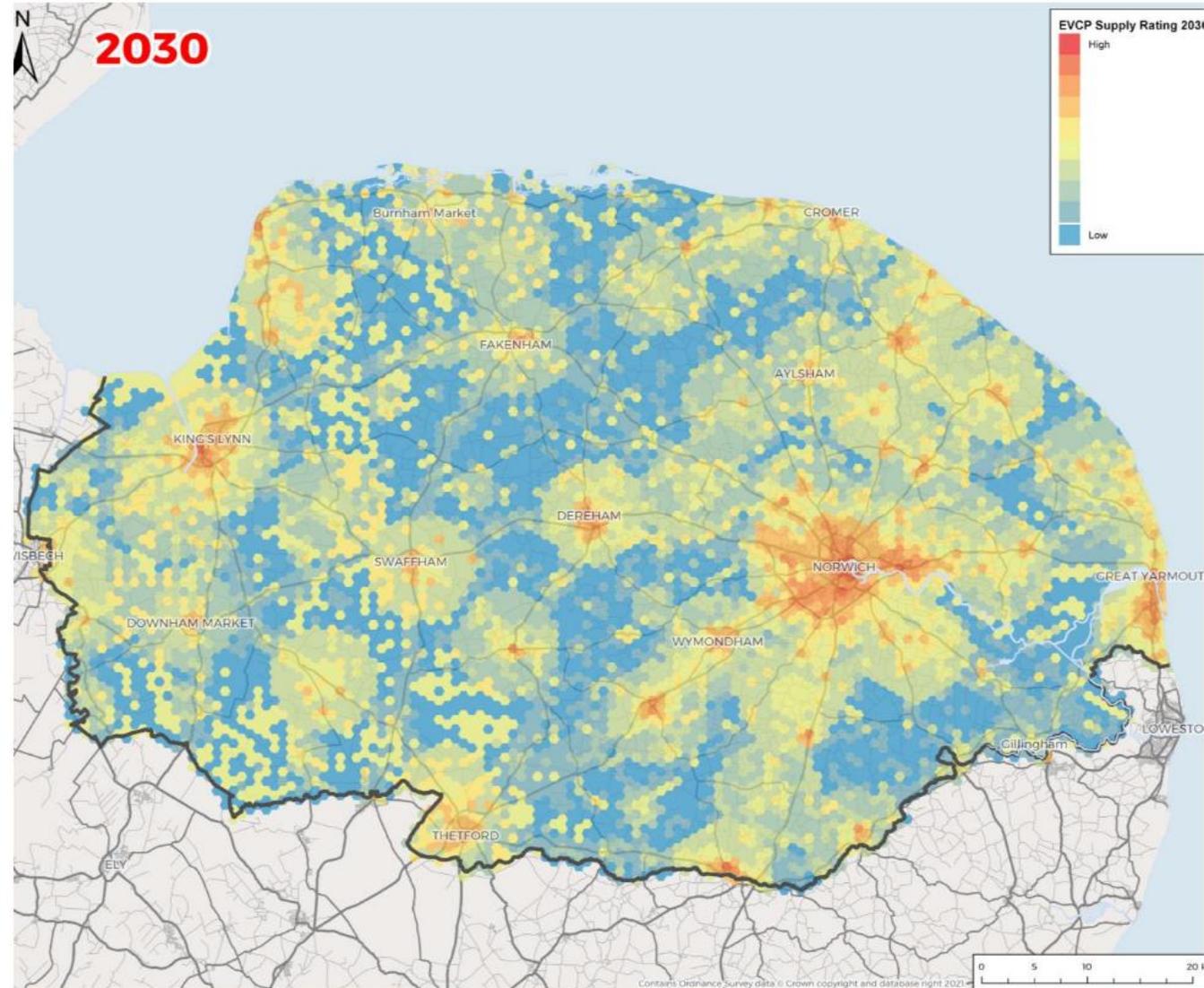
A radius of influence and/or weighting was attributed to each dataset to illustrate the likely spatial variation in EVCP supply at granular level across Norfolk.

The results of this analysis are shown in **Figure 34**.

This analysis indicates a strong focus of supply by the private sector in key urban areas including Norwich, Great Yarmouth and Kings Lynn. There is also expected to be a high level of provision of EVCPs by the private sector along the SRN.

Conversely, low levels of private sector provision of EVCPs is shown in the more rural locations of the County.

Figure 34: Forecast EVCP supply ratings across Norfolk



Forecasting Demand and Charging Requirements

Gap Analysis

Forecast gaps in public charging infrastructure

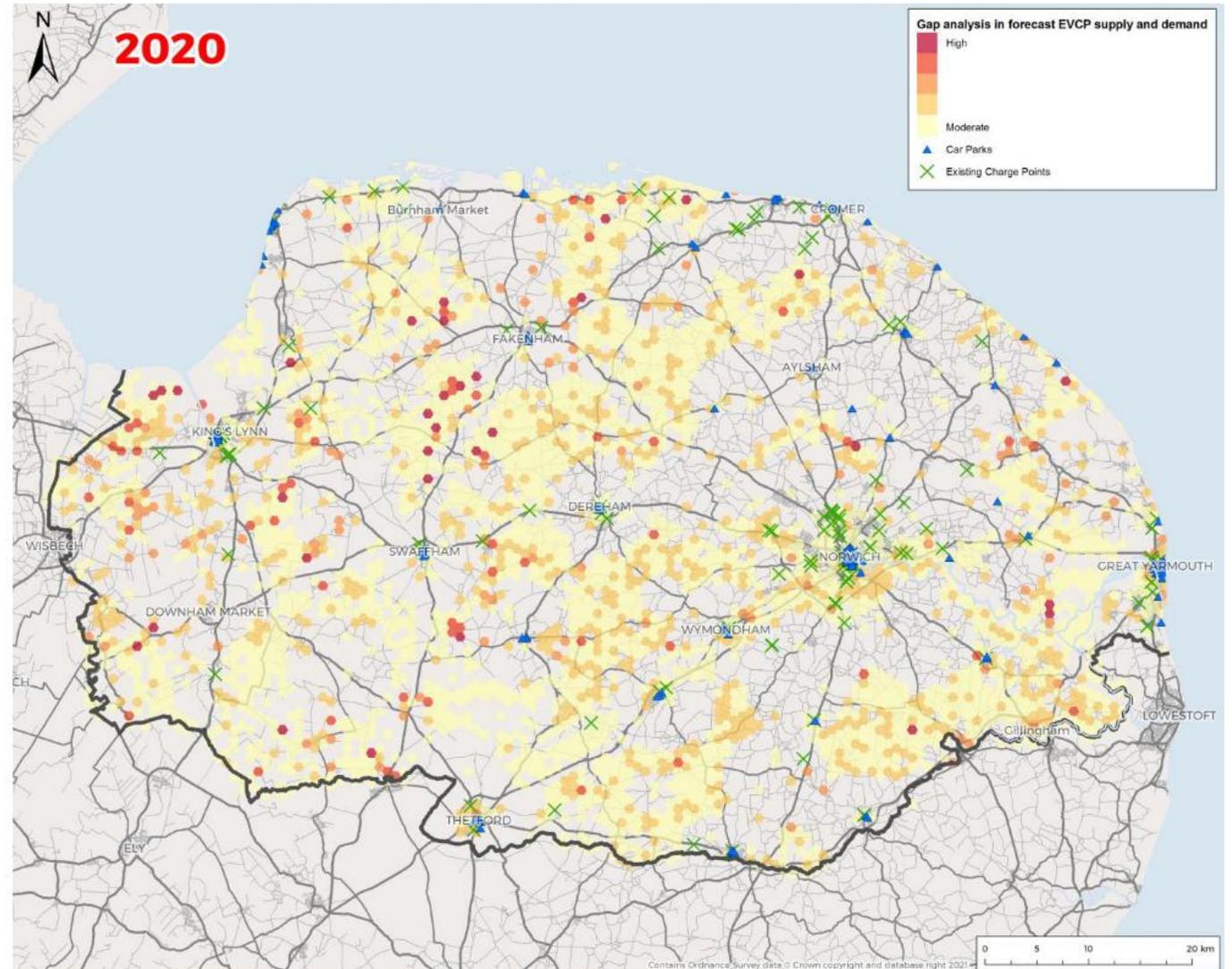
Based on the preceding analysis of the potential demand for public EV chargers, and which sites are more likely to come forwards through private sector charge point deployments, an assessment can be made of the areas where gaps in charge point availability are more likely to arise.

Figure 35 provides a high level indication of these gaps, as the difference between the charge point demand and supply ratings at a local level.

The results indicate the areas where gaps in the charge point network are thought most likely to occur, including:

- **Remote areas with limited demand**, but still requiring baseline provision to cater for low level demand, e.g. tourist sites/ routes.
- **Rural or secondary routes** with moderate levels of demand, but with fewer destinations (retail stores, food outlets etc) to serve as a platform for charge point rollout.
- **Areas with greater reliance on on-street parking** and few amenities with the potential to host local charging hubs.
- **Primary routes with high demand and delivery constraints**, particularly in areas where there are sections of road with few destinations to readily cater for charge points, or where there are grid constraints making sites commercially unviable.
- **Areas of high demand with delivery constraints**, including high installation costs/ grid constraints which pose a barrier to delivery.
- **Areas with more constrained grid capacities** or more remote from a primary substation.

Figure 35: Charge point demand/ supply gap analysis across Norfolk



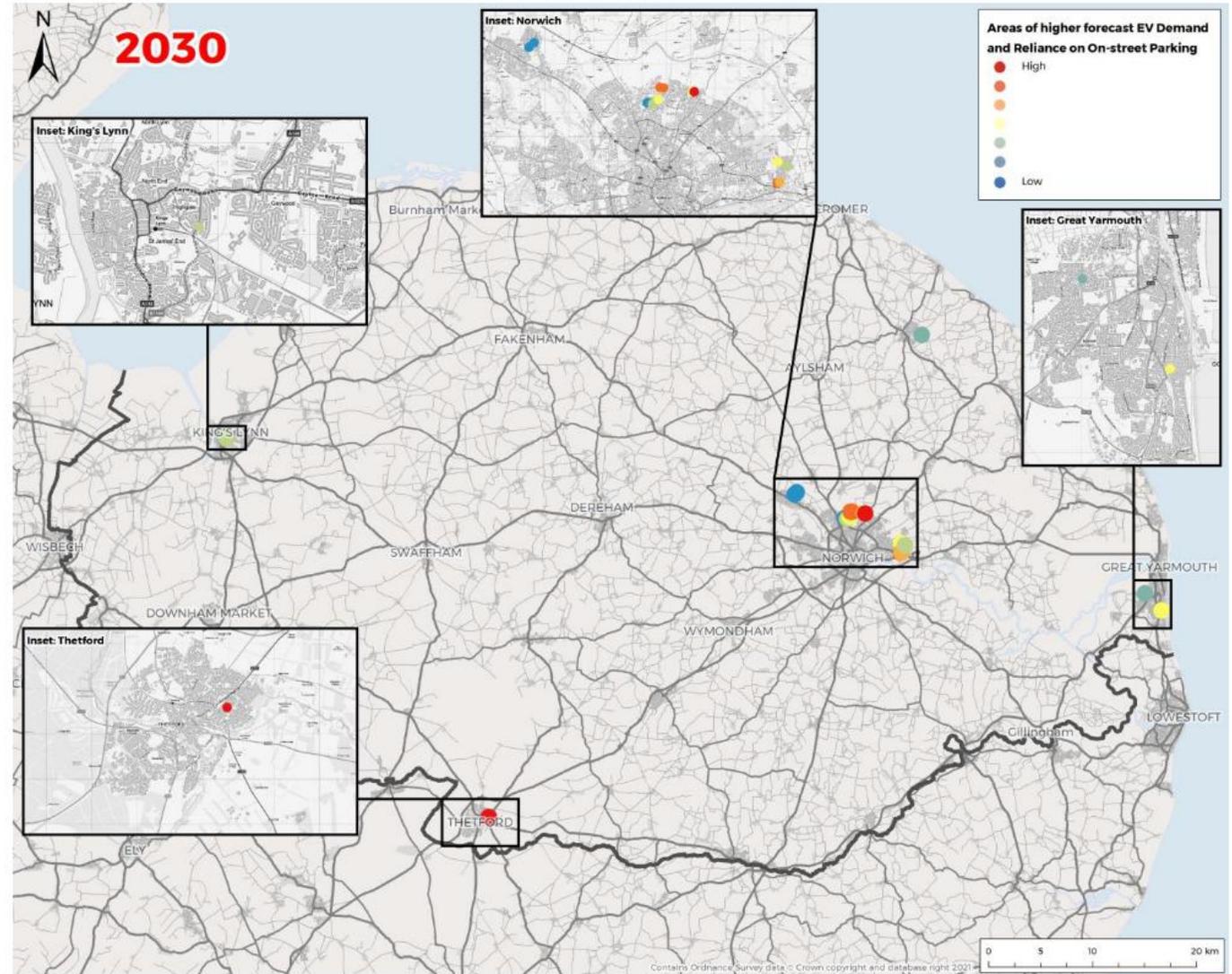
Demand for EV Charging in Areas Dependent on On-street Parking

Areas where there is a demand for EV charging, but with limited off-street parking, have long posed challenges to the prevailing delivery models for public charge points. The commercial case for slow/standard chargers, and particularly residential chargers, is less attractive than rapid chargers, due to a number of factors, including:

- **High delivery costs** relative to the units of electricity delivered per day, on which the CPOs make their revenues.
- **TROs**, particularly in on-street settings, are often contentious amongst the wider public, especially where parking is limited and already a source of frustration.
- **Challenges in finding available space** for on-street chargers and feeder pillars where footways are narrow, or basements, trees and other street furniture prevent deployment.
- Whilst rapid chargers are often quite clearly demarcated and visibly EV bays, standard charger bays can be more anonymous and **prone to being 'ICE'd**, with long dwell times meaning the charger is potentially unavailable for extended periods.

Consequently, areas reliant on on-street parking merit particular consideration. **Figure 36** highlights areas where residents are more reliant on on-street parking, and are also forecast to be areas of moderate or high EV ownership relative to the rest of Norfolk. The areas shown in red represent areas where larger numbers of EVs are forecast in areas that are more reliant on on-street parking. In order to support and enable EV uptake in these areas, prospective EV owners will need to be able to access convenient publicly accessible charge points, to remove any barriers posed to those without access to off-street parking, which will otherwise stifle EV uptake. On-street charging points at these locations, or residential charging hubs in nearby off-street car parks, where they are readily accessible, would be important in supporting and enabling EV uptake in these areas.

Figure 36: Demand for EV Charging in areas dependent on on-street Parking





Forecasting Demand and Charging Requirements

Gap Analysis

Forecast Requirement for Publicly Funded Chargers

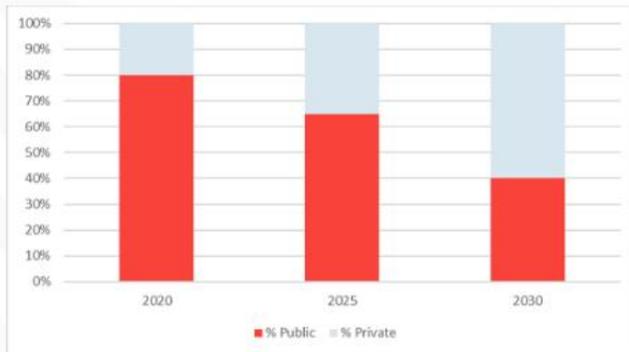
The forecast requirement for EV chargers developed throughout this assessment serves to provide an indicative range of requirements for infrastructure across Norfolk.

Crucially, in order to enable NCC, the Districts and other key partners to plan effectively for meeting future EV charging requirements, a reasonable estimate of the number of publicly accessible charge points that are required and may not be delivered by the private sector alone, is essential for forward planning.

Based on the feedback of CPOs and the key parameters informing a sites commercial viability, it was estimated that approximately 50% of publicly accessible chargers delivered by 2030 may be privately funded.

This is based on the share of chargers delivered by the private sector rising from around 20% in 2020 to 60% by 2030, as demand increases, costs fall, and commercial viability improves, as shown in **Figure 37**.

Figure 37: Forecast Publicly Funded EVCPs



Based on the forecast uptake of EVs in Norfolk, the requirement for publicly accessible charging infrastructure, and an assessment of the likely areas of focus for private sector investment, the **mid-range estimate** is for a requirement of **1,614** additional publicly funded charge points by 2030.

The forecast demand in a scenario where there is a **Lower EVCP provision** (fewer EVCPs per EV), suggests that in the short term there is currently an over supply of chargers in Norfolk relative to demand, as utilisation is currently low, with many chargers installed ahead of demand to promote uptake. As such there is a lower requirement for **932** additional publicly funded chargers by 2030.

However, it is important to recognise that in this scenario, it is assumed that charge points are deployed optimally and achieve high utilisation, with greater increases in the average charge rates (kW/h) also assumed. It would also serve to provide a more limited minimum baseline coverage of EV charging provision, and more high powered recharging in fewer locations. It also assumed upgrading the power outputs of existing legacy chargers.

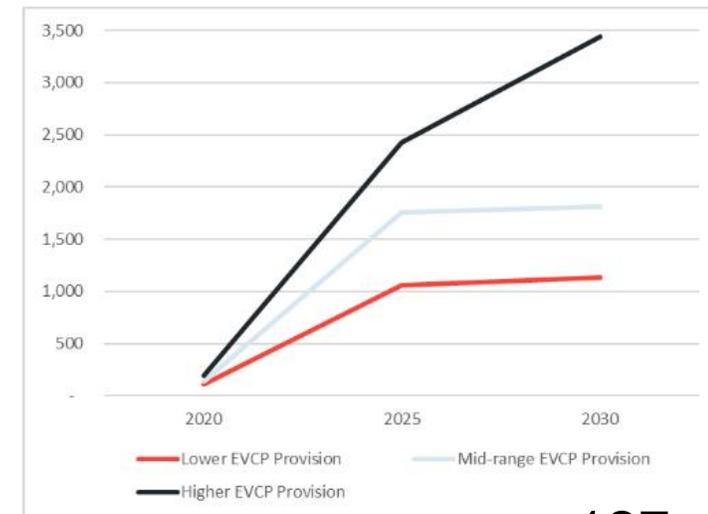
Conversely, the forecast demand for the number of charge points required in a scenario where there is a **Higher EVCP provision** (more EVCPs per EV), is significantly higher than the mid-range estimate, with a requirement for **3,242** additional publicly funded chargers by 2030.

In this scenario it is assumed charge points are deployed more widely and used less intensively, with more modest increases assumed in the average charge rate (kW/h). This would equate to a more dispersed form of recharging at destinations.

Table 16: Forecast Cumulative Publicly Funded EVCPs required

Forecast Publicly Funded EVCP Requirement	2021-2025	2026-2030	2021-2030
Lower EVCPs Provision	865	67	932
Mid-range EVCPs per EV (Mid Ratio)	1,556	58	1,614
More EVCPs per EV (Low Ratio)	2,229	1,013	3,242

Figure 38: Forecast Publicly Funded EVCPs Required by 2030





Forecasting Demand and Charging Requirements

Review delivery models and funding opportunities

Funding for EVCPs

To date the majority of public charge points installed in the UK have been funded by public sector grants from the Office for Zero Emission Vehicles (OZEV) and elsewhere. However, private sector partnerships and revenue share arrangements are becoming increasingly common and can be a good choice for some local authorities.

The Government has created several funding ambitions to help enable the charging of EVs at home, in the workplace and on local streets – see **Figure 39**.

The three core types of delivery models can be broadly defined as Public, Private Sector/Independent CPOs, or Utilities.

Public model

The most common model to date in the UK has been the publicly funded model, where local authorities define the requirements and fund the capital investment, or at least part of those investment costs, using some of the funding pots identified in **Figure 39**.

Publicly funded models are typically operated on a ‘concessionary’ basis, or on an ‘own and operate’ model.

The full public ‘own and operate’ model entails the greatest role of the LA, as they are funding installation, enabling works and operating costs, but in doing so also retain all the revenues generated by the scheme.

The LA retains ownership of the charge point and electrical connection. Typically the LA would contract a charge point operator (CPO) to operate and maintain the charge points. The cost of the CPO may either be covered through taking a share of the revenue generated, or on a fixed rate basis regardless of utilisation.

In a concessionary model, rather than all of the capital investment coming from the LA, some or all of the investment is funded by the charge point supplier/ operator. This model may entail the LA’s role being to complete the enabling works and electrical connection point at the sites, for the CPO to then install and operate the charger.

In broad terms, the greater the share of the risk taken on by the LA through a public model, the greater their potential revenue share and control. Conversely, when the concessionaire has a larger stake in the investment, they will typically require more assurance over levers such as pricing, or longer contracts, in order to be able to recoup their investment.

The public model is expected to remain the dominant model in areas where the commercial case does not appeal to private sector investment, either because the utilisation is likely to be modest or the delivery costs are high. In particular, on-street charging, and the provision of rapid or ultra-fast charge points in rural areas, or areas with high connection costs, are expected to continue to require some form of public sector support to make the investment case.

Figure 39: Funding and ambitions from Central Government

£2.5 billion package to encourage drivers to make the switch, with £1.8 billion for infrastructure and grants for vehicles

- £1.3 billion for chargepoints
- £582 million in vehicle grants
- ~£500 million automotive industry – EV production and supply chains (including new Gigafactories)

Industry

- £500 million pledge to help UK automotive industry – EV production and strengthening regional supply chains including new Gigafactories
- £20 million in a new clean maritime demonstration competition
- £15 million sustainable aviation fuel competition and research & development
- £1 million of funding being announced to extend e-bike hire schemes

£1.3 billion in grants for homeowners, businesses and local authorities to install charge points To date have supported the installation of over:

- 140,000 residential charge points
- 9,000 chargers for staff parking at businesses.
- 19,000 public chargers, including over 3,500 rapid chargers (in partnership with LAs and private sector)

£582 million in grants on vehicle purchases



Forecasting Demand and Charging Requirements

Review delivery models and funding opportunities

Funding for EVCPs

In the medium to longer term, EV charge points are likely to be delivered on an increasingly commercial basis in many settings, as the number of EVs on the road increases and the business case improves. The public sector role is expected to evolve towards a greater focus on the remaining hard to reach areas.

Private sector/Independent model

A wide range of private sector companies with differing interests and backgrounds have entered the burgeoning EV infrastructure market. These range from oil and gas majors, start-ups and innovators, often with a technology or renewables background, automotive OEMs and electrical hardware manufacturers.

Typically under this model chargers are installed on a fully funded leased basis, whereby all the capital and operating costs are covered by the private sector/ independent investor, with a percentage of the revenue passed to the host. Some also pay lease fees to the host for the space occupied by the charger and bays.

At present the most common host sites for fully funded models are hotels, retail and food outlets, leisure facilities, car parks and motorway service stations. A fully funded/ lease model requires the least investment from the host/ LA, and in turn presents the least exposure to financial risk.

However, it also offers the least opportunity for revenue generation, and more limited controls from the host. From an LA perspective, a further limitation is that only commercially attractive sites will be of interest to an investor operating under this model, meaning the LA may be left with only the commercially challenging sites, and no lucrative sites to parcel them up with when seeking to leverage private sector investment for wider deployments.

This business model is a challenging one, as its very much predicated on the charger being well utilised to recover the investment, which in many cases requires a long-term contract. In less attractive sites, private sector/ independent suppliers may seek additional contractual assurances to mitigate long-term risks, such as having autonomy over usage tariffs or a longer lease period. A further risk to the host can be circumstances where the CPO also owns the electrical connection point.

Utility model

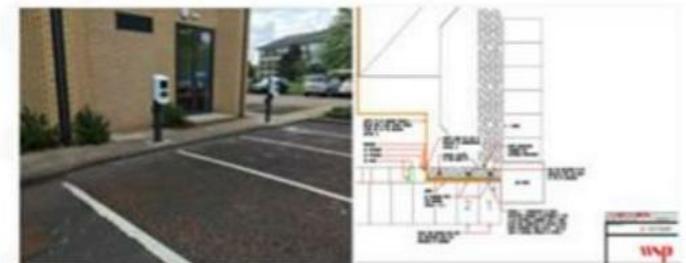
In the US and parts of Europe, it is more common for the DNOs to directly fund and own charge points, recovering the investment and operating costs through electricity tariffs. This model can enable a more rapid deployment of charging infrastructure as the risk of low utilisation is mitigated through the costs being covered within general electricity tariffs.

In Germany major utilities such as E.ON, Vattenfall, Innogy and EnBW together own over 35% of public charging, whilst in Norway, utility owned Grønn Kontakt operates a nationwide rapid charging network.

In the UK, many of the big energy suppliers, and a number of challenger energy suppliers, already offer domestic EV charging packages. But after some initial smaller scale deployments, are only now beginning to significantly step up investment in public charging infrastructure, either developing their own networks or managing the hardware for others.

Two exceptions to this are the Irish state-owned utility ESB, which runs the Northern Ireland charge point network, ecarNI, and rapid chargers in London. Whilst Ecotricity, an independent energy supplier, runs The Electric Highway network of rapid chargers at motorway service stations.

Most have developed their EV offering through acquiring start-ups, or forming strategic partnerships. EDF has recently acquired a majority stake in PodPoint, as well as Pivot Power and Ubitricity. Engie acquired charging manufacturer EVBox.



Reference: Deloitte (2020) The opportunities around electric vehicle charge points in the UK.

Forecasting Demand and Charging Requirements

Measures for delivering or enabling works to eliminate gaps

Funding for EVCPs

There are a number of delivery models available for delivering charge point infrastructure, which are summarised below..

Table 16: Indicative capital and operating cost ranges for EVCPs by location type

Delivery Model	Description	Potential Control/Income	Potential Risk/Control	Advantages	Disadvantages
Public Ownership	All charge point costs are paid for by the public sector, with capital and maintenance costs recouped from usage charges. Charge points are owned by the public sector, with back-office and operation of charge points typically contracted to a private sector CPO for a fixed fee.	Highest	Highest	<ul style="list-style-type: none"> Highest potential income Local authority can determine locations, irrespective of commercial viability ensuring equity of access Easiest to incorporate wider environmental and social value goals 	<ul style="list-style-type: none"> Requires significant grant funding which may not be available or may require local match funding (typically 25%) Highest risk in terms of ongoing liability, stranded assets, and maintenance costs Use of public funds comes with accountability to taxpayer and political risk CPO has least incentive to repair faults
Concessionary Model – public funded	Charge points are installed and funded by the public sector, using available grant funding, and then operated and maintained by a CPO for an agreed period under a profit share arrangement.	Medium - High	Medium - High	<ul style="list-style-type: none"> Some income shared (higher levels of potential public sector income from higher initial public sector investment) CPO incentivised and responsible for maintenance of the network, leading to better end-user experience 	<ul style="list-style-type: none"> Reduced income share compared to full ownership Requires a greater understanding of what the market can offer, and tender process may be more complex than public ownership
Concessionary Model – public/private funded	Charge points are part funded by the public sector, with a CPO also investing in capital costs. The CPO then operates and maintains the charge points for an agreed period under a profit share agreement.	Medium - Low	Medium - Low	<ul style="list-style-type: none"> Reduced risk for public sector Depending on agreement, public sector may maintain ongoing ownership, and can incorporate wider goals 	<ul style="list-style-type: none"> Risk that CPOs will not accept the agreement terms, leading to negotiation or a failed tender Needs to be a relatively large number of sites (>25) so that CPO can balance risk across sites. Potential for disputes over responsibility for site failures and expensive termination clauses
Fully funded options – revenue share	All costs are borne by the CPO, with a long-term lease/licence over which the CPO can recover their costs.	Lowest	Lowest	<ul style="list-style-type: none"> Lowest risk. Rental agreements can provide guaranteed income over a number of years. CPO heavily incentivised to provide good end user experience. 	<ul style="list-style-type: none"> Lowest potential income Least control and ability to incorporate wider goals Likely to involve long agreement periods or exclusion areas Many areas currently unlikely to be commercially viable without public investment

Forecasting Demand and Charging Requirements

Consultation with technical stakeholders

Soft Market Engagement with Charge Point Operators (CPOs)

A number of charge point operators (CPOs) were contacted as a soft market engagement exercise. The engagement involved a one on one call with each CPO, to understand their product offering, their commercial delivery options, and what the key parameters are that inform where they would consider installing chargers on a fully funded commercial basis, versus areas where they may only be willing to supply and operate the units at cost (see previous page for further description of the delivery models).

The findings from these engagements inform the subsequent analysis around what proportion of EVCP requirements may be delivered by the private sector, and where there may be a greater need for the public sector to step in and plug any gaps in the network coverage where they are not likely to be deliverable on a more commercial basis.

Each CPO had the opportunity to highlight what types of systems, delivery options, cost ranges and business models they can offer in Norfolk.

The technical stakeholders that were engaged with are the following CPOs:

- Ionity
- GridServe
- BMM Energy Solutions



Overview – The main focus for Ionity to date has been locations adjacent to or accessible from the UK’s motorway network, including along the M25 at Cobham where EVCPs are highly utilised. Ionity aim to have maximum 80-100km between their charging sites.

Typical Public Chargers Deployed – Ionity offer a purely high powered charging service, deploying only 350kW chargers.

Deployment Model – Motorway network or near to, and expanding to major A-roads, targeting where longer distance journeys are being made. They are however also starting to look at delivering local residential charging hubs as well, for those without off-street charging, and their stage 2 roll-out looks at expanding into town centre locations.

Ionity have a target to install 45 locations across the UK by the end of 2021. Each location will have six EVCPs per station. Longer term, Ionity are looking at deploying 90 stations across the UK by 2025. This equates to delivering around 20 stations a year, which requires significant investment.

For Ionity, the grid connection is a starting point when assessing which sites to deploy EVCPs on. They noted that three out of five potential sites have limitations on desired grid capacity. From Ionity’s experience, grid connection varies a lot by site in terms of capacity and upgrade costs, which is influential in EVCP deployment.

Two of their existing sites have on-site battery storage to supplement grid capacity.

Business model – Ionity fully fund the EVCP installation. All of the investment all comes from Ionity shareholders, including for grid connections, land purchasing and EVCP infrastructure.

Ionity currently operate with 10/15 year contracts when leasing land. Ionity look for an exclusive contract but it is not a deal breaker. To expand network Ionity are currently looking at purchasing land where they could have tenants of their own if buy land for EVCPs.

Ionity believe that in the future EVCPs will be supplied 100% by the private sector.



Image source: <https://avondhupress.ie/>

Forecasting Demand and Charging Requirements

Consultation with technical stakeholders



Overview – GridServe have implemented an EV charging forecourt in Braintree, Essex which incorporates food retail and other services along with 36 EVCPs ranging from 22kW to 350 kW. GridServe already have sites within Norfolk, along the A11 and A47, which they have established in partnership with Broadland.



Image source: <https://www.drivingelectric.com/>

Typical Public Chargers Deployed – GridServe believe that the future of EVCPs will be most people charging at ultra-rapids and prefer a minimum of 150kW chargers. GridServe state that this is to reduce both range and charge time anxiety. 22kW can be implemented as part of a portfolio of EVCPs in an area.

Deployment Model – GridServe have an ambition to supply EVCPs within a 5 minute drive of 90% of the UK population, this would include over 100 electric forecourts and 500 EVCP hubs which include 6-12 chargers. GridServe aim to have their EVCP infrastructure adjacent to or a maximum of 2 minute walk away from a coffee shop or other food and retail services.

Business model – GridServe currently operate license terms between 15 and 30 years depending on the deployment model (car parks, hubs or forecourt).

GridServe believe that Rapid/ultra-rapid EVCPs will be privately implemented due to their complexity. However they do see a future for partnerships and lease arrangements with local authorities. Local authorities have the ability to free up land for GridServe to implement forecourts on.

Destination charging has more potential to be led by local authorities. However, local authorities do not need to fully own and operate, private sector will still be involved. Local authorities should not be expected to own and operate all EVCPs

BMM Energy Solutions



Overview – BMM are both an installer of charge points, including for other charging networks, and charge point network operator in their own right.

BMM consists of BMM Energy (an installer), and BMM Networks (a CPO). Envivo, also owned by BMM, undertake all the associated grid capacity work.



Image source: <https://www.bmm-ltd.com/>

Already operating in Norfolk through the ESPO framework. BMM have an ambition to deploy 5,000-10,000 public network chargers over the next 3 years

Typical Public Chargers Deployed – Focused on AC chargers, typically 22kW chargers, though they are beginning to look at Rapid chargers as well. They are agnostic in terms of the charge point units they deploy within their network, and mix and match to suit location, provided they are OCPP compliant and can be operated via a range of back office software, to avoid being locked into a suppliers own operating platform.

Deployment Model – BMM do a lot of work for Local Authorities, taking a portfolio approach, they accept some sites will be commercially viable locations, but will be mixed with less commercially viable, but necessary, locations.

They do not deploy large hubs of EVCPs from the start, instead BMM typically start with a lower number, and build up when demand is there, but install infrastructure for scaling up in future such as additional ducting, larger grid connection.

Business model – Utilisation is low at the moment, so makes sense to use funding where available. First few years looking to break even, so most operators looking for 10 year license. BMM can fully fund, part fund or joint venture and are willing to do profit shares.

BMM estimate that the private sector will deliver up to 100% of all EVCPs in the future.



Forecasting Demand and Charging Requirements

Measures for delivering or enabling works to eliminate gaps

Mitigating Measures for Grid Constraints

Grid constraints can pose a significant barrier to the roll-out of EV infrastructure, adding to the delivery cost, introducing delays and preventing sites from being commercially viable.

The first step is always to ensure the available energy is used effectively. Smart charging and dynamic load management are fundamental in this regard at the local site level, in managing within the available capacity as far as possible. However, where demand still exceeds supply capacity, options need to be considered to increase the energy supply available to the chargers.

A range of measures are available for overcoming grid constraints, including conventional grid upgrades, grid level load management and flexible connections, through to battery storage and on-site generation, or other innovative approaches currently being trialled elsewhere in the UK and internationally which may have applications within Norfolk in some cases.

Future Mobility

Low level enhancement works	Measures include redistributing load between feeders/ substation, or splitting an existing circuit and connecting to a substation to split load. Works are very site dependant as to what the most economical solution is, but these solutions could avoid upgrading whole circuits or substations. If the limitation to connecting more demand is voltage rather than thermal limits, voltage control solutions could be implemented to reduce voltage drop.
Medium to high level enhancement works	Upgrading of secondary or primary substations. This could require upgrading existing transformers, installing a new transformer, or in extreme cases, building a new substation.
Flexibility and Load management at a network level	Agreement with the DNO for a variable connection capacity depending on user needs. This can be based on the time of day or loading on the local network. Alternatively, the connection can be part of an active network management scheme, where network loading is monitored and site capacity is constrained if overloading occurs. Often 10-15% extra capacity can be enabled before reinforcements are required using active management schemes. Transport for London's Waterloo bus garage use a flexible connection agreement, with timed connections so buses are only charged when electricity demand is low. This allows up to 2.5 MW of flow at times where there is sufficient capacity, greatly reducing infrastructure costs.
Battery Storage	Battery storage can be used to reduce the peak demand of the site to below a level where grid reinforcements are not triggered. The UPS depot in Camden had an expandable battery storage and active network management system installed to support electrification of the depot's 170 delivery vehicles, avoiding costly upgrades to the incoming power supply. A battery system requires sufficient physical space on site. A containerised Energy Storage ISO Standard 40ft container typically holds 2MWh of battery cells.
On site Generation + Battery Storage	Solar power can be used on site to directly charge vehicles during the day and reduce the import requirements from the grid. Wind power can also be used during times of generation. However, these generation sources are not always predictable, so are often coupled with battery storage to store excess generated power and use this for charging when required. It can also reduce the peak load requirements, potentially deferring upgrade costs.
Smart Charging at a network level	Smart Charging enables EVs to integrate into the whole power system, with the EVs able to communicate current charging conditions and respond to third-party control commands. Reducing charging during peak times and concentrating during periods where capacity is available. This capability is already built into some charge points and EVs, and systems are in trial phase. The Automated and Electric Vehicles Act 2018 empowers Government to mandate smart charging, and from July 2019 all newly installed home EVCPs in the UK must feature such communication-enabled technology to receive Government grant funding.
Private Wire Connections	In some cases, where conventional DNO grid upgrades costs are high, private wire connections may offer a lower cost power supply. Direct connection to large scale electricity generation avoids additional levies, resulting in potentially cheaper energy costs.
Innovative Local Grid Capacity Management	Western Power Distribution are currently trialling a means of balancing spare grid capacity across four secondary substations, with differing load profiles, which will then be converted AC to DC, to support 15 rapid (50-100 kW) chargers. A SMART computerised system will be provided to manage the entire network. The design will allow power to be drawn from those substations with available capacity at any point in time, and substations with spare capacity will be able to support those that are heavily loaded.
Direct Connections - Transmission Network	In May 2018, Pivot Power and National Grid released plans for a £1.6bn investment to install rapid charge points alongside 50MW batteries at 45 sub-station sites across the UK, which would connect directly to the transmission system, with each site in time supporting 10-50, and in some cases up to 100 chargers, future proofed to 150-350kW. These are expected to be located within 5km of the sub stations.
Vehicle to Grid (V2G)	V2G goes a step further than smart charging, by enabling EVs to feed electricity back into a home, workplace, or grid, when demand is at its highest, before then charging at off-peak times during the day or night, which will become increasingly useful as the use of intermittent renewable generation increases.



Forecasting Demand and Charging Requirements

Measures for delivering or enabling works to eliminate gaps

Mitigating Measures for Grid Constraints

There are a number of potential delivery models and approaches the County Council and the districts could take in seeking to remove grid constraints across the County, these include:

- **Public funding of enabling works in targeted areas** with high connection costs/ poor commercial prospects
- **Part funding or underwriting of private sector investment** to offset utilisation risks
- **Power-as-a-Service** - fully funded electrical upgrades and lease payments
- **Indirect support to off-set connection costs** - reduced leases or support on land acquisition
- **Partnership working with DNOs** to streamline grid capacity and charging demand assessments
- **Co-ordinating/ match making role** identifying opportunities for partnership working / consortiums

Public funding of enabling works in targeted areas

Public funding could be used in areas where the prospect of commercial investments would otherwise be limited, but by removing a grid constraint would unlock private sector investment in charge points on the site, in an area where there will be a forecast need in the future.

In effect the Local Authority can act as a third party to fund the cost of additional

reinforcement, and then allow the charge point operator to connect. This type of scheme already takes place, but only to a limited extent. The risk of this approach, as opposed to delivering the chargers as well, is that an operator does not come forward, so the sites must be carefully planned and tested with the market at an early stage, and for example, be written into a concessionary contract.

For their Rapid Charging Investment programme, TfL has taken the approach of completing the enabling works and installing the connection at a number of sites on land they owned, as well as private and borough council owned sites, then tendering these sites on a concessionary scheme to charge point operators. This has enabled accelerated roll-out, and for a share of revenues, on sites which wouldn't otherwise have progressed.

Alternatively, a pot of funding for grid upgrades could be established, which could be made available to charge point operators interested in installing within designated areas of Norfolk, but where grid constraints would make doing so commercially unviable. Funding could be used to subsidise a percentage of grid connection costs, to make sites more attractive to the private sector and leverage further investment. A similar pot could also be created for community energy schemes, which may include EVs and renewable energy.

Part funding or underwriting of private sector investment

A further possible approach could be for the LA's to underwrite private sector investment in

certain areas where the CPO would not otherwise invest, to offset utilisation risks.

Power as a service

Power as a Service offers a means of delivering electrical upgrades with no upfront capital costs, instead the Local Authority or charge point operator would pay a fixed monthly fee for a period of approximately 10 years. After 10 years they have the option to either buy back the electrical infrastructure or write a new contract to continue with the service.

Indirect support to off-set connection costs

A further option could simply be for the LA to seek to reduce costs such as the lease for a site, or through assisting with land acquisition, to partly off-set what would otherwise be prohibitive investment costs.

Partnership working with DNOs

The Local Authorities could seek to work with the DNOs to remove any possible barriers presented by a lack of information or transparency around grid constraints, and in turn the LA's could share forecast charging demand and investor interest to promote regular dialogue.

Co-ordinating/ match making role

The LA can also potentially play a useful role in identifying potential groupings of developers, businesses and community energy groups where it knows new developments or planning applications are being submitted which may require additional connections. The reinforcement costs of which can potentially be shared.

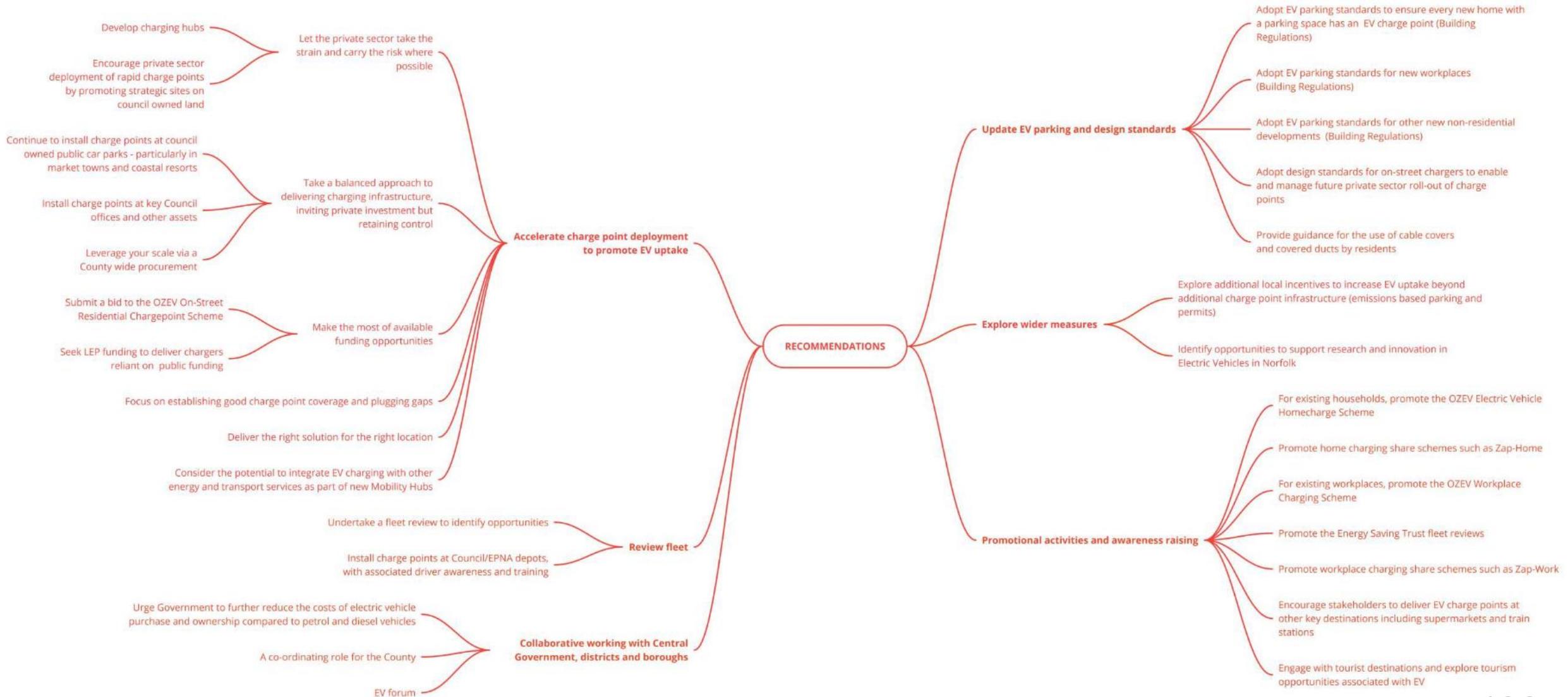
Section 4

Recommendations



Recommendations

Mind map of proposed recommendations



Recommendations

This section outlines the recommendations which have been developed based on the:

- Baseline and research
- Policy context and stakeholder engagement, and
- Forecasting demand and charging requirements.

The 25 recommendations have been categorised into six groups, which are:

- Accelerate charge point deployment to promote EV uptake
- Review fleet
- Collaborative working with Central Government, districts and boroughs
- Update EV parking and design standards
- Explore wider measures
- Promotional activities and awareness raising

A mind map of the recommendations is shown overleaf. These recommendations were then set out as an action plan, which includes:

- The Council role - lead, enable, explore, encourage, or require
- Action by (i.e. who is to lead)
- Recommended timescale.

Accelerate charge point deployment to promote EV uptake

1. Let the private sector take the strain and carry the risk where possible

To assist in growing the charge point network within Norfolk quickly, and with reduced upfront cost and risk, private sector investment should be allowed to take the strain in installing EV infrastructure where they are inclined to do so. This is likely to be particularly pertinent for rapid charge points and charging hubs, with a good example being the proposed GRIDSERVE Electric Forecourt at Broadland Gate, Norwich.

While the private sector is likely to be willing to provide some EV infrastructure, NCC should not be totally reliant on private sector investment to accelerate charge point deployment. Therefore, NCC should still take responsibility for installing charge points in locations which are less likely to be covered by the private sector, in order to develop a consistent charging network.

Consideration should be given to adopting a balanced approach, as while private sector investment helps combat the issue of limited public funds, most operators are likely to only invest in more lucrative locations. Therefore, a balance of private and public sector EV chargepoint operation should be maintained, with more attractive EVCP sites being parcelled up with less attractive sites, thus ensuring a good level of overall coverage.

2. Take a balanced approach to delivering charging infrastructure, inviting private investment but retaining control

In the short to medium term, NCC should seek to attract public sector grant funding, alongside private sector investment, to rapidly expand the local charging network, as part of a public led model operated as a concessionary scheme.

The concessionary model strikes a good balance of risk and control, enabling the LA to leverage some private sector investment, and could be utilised to deliver chargers in prioritised council owned car parks and parcels of land / council owned estate where appropriate.

By packaging up a number of sites and inviting concessionaires to activate and operate the sites to agreed terms, the Council can seek to offset the less commercially viable sites with others that are more attractive to operators. This avoids a scenario whereby local authorities are left with only the hard to deliver sites, which are likely to be loss making.

Where a single CPO is granted rights across the area, there is scope for economies of scale to be achieved. There may also be opportunities to attract large scale private investment from infrastructure funds, such as the Charging Infrastructure Investment Fund (CIIF).

3. Make the most of available funding opportunities

It is recommended that in order for NCC to maximise funding opportunities which are currently available, a bid should be submitted to the OZEV On-Street Residential Chargepoint Scheme. The scheme provides funding for up to 75% of the capital costs associated with procuring and installing on-street charge points, and the latest scheme guidance has removed the project size cap of £100,00, as well as increasing the maximum funding per chargepoint to £13,000.

Areas of potential demand for on-street charging have been discussed in **Section 3 (Figure 36)**, with Norwich and Thetford being highlighted as particularly high, and therefore should form a key part of the bid.

LEP funding should also be pursued to deliver chargers reliant on public funds. If the charge point deployments were to be district led, NCC could offer any funding awarded by the LEP to the districts to partially fund the cost of enabling works for EVCPs, where they are located in areas of demand or likely gaps in provision, as identified in **Figures 23, 32 and 36**.

4. Focus on establishing good charge point coverage and plugging gaps

The analysis conducted in **Section 3** presented areas where high EV charging demand is forecast, which was predominantly around the larger urban areas of Norwich, King's Lynn, and Great Yarmouth. Forecast demand was also visible along key corridors, particularly the A11 and A47.

More rural areas within Norfolk where demand will be limited are likely to suffer from low levels of private sector investment, as shown in **Figure 34**. There will be an obligation for baseline provision to cater for areas of low demand, or areas with high installation costs and grid constraints.

There is also a need to cater for those who do not have access to off-street parking, otherwise EV uptake will remain limited. Recommendation #3 discussed including Norwich and Thetford in the OZEV bid as they represent areas of greatest demand, with some demand also present for on-street EVCPs shown in Great Yarmouth, King's Lynn, and North Walsham.

The locations of several car parks owned by NCC correspond to an anticipated gap in charger provision. We suggest sites are prioritised on the basis of forecast demand (**Figures 23 and 32**), and where gaps in private sector provision are anticipated. The local grid capacity and delivery costs would also need to be considered, based on more detailed assessments of each site and an understanding of funding availability.

5. Deliver the right solution for the right location

Each site needs to be measured on a case-by-case basis, but for most car parks a number of standard/fast chargers (7-22kW), capable of smart charging and load management of the available electrical supply would be suitable, with rapid chargers (50-150kW) deployed where dwell times are shorter or the use case of visitors is likely to require quicker turnaround times.

In the case of standard/ fast chargers, these should be delivered in clusters where possible, with multiple units provided at each site, as this reduces the risk of a driver arriving at the site and being unable to charge and is therefore likely to attract a greater numbers of users.

Rapid charge points should be future proofed to support higher charge rates in the future, preferably with capabilities to support at least 150kW. Where possible, 3-phase 22kW fast chargers should be considered, as whilst 7kW is adequate for longer dwell times, the faster charge rates can enable the available energy supply to be utilised more effectively and cater for a larger number of vehicles, even if not all of them support 11/22kW AC charging.

Passive provision for additional chargers should always be considered as part of the initial installation to reduce the costs of subsequent installations.

Where available, residents' charging hubs in a nearby car park can offer a good solution. Otherwise, low cost on-street chargers in the form of lamp column chargers or kerbside chargers provide a convenient solution for residents, and if deployed widely can mitigate the requirement for TROs.

Alternatively, if there is rapid charger hub in the area, this can also cater to their requirement and is the only model likely to be delivered on a commercial basis.

A formal procedure should be adopted or managing chargepoint requests, which can then be used to inform demand responsive deployment. The Travelwest and London Councils webpages both feature an interactive map of current chargepoints within their respective boundaries, with the option for users to suggest a location for future charging infrastructure.

As identified in the stakeholder engagement, the preferred approach to EV chargepoint rollout by many councils in Norfolk is to be led by demand. An online portal such as this provides an ideal opportunity to do so, and is an exercise that could be operated in partnership with the LEP EV Working Group.

6. Consider the potential to integrate EV charging with other energy and transport services as part of new Mobility Hubs

At locations of suitable demand and passenger traffic, there could be the opportunity to co-locate EV charging facilities with other transport modes. This could be implemented in the form of mobility hubs, which offer multi-modal transport solutions by providing interchanges with public transport, car club services, bike share hire schemes, and cycle storage facilities.

EV car clubs in particular could provide people with the opportunity to have access to an electric vehicle, without the associated purchase cost. The introduction of an e-car club scheme therefore addresses some aspects of social equity, as they offer a key mechanism for opening up opportunities to those who cannot afford the higher upfront costs of purchasing an EV. Furthermore, car clubs offer a practical step towards cleaner, more accountable and well-integrated travel, while simultaneously contributing towards emissions control, reducing congestion, and limiting the demand for residential parking. By working in unison with organisations such as Enterprise and Norfolk Car Club (managed by Co-wheels), which already operate in Norfolk, locations for EVCPs can be determined from analysing areas of greater demand.

There is also potential to locate EVCPs in close proximity to local renewable energy generation to reduce the impact on the grid. Solar and wind power are likely to be the most appropriate generation methods, although battery storage may become more viable in the future.





Recommendations

Review fleet

7. Undertake a fleet review to identify opportunities

Undertaking a fleet review of council owned vehicles will provide a baseline understanding of the current EV proportions. From this review, measurable targets can be set for converting the fleet to EVs, which will demonstrate NCC's commitment to EV uptake. While these targets should be ambitious, making them achievable is also important, as not all vehicle types will be suitable for an EV replacement yet, such as HGVs.

There is also the opportunity here for local authorities to work collaboratively, using their scale as leverage when procuring EVs for their fleets, as well as potentially sharing fleet vehicles.

8. Install charge points at Council/EPNA depots, with associated driver awareness and training

Following on from the results of the fleet review discussed in recommendation #7, it is recommended that charge points are installed at depots owned by NCC, such as the highways depots at Aylsham and Ketteringham, and associated driver training is provided.

Collaborative working with Central Government, districts and boroughs

9. Urge Government to further reduce the costs of electric vehicle purchase and ownership compared to petrol and diesel vehicles

Central government has the most powerful levers available to accelerate the uptake of EVs, which will subsequently drive demand and uptake of EV charge points.

It is therefore recommended that NCC urge central government to reduce relative EV purchase costs. While it is acknowledged that there are many cost-saving factors related to EV ownership which equate to significant cost savings over the lifetime of the vehicle, the initial capital cost is often perceived as being less value for money for many consumers, when compared to conventional ICE vehicles.

This relative cost reduction could be in form of a change to the taxation of vehicle sales, or ending the freeze on fuel duty. The Institute for Fiscal Studies estimates that the coalition government's decision to freeze fuel duty in 2011 has caused an extra 4.5 Mt CO2 to be emitted, due to an increase in driving. If fuel duty was to be unfrozen, this could act as a disincentive to purchase a diesel or petrol vehicle, and make EVs more attractive in comparison.

10. A co-ordinating role for the County

From the stakeholder engagement workshops, it was apparent that stakeholders were seeking guidance in several areas, which is a role that could be undertaken by NCC. These areas include:

- A clearly defined policy position for on-street chargers as the highway authority.
- Mediate joint procurement and knowledge sharing to improve efficiency in EVCP rollout.
- Local authorities were keen to lead by example by installing EVCPs in council owned car parks, therefore NCC should work closely with all districts to ensure common standards and interoperability are adopted as soon as possible.
- EVCPs and EVs are beginning to gain prominence in local policy, and as such it would be beneficial for NCC to develop good practice standards for charge point specification, planning, delivery and operation.

11. Establish a Norfolk EV forum

It is recommended that in order to build on the positive stakeholder engagement that occurred as a result of this study, an EV forum should be established through which officers and representatives could come together on a regular basis to discuss common issues, to share good practice, and promote information sharing – as EVCP planning will require collaborative working across large areas. There is also opportunity here to work alongside the Norfolk and Suffolk Electric Vehicle Working Group, established in July 2020 as part of the New Anglia LEP.

Update EV parking and design standards

12. Adopt EV parking standards to ensure every new home with a parking space has an EV charge point

Currently, around 80% of EV charging is conducted at home, and therefore having progressive EVCP requirements for developers is crucial to promoting EV uptake. It is recommended that NCC adopt the Government's proposed changes to building regulations ahead of their formal implementation.

For residential properties, the proposals state that all new developments with an allocated parking space is to have an active charge point. A detailed summary of the proposals can be found in Appendix A.

13. Adopt EV parking standards for new workplaces

It is recommended that NCC brings forward the Government's proposed changes to building regulations, which would include 10% of workplace parking spaces to have active charging provision, and a further 20% with passive. A detailed summary of the proposals can be found in Appendix A.

14. Adopt EV parking standards for other new non-residential developments

As with recommendation #12 and #13, it is recommended that EV parking standards for other non-residential development are adopted from the proposed building regulation changes. These proposals include 10% of spaces to have active charging provision, and 20% with passive provision. A detailed summary of the proposals can be found in Appendix A.

15. Adopt design standards for on-street chargers to enable and manage future private sector roll-out of charge points

Key design standards should be developed and adopted for on-street EVCPs, to enable a consistent deployment across the county. Guidance produced by Transport for London provides comprehensive design information, and offers a valuable point of reference. This includes:

- Locating on-street EVCPs where a footway width of 2.0m can be maintained;
- The preference for 'build-out' chargepoints and the associated design details;
- Suitable locations for electricity supply feeder pillars; and
- Methods for avoiding trailing wires.

The TfL guidance can be accessed at: <https://lruc.content.tfl.gov.uk/london-electric-vehicle-charge-point-installation-guidance-december-2019.pdf>

16. Provide guidance for the use of cable covers and covered ducts by residents

As detailed in **Section 2** (p. 24), the use of cable covers and covered ducts can be used to secure an EV charging cable, if it is being trailed from a property to a vehicle on the street. This offers a practical home charging solution, and partially overcomes the barrier to a lack of off-street parking, and therefore could be used in some of the areas of Norfolk identified in **Figure 36**.

It is recommended that NCC adopts a pragmatic approach, and permits residents to charge their vehicle in on-street locations in appropriate circumstances, but keeps the policy under review, expressly reserving the right to withdraw permission should they prove problematic.

In practice to date, where other Local Authorities have adopted a similar stance there do not appear to have been any reported issues. On balance, adopting a positive stance and seeking to promote responsible home charging, and providing clear guidance on safe and considerate deployment of trailing cables across the footway is probably the most effective way the Council can engage with the issue.

If cable covers are to be used, clear guidance should be provided by NCC on how they can be used effectively, without causing a safety hazard or public nuisance. Guidance relating to the use of cable covers has been released by Hampshire County Council, and provides a useful reference document (<https://hampshire.moderngov.co.uk/documents/s36307/Appendix1.pdf>).

It is recommended that cable covers are used in areas of low footfall, due to their slightly obtrusive nature and potential safety hazard.

Cable ducts or channels are potentially suitable for areas of medium to low footfall, and low parking stress. It may be advisable to trial this approach first however, before offering it more widely, as it is not yet a common approach, and a trial in Oxford did note a number of drawbacks. It is recommended that these should be installed by the council or a licenced contractor to help ensure they meet required safety standards. For both cable covering methods, they should be used in areas where residents can park outside their property with reasonable certainty.

A clear statement that responsibility lays with the EV owner not the NCC should also be issued, to cover the Council against any injuries caused by cable protectors and/or cable channels. Responsibility for maintaining cable channels should also be considered and clarified, particularly in relation to clearing debris and leaves from the channel.

In the medium to longer term as the wider charging network improves, there may be less need to permit trailing cables in order to charge from home, and so the situation can be kept under review. It is important to note that permitting the use of trailing cables over the footway, or via cable channel, does not serve to lessen the need for public charging infrastructure. It is recommended that legal advice be taken to confirm any liability risk and mitigation measures for NCC.

Explore wider measures

17. Explore additional local incentives to increase EV uptake beyond additional charge point infrastructure

Charge point infrastructure helps facilitate EV ownership and makes it a more viable travel option, however additional methods can be used to further incentivise EV uptake.

This could be through the introduction of reduced costs of parking permits and public parking, which is now significantly easier to implement following the advent of green number plates. Green number plates were introduced in the UK in December 2020, with the intention of allowing local authorities to create schemes such as access to bus lanes, free entry into zero-emissions zones and cheaper parking. Scope for schemes like these should be fully explored by NCC, and can help Norfolk contribute towards the Government's ambition of a 'green economic recovery' from the coronavirus pandemic.

Other methods of incentivising EV uptake include allowing consumers to 'try' an EV. Examples of this include the ULEV Experience's 'try before you buy' scheme, which operates in Nottingham, allowing local business owners to use an electric car or van for free for up to 30 days. Further incentives include:

- Marketing and promotion of EVs;
- Zero emission zones (as in Oxford & London);
- Local scrappage schemes; and
- Differential speed limits.

18. Identify opportunities to support research and innovation in Electric Vehicles in Norfolk

This could include encouraging EV specialist industries to locate in Norfolk, for example at the proposed Thetford Enterprise Park, which is being marketed as the 'Cambridge Norwich Tech Corridor', and fostering collaboration within the sector. This could also involve further engagement with educational establishments in Norfolk on EV issues, including the University Technical College Norfolk (UTCN).

Promotional activities and awareness raising

19. For existing households, promote the OZEV Electric Vehicle Homecharge Scheme

The Electric Vehicle Homecharge Scheme (EVHS) is a grant that provides a 75% contribution to the cost of a chargepoint and its installation, up to a maximum of £350. The main requirement is that a person owns, leases, or has ordered a qualifying vehicle and has dedicated off-street parking at their property.

20. Promote home charging share schemes such as Zap-Home

This recommendation works in unison with the suggestions detailed in recommendations #12 and #19, and if it is well promoted it could result in a significantly expanded EVCP network, at little extra cost for NCC. Following responses from Zap-Map users and an EV charging survey, it is suggested that almost 50% of EV drivers are willing to share their home charge point with other users, either for free or a small fee.

21. For existing workplaces, promote the OZEV Workplace Charging Scheme

Similar to the EVHS, the Workplace Charging Scheme (WCS) will fund 75% towards the purchase and installation costs of EVCPs at a place of work, with a cap of £350 per charge point. Each applicant company is allowed to apply for funding for up to 40 sockets, therefore can receive up to £14,000 in funding.

22. Promote the Energy Saving Trust fleet reviews

The Energy Saving Trust offers a range of fleet reviews, including a Green Fleet Review. Green Fleet Reviews are carried at no cost for most private and public sector organisations. They evaluate how sustainable a fleet operation is and identify opportunities to reduce emissions, fuel costs and expenditure.

A further option is an ultra low emission vehicle review, which will identify where plug-in or alternatively-fuelled vehicles could be most appropriate and cost effective for a fleet.

23. Promote workplace charging share schemes such as Zap-Work

Similar to home charging share schemes, this measure could significantly increase the public charge point network at minimal cost to NCC. Research conducted by ZapMap suggests up to 30% of workplaces are willing to share their charge point with the wider public.

24. Encourage stakeholders to deliver EV charge points at other key destinations including supermarkets and train stations

Supermarkets and railway station car parks are well suited to EV charging, and offer lucrative charge point locations. Supermarkets are typically visited several times a week for 30 minutes or more, offering a potential alternative to home charging, with many supermarket chains already rolling out charge points. Similarly, rail stations attract regular repeat visits by longer staying customers, which are well suited to use by EVs. Examples of this can already be found within Norwich, which has a Chargemaster EV charging point at Norwich Station car park, and a further Chargemaster station at Asda Norwich Hall Road, thus exemplifying the suitability of these locations.

25. Engage with tourist destinations and explore tourism opportunities associated with EV

As mentioned in recommendation #2, a number of council owned car parks are located at tourist destinations, specifically Sheringham Beach, Great Yarmouth, and Hunstanton. Further destinations that are frequented by tourists and shoppers include the Broads, Cromer, and Norwich City. These locations offer strong potential for EV uptake, and by providing chargepoints at destinations such as this Norfolk can encourage 'green tourism'.



Recommendations

Action Plan

Recommendation / action	Council role	Action by	Recommended timescale
Accelerate charge point deployment to promote EV uptake			
Let the private sector take the strain and carry the risk where possible	Enable	All authorities working in partnership, with coordination by NCC	Ongoing
Take a balanced approach to delivering charging infrastructure, inviting private investment but retaining control	Enable	All authorities working in partnership, with coordination by NCC	Within 12 months
Make the most of available funding opportunities	Lead	All authorities working in partnership, with coordination by NCC	Within 12 months
Focus on establishing good charge point coverage and plugging gaps	Lead	All authorities working in partnership, with coordination by NCC	Within 3 years
Deliver the right solution for the right location	Enable	All authorities working in partnership, with coordination by NCC	Ongoing
Consider the potential to integrate EV charging with other energy and transport services as part of new Mobility Hubs	Explore	All authorities working in partnership, with coordination by NCC	Ongoing
Review fleet			
Undertake a fleet review to identify opportunities	Lead	All authorities Fleet managers	Within 12 months
Install charge points at Council/EPNA depots, with associated driver awareness and training	Lead	All authorities Fleet managers	Within 12 months
Collaborative working with Central Government, districts and boroughs			
Urge Government to further reduce the costs of electric vehicle purchase and ownership compared to petrol and diesel vehicles	Encourage	All authorities Cllrs / MPs / Chief Execs	Ongoing
A co-ordinating role for the County	Encourage	All authorities Cllrs / MPs / Chief Execs	Ongoing
Establish a Norfolk EV forum	Encourage	All authorities Cllrs / MPs / Chief Execs	Ongoing



Recommendations

Action Plan

Recommendation / action	Council role	Action by	Recommended timescale
Update EV parking and design standards			
	Council role	Action by	Recommended timescale
Adopt EV parking standards to ensure every new home with a parking space has an EV charge point	Require	NCC Highways & Development Control leads with support from all authorities	Within 12 months
Adopt EV parking standards for new workplaces	Require	NCC Highways & Development Control leads with support from all authorities	Within 12 months
Adopt EV parking standards for other new non-residential developments	Require	NCC Highways & Development Control leads with support from all authorities	Within 12 months
Adopt design standards for on-street chargers to enable and manage future private sector roll-out of charge points	Require / Encourage	NCC Highways & Development Control leads with support from all authorities	Within 3 years
Provide guidance for the use of cable covers and covered ducts by residents	Enable	NCC Highways & Development Control leads with support from all authorities	Within 12 months
Explore wider measures			
	Council role	Action by	Recommended timescale
Explore additional local incentives to increase EV uptake beyond additional charge point infrastructure	Explore	NCC Transport Lead with support from all authorities	Ongoing
Identify opportunities to support research and innovation in Electric Vehicles in Norfolk	Enable	All authorities Transport and Economic teams	Ongoing



Recommendations

Action Plan

Recommendation / action	Council role	Action by	Recommended timescale
Promotional activities and awareness raising			
	Council role	Action by	Recommended timescale
For existing households, promote the OZEV Electric Vehicle Homecharge Scheme	Encourage	All authorities. Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Promote home charging share schemes such as Zap-Home	Encourage	All authorities. Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
For existing workplaces, promote the OZEV Workplace Charging Scheme	Encourage	All authorities. Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Promote the Energy Saving Trust fleet reviews	Encourage	All authorities. Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Promote workplace charging share schemes such as Zap-Work	Encourage	All authorities. Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Encourage stakeholders to deliver EV charge points at other key destinations including supermarkets and train stations	Encourage	All authorities. Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing
Engage with tourist destinations and explore tourism opportunities associated with EV	Encourage	All authorities. Comms / Engagement teams (link to wider travel behaviour change programmes if possible)	Ongoing

Appendix A

Recommended Parking Standards



Appendix A

Recommended Parking Standards

Charge point specifications

- Minimum 7kW charge point for both residential and non-residential buildings, to ensure some future proofing to service increasing battery sizes. Most new homes have a 100 Amp connection as standard, and in most cases, it will be possible to accommodate a 7 kW charge point within this connection.
- Capable for at least Mode 3 charging, to enable smart charging. The Automated and Electric Vehicles Act 2018 mandates out that all new charging points should be smart-capable.
- Untethered connections (i.e. only a socket, no built in cable)
- Location of the charge point must comply with the Equality Act 2010
- Meet relevant safety standards

On-street charge points should be designed to ensure a minimum of 2m footway width is maintained, either through provision of wide footways or by provision of footway build-outs to accommodate charge points.

Passive provision

- Passive provision refers to the installation of cable routes only.
- NOTE: Cenex are developing proposals for a standard ducting/charge point interface, likely to comprise of a concrete pad and a standardised socket connector. This requirement could be included in the requirements if/when the Cenex recommendations are finalised.

Costs

- Installing charge points in new residential buildings will incur an additional cost of approximately £976 per car parking space for the average home (compared to £2,040 for a retrofitted charge point).
- New homes requiring significant electrical capacity reinforcements to accommodate charge points may be exempted from the requirement to provide a charge point, with an indicative maximum limit of reinforcement costs of £3,600 per charge point.

Table 17: Recommended parking standards

Land Use	Active Provision	Passive Provision
Residential	All new residential developments with an allocated car parking space to have a charge point.	n/a
	All new residential developments with more than 10 unallocated off-street and/or on-street car parking spaces to have active provision for 10% of unallocated spaces.	20%
Non-residential	All new non-residential buildings with more than 10 car parking spaces to have at least one charge point, with active provision for 10% of spaces.	20%
	At least 1 charging unit should be provided for every 5 disabled parking spaces.	20%
	Where 50 parking spaces or more are provided then 1 rapid charging unit (minimum 43 kW) per 50 spaces shall be provided and parking time limited to 1 hour.	



For any queries please contact:

Daniel Quan

Associate, Future Mobility

daniel.quan@wsp.com

Matt Croucher

Associate Director, Future Mobility

matt.croucher@wsp.com

wsp.com

Future Mobility



Norfolk County Council

Electric Vehicle Charging Cables Across the Highway Guidance Note for Applicants

Norfolk County Council is committed to achieving carbon neutrality across its own estate by 2030 and to supporting others across the County in their own commitments in working towards Net Zero. Norfolk County Council recognises the significant role that Electric Vehicles (EVs) can play in helping to achieve this goal. It is also recognised that not all EV users (both current and prospective) will have access to their own off-street charging facilities and this in turn may discourage the uptake of EVs.

This guidance note is intended to support Norfolk residents who do not have access to nearby suitable charging facilities (both public and private) by providing a policy to permit charging cables to be placed across the public footway, where appropriate. Examples of situations where this may apply include, but is not limited to, users living in flats and historical Victorian streets where there is no suitable space available for off-street parking.

The charging needs of EV users must be balanced fairly with the needs of other highway users, particularly by ensuring that pedestrians can safely negotiate charging cables placed across the footway. Loose, trailing cables can present a tripping hazard for pedestrians, and could also be a barrier to wheelchair and pushchair users. For this reason, permission will only be granted by way of issuing a highway licence following an assessment by the local highway engineering team to determine both the need, suitability and reasonableness at each location on a case-by-case basis.

If granted, you will be responsible for sourcing your own cable protector, which meets the requirements of the highway licence to eliminate tripping hazards and provide an accessible ramp that wheelchairs and pushchairs can safely and comfortably traverse. Details of the requirements are available at the bottom of this guidance note.

The licence only permits the placement of cables perpendicular across the footway and does not provide any guarantee or priority access to on-street parking directly outside your property.

Guidance is provided below on the criteria that will be considered for all applications received. You are strongly encouraged to review this and to only proceed with your application your situation meets all the criteria listed and alternative options have all been exhausted.

If you do proceed with your application, a fee is payable upfront to cover the cost of the assessment. If your application is declined because the assessment determined that the criteria listed below is not met, fees will not be refunded.

Norfolk County Council is continually working on making more public charging points available to Norfolk residents, and it is envisaged that the number of charge points available will increase significantly over the next few years. For this reason, charging cable highway licences issued will be time-limited to two years. Upon expiry, you will need to re-apply for a new licence, if still required. The need and suitability will be re-assessed and will include assessing whether there are new public chargepoints nearby. Previous possession a highway licence will not automatically entitle you to a replacement licence; all applications will be considered against the latest criteria. In particular, the availability of public chargepoint infrastructure is expected to increase over the coming years and you are strongly encouraged to regularly familiarise yourself with chargepoints available nearest to you and to use these instead of cables across a footway wherever possible.

Charging Cable Across the Highway: Appraisal Tool

	Yes	No
1. Is the property you are applying for your main place of residence?		
2. Is on-street parking the only provision currently available to you where you could charge your vehicle (i.e. there's nowhere to park off-street)		
3. You do not have suitable space on your property to; <ul style="list-style-type: none"> a. create your own off-road parking provision, and b. a private charge point could be installed, and c. a dropped kerb could be applied for if necessary? 		
4. Are you able to park directly outside your property, without contravening any parking restrictions, including; <ul style="list-style-type: none"> a. Parking wholly on the public highway in a legal manner without causing a nuisance (i.e. not on the verge or footway unless explicitly permitted by existing signs) b. Parking without violating any contraventions (e.g. double yellow lines, bus stops, zig zag markings, dropped kerbs, cycle lanes) c. Parking without obstructing other vehicles, pedestrians and cyclists. d. Either; <ul style="list-style-type: none"> i. outside of a resident permit zone, or 		

ii. in possession of a valid permit within a resident permit zone		
5. Is the nearest public chargepoint facility more than a 5-minute walk (approx. 400m) from your property? (www.zap-map.com/live/ provides a useful mapping tool). Alternatively, do you or someone in your household possess a valid blue badge and regularly use the EV?		
6. Do you hold a valid and up-to-date electrical testing certificate for your property (less than 10 years)?		
7. If your EV been provided by an employer, then has workplace charging been put in place?		
8. Is the charging cable intended for use by only members of your own household?		
9. Footfall traffic is relatively low and there are no community facilities in the vicinity of your household that may generate high volumes of pedestrian traffic past the cable? (e.g. not near doctors' surgeries, schools, shops, nurseries etc.). *if the answer is no, a licence may still be granted in some cases but time restrictions may apply to place cables outside of relevant opening hours when footfall is expected to be lowest.		
10. Is the footway street lit? *if it isn't then a licence may still be granted, but with time restrictions to daylight hours only		
11. Do you have anywhere available on your property where excess trailing cable can be stored off the public highway?		
12. Will you be able to place the cable perpendicular to the direction of travel for pedestrians?		

If you answer no to any of the above questions then your application may not be successful. However, if you feel that exceptional reasons apply you will have the opportunity to detail these on your application and these will be considered as part of your application.

Cable protection requirements;

- Not exceed 20mm in depth nor have a gradient exceeding 1 in 15 (i.e. for a 10mm housing should be 150mm wide)
- Be flush with the surface of footway
- Must cover the full width of the footway (i.e. loose, unprotected cables should not be exposed on any part on the footway)
- Be high contrasting (yellow on black footway surface)

- Laid perpendicular to the direction of pedestrian traffic

Infrastructure and Development Select Committee

Item No. 8

Report title: Transport for Norwich Strategy Consultation

Date of meeting: 15 September 2021

Responsible Cabinet Member: Cllr Martin Wilby (Cabinet Member for Highways, Infrastructure and Transport)

Responsible Director: Vince Muspratt (Director Growth and Development)

Introduction from Cabinet Member

The Transport for Norwich Strategy has been developed in collaboration with Broadland District Council, South Norfolk Council and Norwich City Council. The strategy sets out a long-term vision for transport across the wider Norwich area. The strategy will shape how the County Council deals with transport matters in the wider Norwich area including the programmes and individual schemes we will deliver to achieve council objectives as well as how we influence and support plans and programmes of other agencies where these are relevant to transport, such as the Greater Norwich Local Plan.

Consultation on the strategy is currently underway, having started on 25 August, running until the 5 October. Select Committee is asked to provide any comments or views on the key issues covered so that these can be considered as part of the consultation process.

Select Committee will be asked to review the final strategy in November prior to Cabinet consideration shortly after.

Executive Summary

The County Council, working with Broadland District Council, South Norfolk Council and Norwich City Council, is reviewing The Transport for Norwich Strategy. The Strategy sets out policies and proposed actions to take forward work on a range of key issues including decarbonisation and air quality as well as supporting Norwich's economy by ensuring that people can make the connections they need.

Tackling challenges, particularly around carbon, air quality and the economy, raise potentially difficult choices for the council to make when it comes to agreeing the Transport for Norwich Strategy, including whether the council would wish to adopt a strategy with the potential for introducing restrictions on vehicles, or certain types of vehicles, to improve air quality and reduce carbon emissions.

The strategy is currently out for consultation to help shape the final strategy for adoption by the end of this year. The consultation runs for six weeks ending on 5

October. Views of Select Committee are invited to be considered as part of the consultation process. The Strategy and questionnaire are appendices to this report.

Members will need to consider the outcome of the consultation when asked to adopt the Strategy. A further report will be taken to Select Committee with a draft Transport for Norwich Strategy in November, prior to its consideration by Cabinet at the end of this year.

Actions required

- 1. To make any comments on the Transport for Norwich Strategy to be considered as part of the public consultation process, the outcomes of which will be used to finalise the strategy.**

1. Background and Purpose

- 1.1. The current Norwich Area Transportation Strategy was adopted in 2004. It sets out a transportation strategy for the Norwich area, until the year 2021. A small number of minor policy changes were subsequently agreed in April 2010 as part of the development of the Greater Norwich Joint Core Strategy.
- 1.2. A high-level consultation on reviewing the existing strategy was carried out in January 2018. A good response to this was received and comments have been used to shape the draft Strategy, review of which was put underway in 2020.
- 1.3. An Integrated Sustainability Appraisal, incorporating Strategic Environmental Assessment and Habitats Regulation Assessment, has informed development of the draft strategy. Consultation on this is being undertaken alongside publication of, and public / stakeholder consultation on, the draft Transport for Norwich strategy.
- 1.4. The strategy has been developed in collaboration with Broadland District Council, Norwich City Council and South Norfolk Council. The Strategy was endorsed for consultation by the Transport for Norwich Joint Committee on 29 July.
- 1.5. The consultation started on 25 August and ends on 5 October. The outcome of the consultation will be used to finalise the strategy which will be reported back to Select Committee and the Transport for Norwich Joint Committee and the Greater Norwich Development Partnership in November. Cabinet will be asked to adopt the strategy in December.

2. Proposals

- 2.1. The consultation version of the Strategy is attached as Appendix A and the consultation questions are included as Appendix B The consultation is on the County Council's website <https://norfolk.citizenspace.com/consultation/proposed-transport-for-norwich-strategy>.
- 2.2. Select Committee is asked to note the consultation and provide any comments on the Strategy. Members can separately respond individually to the on-line consultation.
- 2.3. Comments from Select Committee, alongside other responses to the consultation, will be considered in shaping the revised Transport for Norwich Strategy.

3. Impact of the Proposal

- 3.1. The proposal will help to shape the Transport for Norwich Strategy. Comments from Select Committee will help shape the final version of the strategy and impact on how the council develops interventions that affect how people travel within, from and to the wider Norwich Area.
- 3.2. A report on the recommended strategy will be presented to Select Committee in November, prior to it going to Cabinet for agreement, providing Members with a further opportunity to shape the Strategy. The strategy, when adopted, will set the direction for significant long-term interventions to, amongst other things, tackle carbon emissions, air quality and growth of the area.

4. Financial Implications

- 4.1. Currently there are no financial implications. The consultation is being undertaken within existing financial resources secured for delivery of the Strategy. Much of the funding secured will be used post strategy adoption to develop some of the more significant actions emerging through the Action Plan.

5. Resource Implications

- 5.1. **Staff:**
Current activities to develop the Transport for Norwich Strategy, including consultation, are being undertaken within existing resources.
- 5.2. **Property:**
None at this stage. Any impacts on property are only likely to arise from delivery of individual transport schemes. These will be identified at later stages of plan development, and in its implementation stage. Impacts will be considered at the appropriate time on the specific schemes.

5.3. **IT:**
Not at this stage. It is likely that some of the interventions developed will impact on the Council's IT systems including those that manage the transport networks and provide travel information.

6. Other Implications

6.1. Legal Implications

Information collected in the consultation will be confined to data that will help the council to analyse the responses. It will not be possible to identify individuals from the requested information. This will not constitute personal data under the terms of the Data Protection Act.

A Strategic Environmental Assessment (SEA) is being undertaken alongside development of the strategy. SEA is a requirement of the Environmental Assessment of Plans and Programmes Regulations 2004.

6.2. Human Rights implications

None at this stage.

6.3. Equality Impact Assessment (EqIA) (this must be included)

EqIA has been incorporated into the Integrated Sustainability Appraisal that has been carried out and is being consulted on alongside the strategy.

6.4. Data Protection Impact Assessments (DPIA)

The consultation has been designed by the Council's consultation team, and data collected will be managed in accordance with County policy.

6.5. Health and Safety implications (where appropriate)

The report is seeking members' views on a consultation. There are no direct health and safety impacts.

6.6. Sustainability implications

An Integrated Sustainability Appraisal has been carried out incorporating the Strategic Environmental Assessment and Habitats Regulation Assessment.

6.7. Any other implications

None

7. Actions required

7.1. **1. To make any comments on the Transport for Norwich Strategy to be considered as part of the public consultation process, the outcomes of which will be used to finalise the strategy.**

8. Background Papers

- 8.1. [•Transport for Norwich Strategy, Sustainability Appraisal](#)
[•Transport for Norwich Strategy, Habitats Regulations Assessment](#)

Officer Contact

If you have any questions about matters contained in this paper, please get in touch with:

Officer name: Richard Doleman

Tel no.: 01603 223263

Email address: richard.doleman@norfolk.gov.uk



If you need this report in large print, audio, braille, alternative format or in a different language please contact 0344 800 8020 or 0344 800 8011 (textphone) and we will do our best to help.

Transport for Norwich — Strategy —

Executive summary
and vision



Executive summary

Introduction

This is the draft Transport for Norwich (TfN) strategy for consultation and planned to be adopted at the end of 2021. It will replace the existing Norwich Area Transportation Strategy adopted in 2004 and which set out a transportation strategy for the Norwich area until the year 2021.

The Transport for Norwich strategy will form part of a suite of documents setting out transport policy in Norfolk. The Norfolk Local Transport Plan (LTP) covers transport policy across the whole of the county. This strategy aligns with, and nest within, this and provide the detail for the area. Other more detailed plans and policies will themselves support it, for example the Local Cycling and Walking Infrastructure Plan would be incorporated as part of the Transport for Norwich Strategy.

This is an ambitious strategy, putting carbon reduction and better air quality at the heart of the aim to support a growing economy, strengthen communities and reduce our impact on the environment.

The strategy recognises that Norwich and the strategic growth areas around it is important for people and businesses across a large area: what is done within Norwich affects many more people and businesses than simply those who live within the urban area.

The transport issues and problems within the city are quite different from those faced in its rural hinterland so interventions appropriate within the city might not always be appropriate for elsewhere.

How trips to Norwich are begun will be influenced by local factors such as the purpose of the trip, the distance to Norwich and the availability of different transport modes.



Vision

Norwich and the strategic growth areas around it will become a place to thrive because shared, clean, active and accessible travel are the first choice for journeys, and people within at least the urban area can access a range of services without a car.

The Vision will be delivered through nine themes. The following provides a short summary of key aspects of the TfN strategy for each one:

Norwich and Norfolk

Norwich and the strategic growth area around it is the centre for a large part of the county and the wider eastern region. Good, strategic connections are vital for continued prosperity.

A zero-carbon future

Achieving net zero carbon emissions will require significant and far-reaching interventions including reductions in travel demand, mode shift through an increased emphasis on active travel and supported by an accelerated switch to zero emission vehicles.

Improving the quality of our air

Clean air is important. Significant and far-reaching interventions will be needed. Likely measures will need significant further study and engagement work to consider before being able to commit to delivery of a preferred option, but the following interventions will be further considered: Clean air zone; Workplace parking place levy; Road charging / congestion charge; Vehicle bans (eg prohibiting petrol and diesel engine vehicles from the city centre).



Changing attitudes and behaviours

Local people, businesses and others who use all of our transport networks need to be engaged so that they understand and support the changes and feel confident in being able to make changes to their own travel behaviour.

Supporting growth areas

The area has plans for significant growth. This needs to be in the right places, with transport networks provided, so that people can easily access facilities. Priority should be given to walking, cycling and public/shared transport links.

Meeting local needs

The transport system needs to support the needs of everyone, being designed to take account the different needs of different people.

Reducing the dominance of traffic

In local neighbourhoods, traffic impacts will be reduced. This will be achieved through a series of interventions including low traffic neighbourhoods, school streets and reductions in speed limits, based around the principle of Healthy Streets.

Making the transport system work as one

The transport system needs to ensure efficient movement of large numbers of people. We will identify roads where general traffic is prioritised; where public transport is prioritised; and where active travel is prioritised. This reflects that streets cannot accommodate every demand at the same time, and we must prioritise. Elsewhere, streets will primarily support communities who live there, businesses or for leisure uses like meeting friends or entertainment. Parking will be reviewed to consider current parking capacity, arrangements, cost, availability and type.



Making it Happen (governance)

Good governance arrangements are vital for effective actions and delivery, supported by active engagement across a range of people and partners. Special interest sectors need to be drawn in to advise and assist with direction and delivery. Without this, we will not achieve our ambitions.





www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

Background and context



Chapter One - background

Spatial Portrait

- 1.1 Norwich is Norfolk's largest urban area and one of the largest centres of employment in greater south-east England, making the city an important focus in the region for a range of services, as well as the administrative and operational headquarters for a number of organisations. It is also a city of considerable historic importance and the city centre in particular retains many historic features such as narrow streets within the city walls lined by many medieval and Georgian buildings and churches, as well as two cathedrals and a Norman Castle. Norwich's landscape varies from the urban and historic core to open, green spaces and parks, facilitating recreation and leisure activities, as well as the River Wensum which traverses through the city.
- 1.2 Norwich, including its surrounding area (Broadland and South Norfolk Districts), has an estimated population of around 409,000 as of 2018. Of this, 55% of the population live in the Norwich urban area, around 10% live in surrounding market towns such as Wymondham and Wroxham, and 35% live in smaller towns and villages on Norwich's periphery. Both the city's urban centre and surrounding areas are undergoing, and are planned to undergo further, large scale growth and change. This growth will be through large housing and employment land allocations in adopted and emerging local plans.
- 1.3 Norwich is one of the fastest growing cities in the UK and contributes more than £3 billion per annum to the national economy. The Norwich area strongly features most of the sectors identified as having high growth potential regionally which include: manufacturing and engineering at Hethel; agri-tech, health and life sciences at the Norwich Research Park and Food



Enterprise Park; and IT and communications and digital creative industries in the city centre. The area also benefits from a strong and growing tertiary education sector provided by UEA, NUA, City College Norwich and Easton College which contribute research expertise and a skilled workforce. Norwich is a key employment hub resulting in people from across the county of Norfolk, and some outside, commuting into the city.

- 1.4 The Norwich-Cambridge corridor is of key strategic importance to the planned growth, with rail and road routes providing key strategic access to London, Cambridgeshire and much of the rest of the UK. The Cambridge to Norwich Tech Corridor, which includes Norwich, the North East Growth Triangle, the remainder of the Norwich Fringe, Hethersett and Wymondham, is the major focus for growth and change in Greater Norwich, accommodating approximately 74% of the planned growth. The A47 is an important road and bus route connecting Norwich to Great Yarmouth and Lowestoft to the east (which are also served by rail services) and providing access to King's Lynn, the Midlands and the north of the country to the west. There are also several key arterial routes, the Broadland Northway and an inner and outer ring-road, providing access in and out of the city from surrounding settlements for all types of vehicle, including by bus and forms of active travel.
- 1.5 Norwich also boasts an extensive leisure and cultural offer with a booming tourism industry supporting 54,000 skilled workers. Norwich and surrounding areas are experiencing growing numbers of day visitors, estimated at 40 million per year, and 12 million overnight visitors to historic buildings, parks and museums, cultural festivals and other regular events, along with access to the Broads and the coast.



- 1.6 The health of people in Norwich is markedly worse than the national average. However, the surrounding districts such as Broadland and South Norfolk are generally better. The city also has a higher level of deprivation than the Norfolk average. This takes into account the domains of income, employment, education, skills and training, health and disability, crime, barriers to housing services, and living environment. Transport has a key role to play in alleviating poverty by providing affordable access to jobs, education and services.
- 1.7 Travel patterns and behaviours can be very different across the area. People living away from the centre tend to travel more by private car, possibly due to trips being longer – meaning that active travel isn't always suitable – and public transport links scarcer.

About the Transport Strategy

- 1.8 The Norwich Area Transportation Strategy (NATS) was adopted in 2004. It set out a transportation strategy for the Norwich area until the year 2021. This version of the strategy reviewed and amended the previous one in the light of the then current transport policy, essentially updating it and rolling it forward. A small number of minor policy changes were subsequently agreed in April 2010 as part of the development of the Greater Norwich Joint Core Strategy.

The most significant of these was to seek a step-change in the provision of public transport largely through the creation of bus rapid transit routes connecting major growth areas to the city centre and employment sites.



- 1.9 In 2010 a NATS Implementation Plan was adopted setting out how the strategy would be implemented on the ground.
- 1.10 The Transport for Norwich strategy is the successor to NATS. It is a high-level strategy setting out a vision, objectives and longer-term aspiration alongside an Action Plan setting out commitment to the major actions that will be undertaken to achieve the policy aspiration: like investigation of how to reach zero carbon target and meet air quality requirements; and subsequent implementation.

The TfN strategy forms part of a suite of documents setting out transport policy in Norfolk. The LTP covers transport policy across the whole of Norfolk. The TfN strategy will nest within this and provide the detail for the area. Other more detailed plans and policies will themselves support TfN. The Local Cycling and Walking Infrastructure Plan will be incorporated as part of the TfN strategy.

Geographical coverage of the strategy

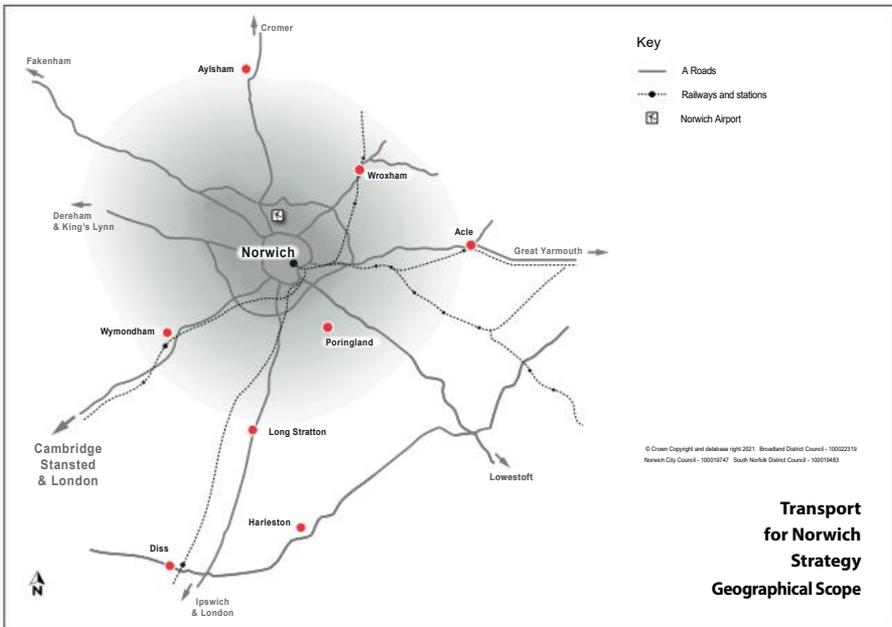
- 1.11 The Norwich Area Transportation Strategy (NATS) had a defined area and covered the city of Norwich, its suburbs and the first ring of surrounding villages, an area approximately 22km by 18km including the Norwich City Council administrative area and parts of the districts of South Norfolk and Broadland.
- 1.12 The NATS area was broadly the same as the Norwich Policy Area that is defined in the Joint Core Strategy (JCS). Through the process of developing the TfN Strategy, consideration has been given to its geography.



- 1.13 The existing strategy is focussed on Norwich, including the contiguous major growth area, and includes a small rural hinterland. However, Norwich is important for people and businesses across a large area. The travel to work area extends roughly across Norwich, all of Broadland and South Norfolk plus parts North Norfolk, Breckland and Mid-Suffolk so what is done within Norwich therefore affects many more people and businesses than simply those who live within the urban area.
- 1.14 The transport issues, problems and opportunities within the city are very different from those faced in its rural hinterland so interventions appropriate within the city are often not appropriate elsewhere. How trips to Norwich are begun will be influenced by local factors such as the purpose of the trip, the distance to Norwich and the availability of different transport modes.
- 1.15 The LTP provides important policy context for transport across the county. The fourth LTP is nearing completion and it is planned to be adopted by August 2021. In addition, a series of more local studies and strategies exist for places including the market towns of Wymondham, Aylsham, Diss and Wroxham and Hoveton.
- 1.16 This TfN strategy will have a number of policy layers that will each have their own area of influence so the extent of the strategy cannot be easily represented by a line on a plan. However, there will be areas of focus for different policies as they are developed.
- 1.17 Examples of policy areas where geographic scope differs include:
- The need to consider longer distance trips to Norwich that originate elsewhere in the county or beyond
 - Consideration of how implementation of measures within the city affects journeys originating from, or going to, areas outside the city.



1.18 Transport within Norwich and its strategic growth area, together with consideration of the longer distance trips from the county or beyond, will be where the strategy and its action plan have their main focus. In this context, 'Norwich' means the existing built up areas, the growth areas including the north east growth triangle and a small buffer zone where transport movements and general activities might be considered to be very closely associated with, or part of, the city.



Current Progress and Achievements

1.19 The strategy develops implementation of projects and initiatives over a number of years including:

- Successful bids for Transforming Cities Fund and rapid implementation including the Prince of Wales Road contra-flow cycle scheme, connecting the rail station to the city centre
- Successful Active Travel Fund scheme bids (covid recovery) implemented on St Benedicts and Exchange Street; both allowing outside seating for eating and drinking, as well as reductions in traffic
- Two rounds of Cycle City Ambition Grant funding for three cross-city cycle routes including extensive 20mph zones and cycle parking and further development of the Local Cycling and Walking Infrastructure Plan
- High quality public realm schemes delivered in partnership with Norwich City Council eg Westlegate, Tombland
- Bus priority schemes in the city centre, eg: Rampant Horse Street and Red Lion Street
- Operation of six Park and Ride sites offering cross city bus travel and a direct link to the Norfolk and Norwich University Hospital (NNUH) and UEA
- Commercial bus network patronage increases and network stability
- Improving air quality in Norwich Air Quality Management Area (AQMA): The Castle Meadow Low Emission Zone was fully completed as long ago as 2009



- Growing levels of cycling (40% increase where new cycle infrastructure has been provided)
- Effective use of camera enforcement for bus gates for traffic management
- Decreasing levels of traffic through the city centre, whilst maintaining the vitality of the retail
- Effective management of coaches travelling to the city; supporting continued growth in tourism
- Effective parking enforcement and operation of Controlled Parking Zones, eg residents parking, to support transport policy
- Effective maintenance of the highway
- Effective traffic signal control management using bus prioritisation
- Effective city centre car parking information system for motorists through variable message signs showing numbers of available spaces in car parks
- Targeted local safety scheme implementation
- Site allocation and highway development management role for major and minor developments ensure that development is aligned to the TfN strategy as best as possible and mitigation measures sought where necessary such as Travel Plans, junction improvements, new footways and crossing facilities.
- Successful partnerships with districts, eg provision of bus shelters, stakeholders, eg Norwich Business Improvement District and operators, eg Norwich Car Club



- Partnership with Norfolk Constabulary and the Safety Camera Partnership
- Effective coordination of road works and event disruption
- Provision of new waiting and loading restrictions to respond to a changing city
- New road infrastructure to reduce congestion and delays for all road users including buses on certain routes. The Broadland Northway has taken traffic out of the centre, allowed measures such as Westlegate pedestrianisation.
- Capacity improvements have been provided along Dereham Road and at the Dereham Road / Outer Ring Road roundabout.
- Efficient handling of new highway adoptions and securing commuted maintenance sums from developers where required
- Facilitation of highway stopping up for new development
- Effective traffic management to regenerate historic areas eg closure of through traffic at St Georges Street and public realm improvements have boosted footfall, local businesses and amenity of the city centre conservation area.



Chapter Two - Policy Context

Policy Context Summary

2.1 A wide range of local, regional, national and international policies have been taken into account in the strategy's development. A comprehensive review of all the relevant policies for the TfN Strategy will be published separately alongside the final strategy. The key policies providing context to the TfN Strategy include:

- The United Nations Paris Agreement 2015
- Climate Change Act 2019 revision
- Clean Air Strategy 2019
- Build Back Better: our plan for growth 2021
- Bus Back Better: A long term strategy for buses in England 2021
- Gear Change: a bold vision for cycling and walking 2020
- Future of Mobility Strategy 2019
- East of England Route Strategy 2017
- Healthy Streets Approach
- Inclusive Transport Strategy (2020)
- Norfolk County Council Environmental Policy 2019
- Local Transport Plan (LTP4 due to be adopted 2021)
- Greater Norwich Local Plan (due to be adopted September 2022)
- Norfolk Greenways to Green Space Strategy.



- 2.2 The TfN strategy sits within the Norfolk Local Transport Plan (LTP) which sets out seven strategic objectives to guide future investment in Norfolk's transport network. These are: embracing the future, delivering a sustainable Norfolk, enhancing connectivity, enhancing Norfolk's quality of life, increasing accessibility, improving transport safety and providing a well-managed and maintained transport network.
- 2.3 Core policy messages informing the new TfN strategy include the following themes:

The environment

- Reducing carbon emissions, particularly from transport by facilitating zero emission vehicles, active travel, public transport and reducing the demand for travel
- Protecting and improving the environment
- Improving air quality particularly in built up urban areas

The economy

- Supporting economic growth and recovery including from the impacts of the Covid-19 pandemic
- Providing and enhancing connectivity between key hubs and locations, such as key employment sites, rail stations, ports and airports, and key cities and places both within the county as well as nationally and internationally



Society, health and equality

- Improving access to education, training and employment opportunities and tackling deprivation
- Encouraging equality and equal access to travel for all
- Improving the health of communities and increasing levels of physical activity
- Improving air quality for the health of communities
- Providing access to green space
- Encouraging and enabling active travel by providing safe, continuous, direct, comfortable routes
- Providing a safe, healthy and attractive environment for people to live and work in

Technology

- Adapting to and embracing of new technologies in transport. For example, micromobility and autonomous vehicles.

2.4 The TfN strategy brings these themes, from international to local policies and priorities together, in order to shape and set out a forward-thinking transport strategy for Norwich.



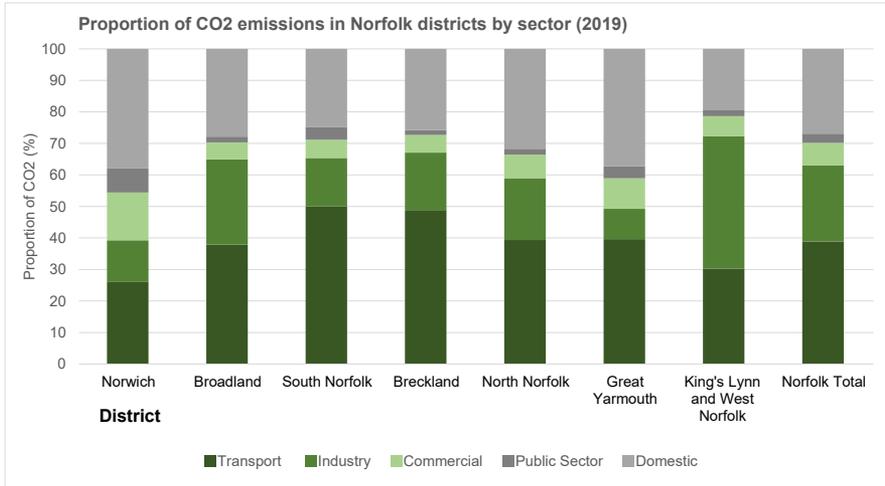
Chapter three - Problems Issues and Opportunities

Problems, Issues and Opportunities Summary

- 3.1 A number of key challenges need to be taken into account and overcome as part of the TfN Strategy. The following is a summary. These have been identified through a range of different sources including previous consultation, the councils' network management observations and monitoring, feedback from bus operators, surveys and computer-modelling analysis.
- 3.2 The main challenge is climate change and the achievement of net zero carbon targets. Norfolk County Council's Environment Policy, adopted in 2019, aims to achieve net zero carbon emissions from the council's operations by 2030 and a move towards carbon neutrality across all sectors by the same date. Alongside this, central government also amended the Climate Change Act in 2019 with a target to achieve net zero carbon by 2050. The UK's sixth Carbon Budget, due to become enshrined in law, will set a target to reduce emissions by 78% by 2035 compared to 1990 levels. The transport sector is one of the highest emitters of carbon dioxide and it is therefore expected that large carbon savings are made within the sector to contribute towards the achievement of the goals. The TfN strategy needs to contribute to this key ambition.
- 3.3 Within the built-up area of Norwich there are already high levels of active travel underpinned by recent investments. There is a well-developed commercial public transport network with a history of good working relationships between local authorities, businesses and transport operators. Encouragement of electric vehicles (EVs), public transport, active travel and reducing demands for travel are some transport interventions which could help Norwich and



the surrounding area contribute to carbon savings, as well as adequate planning and monitoring of carbon emissions such as the use of carbon budgeting.



3.4 Air pollution is a significant issue for Norwich. The city centre is an Air Quality Management Area (AQMA) due to the annual average nitrogen dioxide levels exceeding recognised thresholds. High levels of nitrogen dioxide and particulate matter have also been identified along the primary routes into the city as well as in the wider urban area of Norwich. This has a detrimental effect on human health causing a reduction in life expectancy and increasing the risks of heart disease and lung cancer. It is a key issue the strategy needs to overcome for the health of both the people and environment of Norwich. Monitoring shows other locations where nitrogen dioxide levels are high, but not in excess of thresholds, and people often express concern about areas including outside schools.



- 3.5 The variety of landscapes, neighbourhoods, levels of wealth and lifestyles within Norwich and surrounding areas need to be respected and enhanced where possible when implementing transport interventions.
- 3.6 In areas of higher deprivation, travel particularly by private cars and buses can become inaccessible due to high costs. This can limit access to opportunities for employment, education and training and ultimately result in social exclusion. The challenge is to overcome this and provide a transport network accessible for all. Good progress has been made with the Beryl bike hire scheme and the roll-out of a comprehensive, high quality cycle (pedalway) network. Within the city centre in particular, improvements to the streetscape and removal of general traffic has added to the vibrancy of areas, supporting the city's and county's economy, preserving and enhancing the city as a major retail and employment centre for a large surrounding area.
- 3.7 Car ownership also varies considerably across the Norwich area with more central areas of the city having lower ownership and using a variety of travel modes, and the suburbs having the highest ownership rate. Many people have a perception that there is no suitable alternative to car travel; which can be the case for some trips. However, this can make public acceptance of schemes difficult to achieve due to the differing travel behaviours and needs across the Norwich area. Car culture and single occupancy vehicles are particularly difficult behaviours to address and it is made more challenging by the rurality of the areas surrounding Norwich where often there is no alternative but to use a car, at least for part of a journey. Bus fares do not compete with parking tariffs within the city, hence making the car a more attractive option and encouraging their use. In addition, in the same amount of time, you can travel further by car than by bus. This adds to the attractiveness of using a car.



- 3.8 Perceived concerns and lack of confidence in the safety of active travel options can reduce how often people travel by bike or on foot. This must be overcome to achieve net zero targets and to improve air quality and congestion. For many trips in and around Norwich there are viable alternatives to car use, especially single-occupancy car use, and these opportunities are increasing with the roll-out of a high quality cycle network, the trialling of e-scooters, hire schemes for standard and electric bikes and a comprehensive public transport network.
- 3.9 A number of large housing developments are currently being built and/or have been allocated in the Norwich area as well as the wider surrounding area. As Norwich is the primary jobs hub and the destination for many commuters across the county, the city centre becomes congested, particularly at peak times. Growth in Norwich and the strategic growth areas surrounding it will place increased demand on the city's transport networks. New developments in the Norwich area provide an excellent opportunity to design neighbourhoods and communities that will facilitate and encourage sustainable travel and build well-designed, well-connected neighbourhoods.
- 3.10 The rapidly changing use of the transport network also presents a challenge when planning transport interventions. The Covid-19 pandemic resulted in a large shift in travel behaviour as many people stayed at home. Whilst the national lockdowns were only temporary, some impacts of the pandemic on the transport network are likely to remain due to the adoption of home working practices. In addition, the impact of rapidly advancing technology is changing the way the transport network is used. For example, increases in online shopping and food delivery, and new modes of transport, such as micromobility and E-scooters, all pose a challenge towards the existing network. The identity of the high-street is also evolving and as a result will change the way people use, move around and access the central business district of Norwich.



- 3.11 Administration and funding of transport in Norwich adds complexity to the management of the transport network. For example, bus provision, car parking and enforcement of parking and moving traffic offences are currently carried out by different organisations making join-up possible only through working in partnerships.
- 3.12 Alongside the opportunity to refresh the TfN strategy, there are also opportunities being taken to progress, for example, the Norwich Local Cycling and Walking Infrastructure Plan, which is progressing ahead of the strategy, and finalising the Bus Service Improvement Plan by mid-2022. Funding bids provide an opportunity to secure funding for implementing measures, with current opportunities including Towns Fund, Levelling Up Fund and Active Travel Fund. Preparation of the TfN strategy will provide the context for a range of opportunities, even though inevitably some of their timescales do not align exactly.



Chapter four - Vision and Themes

Vision

Norwich and the Strategic Growth Area around it will become a place to thrive because shared, clean, active and accessible travel are the first choice for journeys, and people within at least the urban area can access a range of services without a car.

Themes

Norwich and Norfolk

Businesses and people can succeed because they have clean, high-quality, modern and reliable connections. The health and well-being of people, and the success of the area and its places, is supported by a transport system that respects the environment.

A Zero Carbon future

Carbon is reduced: reductions in carbon emissions from transport in the Norwich area help achieve carbon neutrality by 2030 across all sectors in Norfolk. We have established a carbon baseline and developed a transport carbon budget.

Improving the Quality of our air

Air quality is good. We have no air quality management areas and our plans mean air quality won't be an issue in the future.

Changing attitudes and behaviours

People choose to primarily travel around by using active travel; public transport provides a suitable alternative for other trips.



Supporting Growth Areas

Sustainable growth in the right place is supported.

Meeting Local Needs

The transport system supports the needs of everyone, being designed to take account the different needs of different people.

Reducing the dominance of traffic

People and places are at the heart of what we do. The dominance of vehicle traffic will be reduced: Speeds are reduced to 20mph in residential neighbourhoods, traffic does not use the city centre unless it has a purpose to be there.

Making the Transport system work as one

People have confidence in the transport system because they benefit from knowing that it is well connected, safe and reliable. The facilities available for different types of journey have been well-planned and prioritised and there is seamless interchange between different forms of transport.

Making it Happen

Our vision is achieved through dialogue and action between people and partners.





www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

Norwich and Norfolk



Chapter Five - Norwich and Norfolk

Highlights of this Chapter

This section sets out what the main difference the policies set out in this chapter will make, and some of the key commitments and interventions that the strategy will bring about:

- This section sets out the relationship of the Transport for Norwich strategy with the Norfolk Local Transport Plan
- It reinforces the position of Norwich and its strategic growth area as the centre for a large part of the county
- It emphasises the need to maintain good key connections for longer-distance trips.

Context

Introduction

5.1 Norwich is Norfolk's largest urban area and comprises the city itself and the built-up fringe parishes in Broadland and South Norfolk districts. It is one of the largest centres of employment in south-east England, making the city and its hinterland an important focus in the region for a range of services, as well as the administrative and operational headquarters for a number of organisations. Due to its prominence in the county, the city attracts a large amount of inward and outward movements, particularly during peak commuting hours. Though most commuters live within around five miles of the city centre, some travel into the area from much further.



- 5.2 The city is served by rail, road and bus links from surrounding areas. These links are focussed on main corridors, however, and do not cater for all people and goods needing to get to the city. There is also a large range of different types of movement – both within and outside of the urban area – that need to be accommodate and people have different expectations (and requirements) about how they want to travel and their expectations of the transport system. An efficient, connected transport network linking people to and from key locations within and around the city which improves access to employment, education and leisure facilities in a sustainable manner is important to serve existing businesses and populations, as well as planned largescale growth.
- 5.3 The TfN strategy looks to meet the wide range of travel needs around, to and from Norwich, and to deliver a transport network which provides access and connectivity between key locations and reinforces Norwich as the central service centre for much of the county. The strategy also delivers against the county council's fourth Local Transport Plan policies: see below. Enhancing the connectivity of Norfolk and Norwich is also a key ambition of the emerging Transport East and New Anglia Local Enterprise Partnership strategies which want to see improved connections between ports, airports and priority places both within the region and nationally.

Norfolk Local Transport Plan policies and their relationship to this strategy

- 5.4 The TfN strategy sets out the transport strategy for the Norwich area. It complements a range of other strategies and sits within the Norfolk Local Transport Plan (LTP). This sets out seven strategic objectives to guide future evolution of Norfolk's transport network across the county: embracing the future, delivering a sustainable Norfolk, enhancing connectivity, enhancing Norfolk's quality of life, increasing accessibility, improving transport safety and providing a



well-managed and maintained transport network. Alignment of the TfN Strategy to these strategic objectives will be important for its success.

- 5.5 The Local Transport Plan sets out a strategy for the county of Norfolk. This recognises, amongst other things, the importance of connections into the county from elsewhere, and the importance of connections into places like Norwich.
- 5.6 Alongside the LTP, there are a many other relevant policies and priorities which have guided and shaped development of this TfN strategy.
- 5.7 The TfN strategy brings these themes, from international to local policies and priorities together, in order to shape and set out a forward-thinking transport strategy for Norwich.

Strategy and Policy

Strategic Connections

- 5.8 High quality connections between Norwich, its strategic growth areas, the wider area and markets beyond Norfolk are vital to the economy. The city centre has good rail links to London, Cambridge and Stansted. There is ambition for further improvements. These include faster journeys and higher frequencies to link further afield to the Midlands and north of England. East-west road connections can be slow and unreliable. The Cambridge-Norwich tech corridor promotes growth and connectivity to maximise the benefits that can be achieved along the corridor arising from the influences of Norwich and Cambridge. As well as better connections to places further afield, it is important to improve connectivity to major employment areas like the University of East Anglia/Norwich Research Park/hospital area, Broadland Business Park and the city centre.



Statement of Policy

STRATEGIC CONNECTIONS

Strategic connections and hinterland access will be promoted to enhance the role of Norwich as the regional capital.

Key Actions

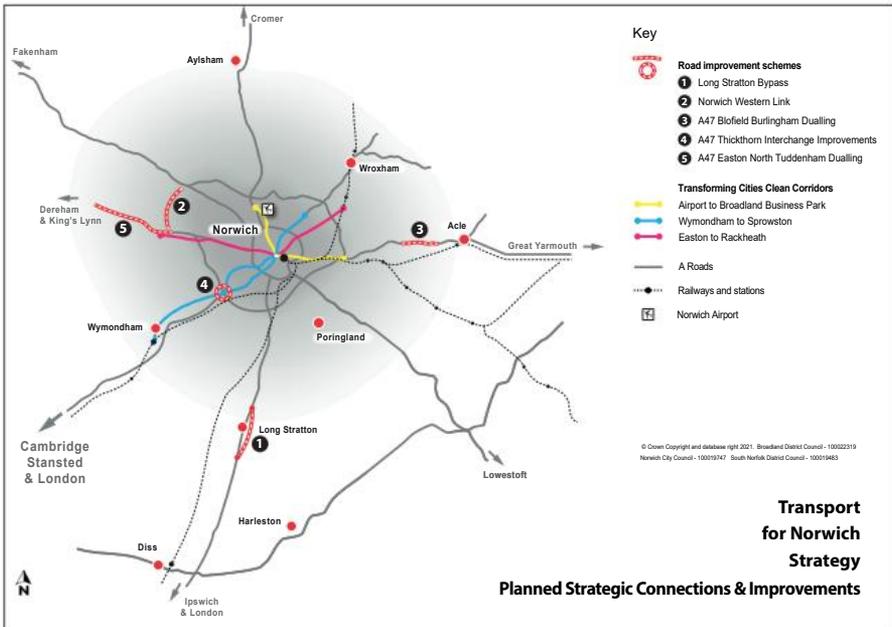
- 5.9 We will ensure that new strategic connections are optimised to benefit the economy, this includes rail enhancements to Cambridge, Stansted, London and other destinations, main bus and coach links, the Norwich Western Link, A47 improvements, and Long Stratton Bypass. Sustainable transport measures will be promoted to capture the benefits of these connections within the Norwich urban area and the strategic growth area around it. Individual schemes will need to mitigate their environmental impacts through the detailed work on these projects.
- 5.10 We will ensure that Norwich's role as a regional economic centre and transport hub is supported through excellent transport connectivity to the Norwich travel to work area and longer distance connections are improved to markets outside the county. The park and ride system plays an important role in maintaining good access into Norwich for trips from outside the urban area.

Supporting Actions

- 5.11 We will also:
- Ensure that accessibility to transport gateways is improved. These include Norwich Airport, Norwich rail station, Norwich bus station and Wymondham rail station



- Ensure that transport connections to identified strategic employment sites are enhanced by public transport, walking and cycling
- Carry out a strategic assessment to evidence the opportunities to deliver enhanced sustainable transport interventions as a consequence of completing the committed Transforming Cities interventions (a major package of improvements focussed on public transport, walking and cycling) and the Norwich Western Link
- We will review the measures that weren't funded through the Transforming Cities package to ensure these support the objectives.





www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

A zero-carbon future



Chapter Six - A zero-carbon future

Highlights of this Chapter

This section sets out what the main difference the policies set out in this chapter will make, and some of the key commitments and interventions that the strategy will bring about:

- This chapter includes commitment to achieve net zero carbon in line with Norfolk County Council's environmental policy
- To achieve this will require significant and far-reaching interventions including reductions in travel demand, mode shift through an increased emphasis on active travel and accelerating the switch to electric vehicles
- This is likely to result in imposing measures that will limit or restrict use of the private car within the city, particularly vehicles powered by internal combustion engines. Such restrictions are also required to achieve the ambitions for clean air, as set out in the subsequent chapter.

Context

Introduction

6.1 Reduction of carbon dioxide emissions is an internationally recognised priority in order to slow and mitigate the damaging effects of climate change. The transport sector is one of the largest emitters of carbon dioxide in the UK accounting for 34% of UK carbon dioxide emissions in 2019 (Department for Business, Energy and Industrial Strategy, 2020). More locally, emissions from transport in Norwich City made up around 25% of the city's carbon dioxide emissions in 2018 (National Atmospheric Emissions Inventory, 2018). In Broadland and South Norfolk districts it was 36% and 53% respectively.



6.2 The United Nations Paris Agreement (2015) internationally ignited the increased drive to slow global warming with its ambition to keep the global temperature rise well below 2 degrees Celsius compared to pre-industrial levels, and preferably 1.5 degrees Celsius. Nationally, the Climate Change Act (2019 revision) has prompted a drive towards net zero with the UK government committing to the achievement of net zero by 2050. This has been progressed by the recent publication of the Department for Transport's Decarbonising Transport Plan, in July 2021, which sets out how government aims to reduce carbon emissions across the transport sector to achieve the UK's legally binding 2050 net zero target. Aligning to this, Norfolk County Council has its own targets, outlined in the Environmental Policy (2019), to achieve net zero in the council's operations by 2030 and to work towards carbon neutrality within the council's wider areas, also by 2030. Norwich City Council has declared a Climate Emergency adding to the decarbonisation drive and the need for action to mitigate climate change. The TfN strategy has an important role to play in contributing towards net zero targets due to transport's large contribution both locally and nationally towards carbon dioxide emissions.

Strategy and Policy

Zero Carbon

6.3 Carbon reduction is at the heart of our strategy. Ambitious targets to work towards carbon neutrality across all sectors in the county have been adopted by the county council; Norwich City Council has declared a carbon emergency. We need to reduce the carbon emissions from transport to achieve these local objectives and the national targets of cutting emissions by 78% by 2035 compared to 1990 levels. The Norwich area already starts from a good position, with many trips in the urban area already undertaken by clean, sustainable modes.



Statement of Policy

NET ZERO CARBON

We will reduce carbon emissions from transport in Norwich to make the necessary contribution to the national target of reducing emissions from all sources by 78% by 2035 compared to 1990 and achieving net zero emissions by 2050. A carbon budget will be developed for the transport programme to demonstrate how it will ensure emissions are contained within the budget.

Key Actions

- 6.4 We will devise a carbon budget for surface transport across Norwich and its strategic growth area. A baseline will be set. We will use this to assess potential interventions to guide delivery. We will monitor the efficacy of interventions using the carbon budget to guide further delivery.
- 6.5 We will gather evidence to provide the basis for significant and far-reaching interventions including reductions in travel demand, mode shift through an increased emphasis on active travel and accelerating the switch to electric vehicles. These are covered in Chapter 7 Improving the Quality of our Air

Supporting Actions

- 6.6 We will also:
- Continue to develop and deliver a range of measures to help people to get about using clean, sustainable modes of transport. These include:
 - An electric vehicle strategy is being developed and will be used to assist in the transition to clean fuels



- Active travel networks including the pedalway network have been developed, hire bikes are available and an e-scooter trial is underway
- Work with bus companies on switching to cleaner vehicles
- Implement planned sustainable transport projects to serve planned areas of growth such as delivery of the Transforming Cities and LCWIP programmes, which will see sustainable connections to support planned growth.
- Achieve net zero for Norfolk County Council assets and services by 2030 in line with the county council's Environmental Policy Target.





www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

Improving the quality of our air



Chapter Seven - Improving the quality of our air

Highlights of this Chapter

This section sets out what the main difference the policies set out in this chapter will make, and some of the key commitments and interventions that the strategy will bring about:

- This chapter includes commitment to achieve clean air
- To achieve this will require, as for reducing carbon, significant and far-reaching interventions including reductions in travel demand, mode shift through an increased emphasis on active travel and accelerating the switch to electric vehicles
- This is likely to result in imposing measures that will limit or restrict use of the private car within the city, particularly internal combustion engine vehicles. Such restrictions are also required to achieve the ambitions for clean air
- These measures will need significant further study and engagement work to consider before being able to commit to delivery of a preferred option, but the following interventions should be further considered:
 - Clean Air Zone
 - Workplace parking place levy
 - Road charging / congestion charge
 - Vehicle bans (eg prohibiting petrol and diesel engine vehicles from the city centre)
 - Promoting less polluting public transport.



Context

Introduction

- 7.1 Poor air quality is considered by the UK government as being the “largest environmental risk to public health in the UK” (House of Commons Library, 2019). Government has legally binding targets in place in order to reduce emissions of five damaging air pollutants, including nitrogen oxides and particulate matter.
- 7.2 Transport has a key role to play in improving air quality and meeting the targets. The Clean Air Strategy 2019 reports that road transport, domestic shipping, aviation and rail are responsible for a significant proportion of air pollutant emissions: 50% of nitrogen oxides, 16% particulate matter and 5% of non-methane volatile organic compounds, all of which are bad for health. Government’s Clean Air Strategy 2019 and the Road to Zero Strategy 2018 pave the way to improving air quality in transport and achieving legally binding targets, such as plans to ban the sale of new conventional petrol and diesel cars and vans in 2030.
- 7.3 Air pollution is also a significant issue more locally in Norwich. The city centre is an Air Quality Management Area (AQMA) due to the annual average nitrogen dioxide levels exceeding the recognised thresholds. High levels of nitrogen dioxide and particulate matter have also been identified along the primary routes into the city as well as in the wider urban area of Norwich. This has a detrimental effect on human health causing a reduction in life expectancy and increasing the risks of heart disease and lung cancer.
- 7.4 Various interventions to improve air quality in Norwich have been undertaken, alongside Norwich City Council’s Air Quality Management Action Plan which sets out a five- year plan for improving air quality.



Strategy and Policy

Air quality

7.5 Air quality is an issue within the Norwich area. In some places, air quality falls below recognised standards, meaning that an Air Quality Management Area (AQMA) has been declared across much of the city centre. An Air Quality Management Action Plan has been agreed. In some locations elsewhere, for example Wroxham Road/ Ring Road, Sprowston and Reepham Road, Hellesdon, nitrogen dioxide levels are near to the levels where an AQMA would have to be considered. Because poor air quality has detrimental effects on human health, we want to ensure that air quality is tackled, that we no longer have to have an AQMA, and that our range of future interventions means that this doesn't become a problem again in the future.

Statement of Policy

AIR QUALITY

Air quality across Norwich and its strategic growth areas will improve so that we will:

- i) Remove the need to have AQMAs**
- ii) Improve air quality across Norwich and its strategic growth areas in the long term.**

Key Actions

7.6 Significant and far-reaching interventions will be considered including measures limiting or restricting use of the private car within the city, particularly vehicles powered by internal combustion engines, and promotion of low/zero emission public transport.



- 7.7 We need significant further study work to understand the impacts that such measures will have, and which might be appropriate for further consideration. This will be done through a mix of technical study work alongside extensive engagement with a range of partners and the public to understand what it means for business, and the effects such measures might have on how easy people find it to get about.
- 7.8 Considerable further work is required before being able to commit to delivery, but we envisage that the following interventions should be further considered, with a view to taking forward the preferred option:
- Clean Air Zone to charge vehicles with higher emissions
 - Workplace parking place levy
 - Road charging / congestion charge
 - Vehicle bans on certain roads or areas

Supporting Actions

- 7.9 We will also:
- Adopt an electric vehicle strategy, setting out how we will work on the provision of electric vehicle charging infrastructure for fleet vehicles (buses, vans etc) and for private motorists. This will accelerate the switch to electric vehicles
 - Implement traffic management schemes to improve vehicle flow and reduce idling
 - Work on behaviour change campaigns to discourage unnecessary journeys and encourage active travel and clean travel modes (see Chapter 8 Changing Attitudes and Behaviours)



- Work with partners including Public Health and local communities to understand and investigate concerns about air quality in local areas, such as outside schools. We will look to whether innovative technology will help monitor air quality and will look to work with local communities on innovative measures such as school streets
- Assess whether any routes across Norwich and its strategic growth areas are at risk of falling into AQMA status, or lie close to the AQMA threshold, and identify appropriate mitigation strategies
- Work with public transport and taxi operators and freight companies to introduce cleaner vehicles
- Assess the air quality impacts of any transport scheme promoted under the Transport for Norwich strategy.





www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

Changing attitudes and behaviours



Chapter Eight - Changing Attitudes and Behaviours

Highlights of this Chapter

This section sets out what the main difference the policies set out in this chapter will make, and some of the key commitments and interventions that the strategy will bring about:

- This chapter recognises that there needs to be significant commitment to engagement with a range of partners including businesses as well as those who use the networks. Without engagement, it will continue to be difficult to achieve the strategic vision because there will be a lack of support when schemes are taken forward to delivery
- People need to understand, be persuaded about, and support measures that are being developed

Context

Introduction

8.1 Changing the attitudes and behaviours of those who use the transport network can help to make the network more sustainable, safer and work more efficiently. Behaviours are influenced by a variety of factors including where people live and their socio-economic status. Understanding people's behaviours and effecting necessary changes will play a pivotal role in achieving the TfN strategy objectives and in the delivery and uptake of new schemes.



- 8.2 There is a national drive to change travel behaviours and attitudes in order to promote a modal shift towards more sustainable forms of transport. For example, government's Gear Change Vision for Walking and Cycling (2020) sets the national ambition to increase walking and cycling, particularly for shorter journeys which may have previously been carried out by car. Gear Change also stresses the importance of engagement with stakeholders and public acceptance of schemes. Support from key stakeholders and those using the network is crucial to bringing forward successful schemes.
- 8.3 The Norwich City Council Environmental Strategy 2020-25 also prioritises the need for behavioural change. One of the strategy's priorities is 'to work with partners to promote behavioural change to establish a more sustainable society'. It is important the TfN Strategy aligns to this as behavioural change in transport can be used to encourage uptake of more sustainable travel options, delivering benefits to air quality, health, the environment and relieving congestion.
- 8.4 Behaviour change is also essential to improving safety on the transport network, as people make individual choices that lead to unsafe outcomes. There are opportunities to improve enforcement with proposals being considered to allow local authorities to take on enforcement for some moving traffic offences alongside their existing parking enforcement role. Aligning enforcement and utilising behavioural change methods to campaign for and encourage the safe and legal use of the transport network will help achieve an efficient and safe transport system which in turn can provide people with more confidence to utilise sustainable modes of transport such as walking, cycling and public transport.



8.5 Better management of parking will make bus travel more convenient and reduce obstructions of pavements, cycle routes and the network in general. The Department for Transport launched a consultation on pavement parking in August 2020 which proposed giving local authorities more powers. Better parking management can enable road space to be used more efficiently by, for example, dedicating road space to bus priority, walking and cycling facilities and public realm improvements, supporting the Greater Norwich Local Plan ambition to integrate parking in a manner that does not dominate the streetscape.

Strategy and Policy

Sustainable travel choice through behaviour change

8.6 How people choose to travel will have a significant bearing on how successful we are in meeting our ambitions. We need to make sure that we are providing the information and measures to influence the travel choices people make in order to find it easy, safe and convenient to get to where they need to get to. Our focus will be on active and clean travel. We need to engage to understand what people need, to ensure active and clean travel are suitable and that we are putting in place the right measures. We also need to show people how active and clean travel can become their first choice, to encourage them to switch how they travel.

Statement of Policy

SUSTAINABLE TRAVEL CHOICE THROUGH BEHAVIOUR CHANGE

We will develop a sustained and coordinated approach to informing and influencing attitudes and behaviours towards sustainable travel choices.



Key Actions

8.7 We will use a mixture of information, engagement, and incentives and disincentives. A brand is being developed, which will provide a one-stop-shop countywide to deliver information, advice and messages. We will do this through a range of partners.

Supporting Actions

8.8 We will also:

- Work with business and residential developments on travel plans.
- Seek to positively tackle travel behaviours that cause congestion or air pollution eg smoothing rush hour congestion by employers being encouraged to allow for staggered work times, flexi hours and home working, and working with schools and businesses on travel plans.
- Support car free and low car development in the city centre and locations that are highly accessible to a range of alternative travel modes.
- Support initiatives that reduce car dependency, car ownership and private car usage eg car club.



Enforcement

- 8.9 Enforcement is currently carried out by the local authorities and the police. Local authorities currently enforce parking and some traffic matters such as use of bus lanes. It is expected that local authorities will be given additional powers to enforce a further range of matters although the police and other agencies like road safety partnerships will continue to be responsible for matters like speeding or drink driving. Enforcement is supported by campaigns and information to encourage changes in behaviour.

Statement of Policy

ENFORCEMENT

Working with partners, we will use a range of enforcement options such as moving traffic offences and parking to help us successfully deliver journey time, parking policy and promote active travel.

Key Actions

- 8.10 We commit to continuing to use cameras to enforce offences related to inappropriate use of bus lanes and bus gates and make use of new powers to enforce moving traffic offences (banned turns, yellow box junctions etc) to manage the way that journeys operate and make journeys more reliable.
- 8.11 Pavement parking will be reviewed to see if it is appropriate to introduce an area wide ban, allowing parking on pavements only in marked bays where it is required and doesn't obstruct other users.



Supporting Actions

8.12 We will also:

- Continue to support campaigns and information to encourage changes in behaviour. Enforcement will be used for effective management of the transport network. The local authorities will continue to enforce parking and loading restrictions, and use of bus lanes and bus gates.
- Continue to tackle disruption on the road network caused by car park queuing. This is particularly acute before Christmas and when large events are happening in the city. We will continue working in partnership with Norfolk Constabulary on fixed and mobile safety camera enforcement, and with communities who wish to participate in Community Speedwatch.
- Continue to use any financial surpluses generated by enforcement activities to support transport services.





Transport
for Norwich



Norfolk
County Council

www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

Supporting Growth Areas



Chapter Nine - Supporting Growth Areas

Highlights of this Chapter

This section sets out what the main difference the policies set out in this chapter will make, and some of the key commitments and interventions that the strategy will bring about:

- This chapter sets out how the strategy supports growth areas
- The policies – whilst important – are largely a continuation of existing policy, trying to make sure that growth is located in places where people can easily reach a range of services, and that where needed connections to growth areas are improved, principally through bus and active travel networks.

Context

Introduction

- 9.1 Norwich and the strategic growth areas are experiencing significant growth in jobs and housing and is planned to continue to grow throughout the TfN strategy period. As Norwich is the primary jobs hub with a travel to work area of over 30 miles, the city centre can become congested, particularly at peak times, causing delays and reducing the efficiency of buses. The planned growth in Norwich will place increased demand on the city's transport network.
- 9.2 Planning for new development needs to continue to be coordinated with transport in order to ensure that it is sited within places people can easily get to, and that it is served well by transport connections. Poorly planned locations for development can lead to complex transport patterns, making places difficult to serve, especially by



public transport. Well-planned development provides an excellent opportunity to encourage the uptake of sustainable transport from the outset in new growth areas through the provision of well-designed and well-connected neighbourhoods.

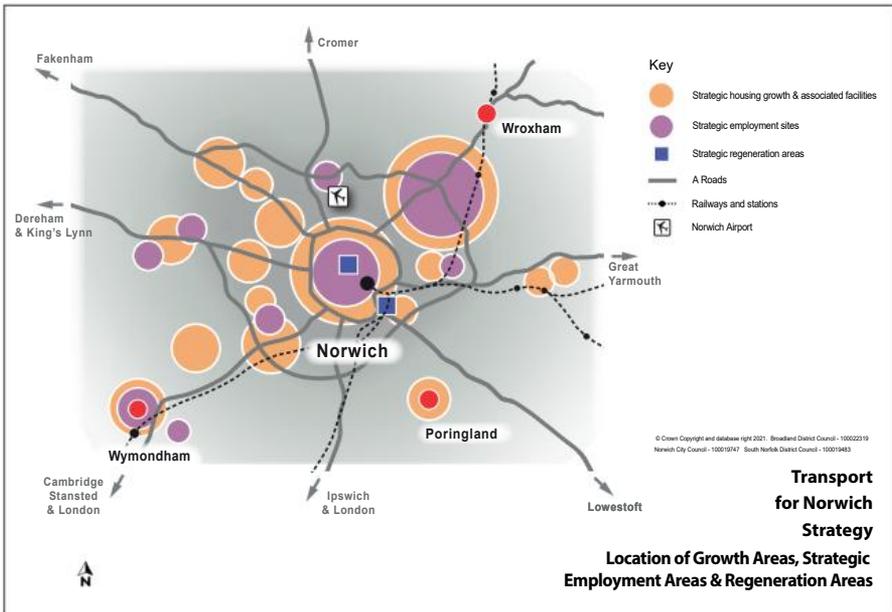
- 9.3 The A to Better initiative provides travel plan advice for residents of new developments in order to encourage sustainable travel behaviours. The initiative also works with developers to help create communities where it is easier to choose to travel sustainability. This initiative changes the travel hierarchy to make modes such as walking, cycling and public transport a priority as these modes are key to achieving good health, improved air quality, a more efficient transport network and a healthy environment, which are key local and national priorities. This is supported by the Greater Norwich Local Plan which acknowledges the need to shift away from the use of the private car in the Norwich's urban areas and the need to create places which are safe, attractive and well-designed for pedestrians, cyclists and public transport.
- 9.4 The Greater Norwich Local Cycling and Walking Infrastructure Plan also supports Norwich's growth areas by providing strategic connections between existing and planned residential areas, areas of employment, education facilities, transport hubs, as well as other key destinations in the Norwich area. This facilitates sustainable travel to and from growth areas, meeting the ambitions of the Greater Norwich Local Plan and National Planning Policy Framework requirements (NPPF, 2019).
- 9.5 The TfN strategy aligns with these policies and seeks to support the growth areas across the city and its surrounding areas, easing the impact of large-scale growth on the transport network and promoting sustainable movements in and around the city.



Strategy and Policy

Supporting Growth Areas, Regeneration Areas and Strategic Employment Areas and Location of New Development

9.6 Norwich has significant planned growth. The draft Greater Norwich local plan identifies 49,500 new homes and 33,000 new jobs to 2038. 74% of this growth is planned to take place within Norwich and its strategic growth area. Our transport strategy recognises that growth of this scale is dependent on developing the transport system to provide sustainable connections to growth areas and employment areas.



Statement of Policy

SUPPORTING GROWTH AREAS, REGENERATION AREAS & STRATEGIC EMPLOYMENT AREAS

We will proactively plan to meet the transport requirements of planned growth areas, regeneration areas and strategic employment areas and their associated transport commitments.

Statement of Policy

LOCATION OF NEW DEVELOPMENT

New development will be located and designed to support the objectives of the TfN strategy, and the primary focus will be on achieving connectivity through walking, cycling and public transport and maximising the proportion of trips made by these modes.

Key Actions

- 9.7 We will ensure that existing transport infrastructure commitments associated with planned growth and redevelopment areas are delivered. We commit to continued working in partnership with local planning authorities in devising suitable transport measures to support planned growth as part of the implementation of the Greater Norwich Local Plan. Emphasis will be on promoting connectivity through public transport, walking and cycling. We will ensure that the TfN action plan effectively considers and gives appropriate priority to capital investment in infrastructure that will support planned growth.



Supporting Actions

9.8 We will also:

- Work with district Local Planning Authorities to support masterplans, development briefs and design codes / guides that are aligned with TfN strategy. This could include securing infrastructure for electric vehicle charging
- Work with partners to future proof new development to ensure sustainable transport interventions can evolve over time
- Seek to encourage high density development where there is good access to transport hubs, local services and employment opportunities
- Implement the planned interventions agreed within the Transforming Cities Programme and the Norwich Walking and Cycling Infrastructure Plan.





Transport
for Norwich



Norfolk
County Council

www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

Meeting Local Needs



Chapter Ten - Meeting Local Needs

Highlights of this Chapter

This section sets out what the main difference the policies set out in this chapter will make, and some of the key commitments and interventions that the strategy will bring about:

- This chapter reinforces the importance of reducing casualties and that we need to have a transport system that supports the needs of everyone, being designed to take account the different needs of different people.

Context

Introduction

- 10.1 The transport network must meet the needs of its users in order to run efficiently and successfully. The transport needs of those who live in Norwich and its surrounding areas varies considerably due to the different nature of rural and urban neighbourhoods, age, levels of wealth and lifestyles people lead. This adds complexity when planning and implementing transport interventions.
- 10.2 Transport is important for social inclusion and well-being which can affect economic and social outcomes, and therefore levels of inequality. The below points, identified in a Department for Transport evidence review, highlight how transport is closely interlinked with inequality and hence why we should strive to provide a transport network accessible to all:
- People with more money have more options in both where to live and how to travel and transport links are a key component of land value and housing costs



- Concentration of jobs and amenities is often facilitated by transport links, meaning access to these transport links is necessary for accessing those opportunities
- Accessibility of the transport system itself in terms of cost, geographic accessibility and scheduling of different options.

10.3 Levels of inequality in Norwich vary considerably which leads to disparities in people's access to transport and therefore access to employment and education opportunities. Car ownership across Norwich and its surrounding areas varies considerably. This can be a lifestyle choice for some, but for others low incomes and protected characteristics may make car ownership inaccessible. Other modes such as buses, rail, walking and cycling can be less convenient, particularly depending on where people live, the cost, scheduling, as well as concerns regarding the perceived safety of roads for walking and cycling. It is highly important that the TfN strategy seeks to provide a transport network accessible to all with the ambition to overcome barriers of transport inequality across the city to meet the needs of the network's users and government ambitions for equal access as set out in the Inclusive Transport Strategy (2020) and Equality Act (2010).

10.4 Users of Norwich's transport network also need to be safe and to feel safe. Trends show that the number of people killed or seriously injured on the transport network have been declining over the past 30 years as vehicle technology, road engineering and driver behaviour has improved. However, injury rates are now stubborn to further improvement. Recorded injuries in Norwich occur widely across the urban area and predominantly on roads and junctions where speeds are 40mph or 30mph, and less so in 20mph areas. The number of cyclist injuries has been increasing alongside the number of people cycling in the last ten years. However, a decline was observed in 2020, likely to be due to the



pandemic lockdown restrictions. An increase in the perception that roads are unsafe has also been observed in recent walking and cycling surveys and is believed to suppress interest in active travel. Overcoming this perception will be key to increasing the uptake of active travel and achieving the TfN Strategy objectives.

- 10.5 Road safety campaigns can help to address safety concerns. These have sought to target the most vulnerable road users to be more vigilant by using targeted socio-demographic techniques. The Healthy Streets Approach also looks to improve the safety of streets in order to make them places people feel safe to walk, cycle and visit. This approach has been adopted for Norwich and will be a key consideration when developing new schemes. Improving the safety of Norwich's transport network is a key objective of Norfolk's Fourth Local Transport Plan, in which the TfN Strategy delivers against to provide a transport network which meets the needs of its users.

Strategy and Policy

Road Traffic Harm Reduction

- 10.6 Although the numbers of people killed or seriously injured on the transport network have been declining over the past 30 years as vehicle technology, road engineering and driver behaviour has improved, injury rates are now are stubborn to further improvement. Trends for numbers of cyclists injured have been increasing, reflecting an increase in the number of people cycling in the past 10 years.
- 10.7 The perception that roads are unsafe is believed to suppress interest in active travel, particularly for travel to school and travel to work reasons or simply for leisure. Local Safety Schemes are undertaken periodically when patterns of risk emerge, and value for money improvements are considered to be feasible.



Statement of Policy

ROAD TRAFFIC HARM REDUCTION

We will reduce the harms of road traffic associated with road casualties and tackle the fear of road traffic affecting vulnerable road users.

Key Actions

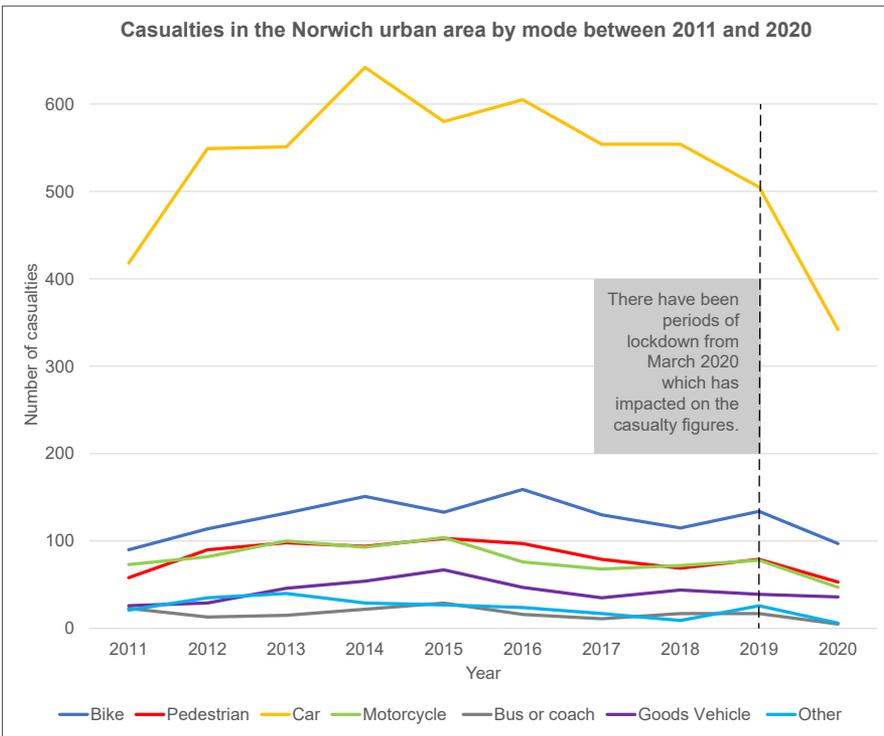
- 10.8 We will use the Healthy Streets approach. This approach puts the focus on people using the streets, using ten indicators, each describing an aspect of the experience of being on a street. These are prioritised and balanced to improve social, economic and environmental sustainability through design and management.
- 10.9 We will continue to tackle road casualties using the safe systems approach and working with road safety partners. The safe systems approach uses the following topics for how to deal with road safety collisions: Safe speeds; Safe roads; Safe road users; Safe vehicles and Post-crash responses.
- 10.10 This ensures that the emphasis is not entirely on the road user, since the approach accepts that people will make mistakes and that this needs to be considered.

Supporting Actions

- 10.11 We will also:
- Continue to work in partnership with Norfolk Constabulary in their roads policing role to tackle casualty reduction
 - Continue to seek to understand casualty factors, locational clusters, victim types, vehicle types and other patterns that merit intervention



- Remove extraneous traffic from neighbourhoods and reduce speed limits to 20mph (see Chapter 11 Reducing the Dominance of Traffic)
- Work with partners to better understand and overcome people’s perception of harm or safety to ensure that everyone can feel comfortable using the transport network.



Overcoming Barriers

- 10.12 A significant proportion of residents do not own or have access to a car. For some people this is a lifestyle choice; others might not be able to afford or able to buy or run a car. Therefore, they rely on alternative means of transport to get to work, education, health or other reasons such as providing care.
- 10.13 This might include using a scheduled bus service, a train, using a motorbike or moped, using a bike, walking, using a taxi or private hire vehicle, or community transport, or rely on volunteer car schemes. Often these alternatives are more difficult or less convenient than car travel, or simply not available. Consequently, people might experience difficulties and consider transport to be a barrier in their lives.

Statement of Policy

OVERCOMING BARRIERS

The barriers to travel will be overcome and there will be a socially inclusive approach to transport matters.

Key Action

- 10.14 The mobility requirements of those who might experience barriers to transport will be considered. This will include people with protected characteristics under the Equality Act 2010, those on low incomes and people without access to a private car. We will recognise the needs of those who need to travel to Norwich from the rural hinterland where access to non-car modes of transport might be limited; see Chapter 12 Making the Transport System Work as One. We will work with partners, and in the provision of information and infrastructure, to overcome barriers.



Supporting Actions

10.15 We will also:

- Introduce changes to make transport services simple to understand and use
- As part of our Bus Service Improvement Plan, and other related initiatives, consider how we can improve existing services and use technology and innovation to plan and provide transport solutions. This will include the use of apps to integrate how transport services and journeys can be planned, booked and paid for. This is part of our Behaviour Change work, see Chapter 8, Changing Attitudes and Behaviours.





www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

Reducing the Dominance of Traffic



Chapter Eleven - Reducing the Dominance of Traffic

Highlights of this Chapter

This section sets out what the main difference the policies set out in this chapter will make, and some of the key commitments and interventions that the strategy will bring about:

- Enhancing the public realm through improvements to the transport system
- The major implications of this policy are likely to be that new schemes, or changes to the network, will need to take full account of the place. This could mean the design of schemes is different, or of a different standard, in certain locations. A higher cost might be involved
- It also sets out a policy around neighbourhoods. Here, the significant difference will be that traffic impacts on residential neighbourhoods will be reduced
- This will be achieved through a series of interventions including 20mph speed limits, low traffic neighbourhoods (ie, stopping through traffic using routes through residential estates; they will be restricted to main roads).



Context

- 11.1 Norwich is a city of considerable historic importance and any infrastructure intervention must be sympathetic to its surroundings and the public realm or must provide sufficient mitigation measures. Over 90% of cars entering Norwich in the morning rush hour have single occupancy. Consequently, the road network in Norwich is dominated by car traffic, causing congestion, delays, and air and noise pollution all of which detract from the city's cultural heritage and can deter people from active travel. Road space in Norwich is finite and the space cars are currently taking up is not being used efficiently. Despite the provision of Park and Ride, local bus services and cycle routes, the car remains the preference with affordable parking within the city centre and, for some, free parking at their place of employment, adding to the convenience of cars over active travel and public transport options. The TfN Strategy strives to overcome this and reduce the dominance of traffic on Norwich's network.
- 11.2 The Covid-19 lockdowns did reduce the amount of traffic around the city. However, traffic levels are largely back to where they were pre-Covid-19. The benefits observed during the period of low traffic movements, such as improved air quality and reduced noise pollution, show what difference reduced traffic dominance can make.
- 11.3 The pandemic also altered the form of traffic in the city due to changed behaviours such as shopping, with more people shopping online during the national lockdown than ever before. When the first lockdown began in the UK, internet sales spiked from 19% of total retail sales to 32%, and levels remain higher than pre-Covid-19 over a year later. This results in increased delivery and light goods vehicles, adding to the dominance of traffic and making the streetscape less attractive for walking and



cycling. Whilst some delivery companies now use electric vans which lessen their contribution to air pollution, their presence on the network still exists and is something the transport network needs to adapt to as internet shopping and deliveries are projected to continue growing.

- 11.4 However, the pandemic did lead to the introduction of measures on some streets to help people keep their social distance, and to support local businesses when reopening, allowing restaurants and cafes to utilise the street space to seat customers. St Benedict's Street and Exchange Street were both closed to through traffic for these reasons. These interventions showed what could be done to support local businesses but also revealed learning points especially around the importance of delivery and customer collection for some retail outlets.
- 11.5 A Department for Transport public opinion survey on traffic road use, carried out in September 2020, found that three quarters of respondents supported the reduction of road traffic in towns and cities in England and their local area, and two thirds of respondents were supportive of reallocating road space to walking and cycling across towns and cities in England and their local area.
- 11.6 There are several policies that support the need for reduced traffic dominance. Government's Gear Change Vision (2020) looks to increase walking and cycling by segregating pedestrians and cyclists from volume traffic and implementing measures such as closing side roads to through traffic and creating school streets in order to create lower traffic neighbourhoods. This will contribute towards the creation of safe and peaceful environments to walk and cycle in. The Healthy Streets Approach also looks to create places where traffic is less dominant and where people feel safe and comfortable to walk and cycle and use public transport, as well as being sympathetic to the public realm.



Strategy and Policy

Places

- 11.7 The Norwich area has some highly valued historic and natural landscapes, streets and buildings. It is important that this is considered when transport interventions are being developed. The current Transforming Cities programme and the Cycle City Ambition Grant programme have both implemented schemes in sensitive historic areas of the city centre. The design of these interventions has been shaped by their environment to create public realm improvements and to be sympathetic to their surroundings.

Statement of Policy

PLACES

Changes to the transport network will seek to enhance the character and quality of places with historic, architectural or natural landscape character and ecological value.

Key Actions

- 11.8 Transport schemes developed in places of historical, landscape or architectural importance, including conservation areas, will be designed to ensure that they maintain or enhance the area and improve public realm.



Supporting Actions

11.9 We will also:

- Align our work in engaging with the planning system with the TfN Strategy eg ensure site allocations, masterplans, design codes and guidance deliver development in the right locations of the right quality
- Ensure that Conservation Areas will be respected or enhanced through the TfN strategy
- Ensure good quality materials and planting is sustained in maintenance activities.

Freight and deliveries

11.10 Freight and deliveries are essential for the functioning the city's economy. Attempts have been made to put in place freight consolidation schemes to minimise the impact of freight and delivery in the city. However, this has had limited success and take up. With the increase in online shopping and the impact of Covid-19 the pattern of freight and deliveries is changing and many localised deliveries to individual properties are being made this presents a challenge managing these movements on the local network. Some changes are starting to be made with the introduction of electric delivery vehicles by some online shopping companies. Norwich has also been trialling an e-bike cargo delivery service.



Statement of Policy

FREIGHT AND DELIVERIES

We will develop a coordinated approach for managing freight and deliveries to support clean modes of deliveries and minimise the impact of the movement of freight within the urban area with regard to emissions and traffic intrusion.

Key Actions

11.11 We will review how deliveries within the city centre are managed in the short term and in the long-term review how deliveries within the entire urban area are managed.

Supporting Actions

11.12 We will also investigate:

- Whether a Clean Air Zone could facilitate the shift to transhipment to a freight consolidation centre
- Provision of EV charge points for delivery vehicles
- Provision of e-cargo delivery services within the city centre



Neighbourhoods

11.13 Traffic and transport requirements have a very real impact on neighbourhoods within the Norwich area. We want to ensure that the strategy not only delivers on area wide objectives but also meets the needs of local communities. There has been a programme to introduce 20 mph zones across parts of the city and this strategy needs to take this forward to support low traffic neighbourhoods and active travel within these areas.

Statement of Policy

NEIGHBOURHOODS

We will work with local communities, elected members and stakeholders to reduce the impact of unnecessary traffic in neighbourhoods and provide connections that meet local needs and support active travel.

Key Action

11.14 We will undertake a strategic appraisal of traffic and transport issues experienced by local neighbourhoods to prioritise our work.

Supporting Actions

11.15 We will also investigate:

- Lower speed limits
- Low Traffic Neighbourhoods (reduce through traffic, point closures, bus gates)
- School streets (traffic reduction with part time road closures)
- Traffic management measures.





www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

Making the Transport
System Work as One



Chapter Twelve - Making the Transport System Work as One

Highlights of this Chapter

This section sets out what the main difference the policies set out in this chapter will make, and some of the key commitments and interventions that the strategy will bring about:

- We will develop a road hierarchy setting out the key corridors that will be for general traffic, the key corridors where public transport and active travel will be prioritised and areas where streets will primarily support communities who live there, or for leisure uses like meeting friends or entertainment
- On corridors prioritised for movement, we will identify ones where general traffic is prioritised; ones where public transport is prioritised; and ones where active travel is prioritised. This reflects that streets cannot accommodate effectively every demand, and we must prioritise
- We will also introduce a Travel Mode Hierarchy. This means that we will consider the needs of all users, thinking first about people who use sustainable transport modes
- These proposals will put the focus for capacity improvement towards the most number of people, rather than numbers of vehicles. This supports in particular prioritising bus travel rather than car traffic
- Parking will be reviewed to consider current parking capacity, arrangements, cost, availability and type.



Context

Introduction

- 12.1 There are many different moving parts which make up Norwich's transport network. The road network, pedestrian and cycle routes, bike and e-scooter share schemes, bus services, car clubs and rail all must work together to provide an integrated transport network which gets people to where they need to be efficiently, safely and sustainably. To enable this, transport interventions must prioritise the movement of people, not just vehicles.
- 12.2 Currently, cars are a convenient way of accessing Norwich which contributes to congestion, poor air quality and carbon emissions. One reason for the popularity of accessing the city by car is because of the affordable parking tariffs in the city centre. This is a concern for bus operators and leads to facilities such as the Norwich Park & Ride not being used to their full potential. The Bus Back Better Strategy (2021) aims to improve partnership working between local authorities and bus operators and encourage bus use, helping provide stability to services. Norwich's successful Transforming Cities Fund bid also looks to improve the bus network and to provide an 'ease of access and smooth interchange between transport modes' through the creation of mobility hubs. This will enable the transport network to work as one and make sustainable journeys more feasible, something the TfN strategy supports.
- 12.3 Norwich's Local Cycling and Walking Infrastructure Plan also improves connectivity, a key ambition of the Fourth LTP, and supports seamless transition between transport modes by connecting cycle routes and pedestrian facilities to transport interchanges. The TfN strategy will support the delivery of this cycling and walking plan which will help work towards achieving 50% of journeys in the city being active by 2030, a



key government ambition outlined in Gear Change (2020). The Norfolk Greenways to Greenspace Strategy also looks to provide safe routes for people to travel actively which link to the public transport network and the existing long-distance walking and cycling network. This contributes to an integrated transport network, encouraging active travel and providing improved access to greenspace which is essential for good physical and mental wellbeing.

- 12.4 Technological advancements can also support the transport network in working as one. Mobility as a Service can enable people to quickly and easily plan and pay for journeys which can consist of multiple different sustainable modes. Norwich's Beryl Bike and E-Scooter share scheme also helps provide an integrated transport system due to its flexibility and strategically located sites at the rail station, bus station and elsewhere. The scheme has been highly successful. Since its launch in March 2020 to June 2021, the Norwich Beryl scheme has seen more than 157,000 trips covering over 572,000km. The Norwich rail station bay has been the most popular destination for Beryl Bikes, a potential example of multi-modal travel in Norwich. Norfolk County Council is also involved in the MOBI-MIX project which is aimed at increasing uptake of low-carbon transport by making it cheaper, more sustainable and more accessible to cut the number of cars, ease congestion and cut CO2 emissions.



Strategy and Policy

Road Network and Travel Mode Hierarchy

- 12.5 For the general public, roads are classified as A or B roads, alongside the more minor roads. However, local authorities use a more sophisticated system for the purposes of managing and maintaining the road network, as well as a classification system for pavements, cycle ways and other transport assets. These are traditionally based on how well-used parts of the network are.

Statement of Policy

ROAD NETWORK AND TRAVEL MODE HIERARCHY

We will adopt a road network and travel mode hierarchy that will support mobility requirements of people rather than just vehicles and recognises the place function as well as movement function of different parts of the network.

Key Actions

- 12.6 We will introduce a hierarchy that reflects how roads, streets and spaces are used. This will range from identifying roads where essential movement will be the priority through to identify places where the primary use will be for meeting people, eating out or socialising.
- 12.7 Key movement corridors will prioritise movement of the greatest number of people rather than the greatest number of vehicles. This will ensure that they operate most effectively. The layout and constrained nature of roads in our urban areas means it is very difficult to make improvements for all types of user. Therefore, we will prioritise space for certain types of users rather than trying to make provision for all types of user along different corridors. We will identify corridors for general traffic; corridors where public transport



measures like bus lanes will be prioritised; and corridors where active travel measures like segregated cycle lanes will be prioritised.

- 12.8 Movement across Norwich and its strategic growth areas will seek to significantly reduce the intrusion of extraneous traffic within the city centre and residential neighbourhoods. Cross city traffic will be required to use orbital and radial primary routes rather than short cuts on neighbourhood roads.
- 12.9 These are potentially major changes. Although at this stage proposals have not been fully developed, a key diagram showing the longer-term changes to the network will be worked up to show how the network will be developed. This will be done as part of developing the strategy and action plan and will take account of the outcome of the consultation on the strategy and ongoing detailed technical work. These changes will be consistent with, and developed from, work done to date, such as delivery of the pedalway network and our Transforming Cities programme.
- 12.10 The key diagram will also show the cycle network in the Local Cycling and Walking Infrastructure Plan, currently being consulted on, and the neighbourhood areas (ie those areas where 20mph speed limits and low traffic zones could be introduced).

Supporting Actions

- We will continue to invest in a corridor approach to bus priority as part of the Transforming Cities Fund work and a network approach for the Local Cycling and Walking Infrastructure Plan
- We will review the requirements of motorcyclists and powered two-wheel vehicles in relation to bus lanes and bus gates
- Highway network directional signage will be amended to reflect the role of roads identified in the Road Network Hierarchy.



Bus Services

- 12.11 The availability and cost of bus services was a key issue identified in the consultation responses to the principles for a TfN strategy that was carried out in 2018. There are a number of bus operators that serve Norwich and although there has been no formal partnership there is a good track record of working together. This is evidenced by the commitment of First Bus to invest in their fleet to support the Transforming Cities programme.
- 12.12 Historically Norwich has seen high bus patronage although Covid-19 at least temporarily reduced this because of the need to run socially distanced services. The county council is forming an Enhanced Partnership and Bus Service Improvement Plan with local bus operators that will influence the development of the bus network. The council has also committed to develop an enhanced partnership with operators.

Statement of Policy

BUS SERVICES

Bus services will continue to be a vitally important transport solution. We will work in partnership with operators to deliver services that meet peoples travel needs.

Key Action

- 12.13 Continue to work in partnership with operators to develop bus services meet the requirements of people within the travel to work area to access the city centre, strategic employment areas and other key destinations such as health, education and retail facilities, whilst recognising that the majority of bus services in the Norwich area are run on a commercial basis by the operators.



Supporting Actions

12.14 We will also:

- Work with bus operators to develop a joint approach to bus and highway infrastructure investment priorities
- Investigate the introduction of higher priority on important bus corridors
- Appraise enforcement of bus lanes and bus gates
- Consider social needs in relation to bus services.

Parking Policy

12.15 The availability, ease and cost of parking is a major factor in how people choose to travel. If parking is easily available and inexpensive, people will see driving as the most convenient option, even though this could lead to unintended consequences like congestion.

12.16 Parking is provided by a mix of bodies including: private and local authority-run public parking in car parks; private car parks for businesses; and on-street parking controlled by the local authority. Local authorities therefore have some direct control over the numbers of car parking spaces and the cost of these. They can also influence the amount of parking within new developments. In the future, the local authorities will use their influence to make sure that the ease, availability and cost of parking is in line with the other objectives of the strategy. For example, this could mean limiting the numbers of publicly available spaces in city centre local authority car parks to ensure that sustainable travel by Park and Ride, local bus services, cycling



or walking is the first choice for people over the use of the private car. Any controls will need to be balanced against the need to ensure the city remains an attractive place for people to visit and do business in.

12.17 In Chapter 7 Improving the Quality of our Air, we outline how Workplace Parking Levies could be considered as one option to reduce carbon and improve air quality.

Statement of Policy

PARKING

Car parking will be minimised for the city while continuing to support its economic vitality and meeting essential needs. Parking policy and practice for on-street and off-street public parking will be developed to complement park and ride and support promotion of active travel.

Key Action

12.18 As part taking forward the action plan, we will undertake a review to look at the cost, availability and type of parking. This to make sure that the parking policy supports the objectives of the strategy including to reduce travel by car and ensure a switch to active travel and public transport, whilst still ensuring the economic attractiveness of Norwich.

12.19 Previous strategies introduced a cap on the amount of public parking provision in the city centre (10,000 spaces). This will be reviewed.



Supporting Actions

- We will ensure that that on-street parking policy and practice, including the provision of waiting restrictions, controlled parking zones, parking permit policies and on-street charging tariffs are kept under periodic review
- We will seek to align parking management with delivery requirements for loading in the city centre (use of pedestrian zone waiting restrictions that control access and loading). Parking and loading needs for other modes of transport will be addressed, such as for deliveries, buses, cycles, motorcycles, car club etc
- Council car park tariffs and on-street charges to discourage long stay commuter parking; and make Park and Ride more competitive will be reviewed
- Parking in residential neighbourhoods will continue to be monitored and managed through Controlled Parking Zones (permits).

Norwich Park and Ride

12.20 Park and Ride services run from several sites around Norwich.

They are located on the edge of the built-up area and provide convenient facilities, aimed principally at people who visit the city centre and are looking for a long-stay parking option. These services now operate on a purely commercial basis.

12.21 Whilst the services continue to be successful, some sites now operate differently. For example, services from Costessey run to the hospital and university only and not the city centre. Some sites are better used than others.

12.22 A review of the operation of Park and Ride, and how it might best serve the travel needs of the city for those from outside, is a key need.



Statement of Policy

NORWICH PARK AND RIDE

The role and form of Park and Ride will be developed and reviewed to support longer distance connectivity.

Key Action

12.23 We will review the operation of Park and Ride to establish its long-term development and sustainability. This review will include consideration of:

- The location and size of sites
- Potential for serving sites by other modes including possible roles as bus and coach interchanges including tourist coaches; accommodating Cycle and Ride; interchange with scheduled bus services
- Potential for ancillary operations at the sites including electric vehicle infrastructure, decking sites to support solar panel installation, services for customers at sites and freight consolidation
- Routes, frequencies and periods of operation
- Funding.

Supporting Actions

- Park and Ride will continue to meet the needs of people who require a car to travel to Norwich and the Norwich Research Park/ University of East Anglia/ Norfolk and Norwich Hospital cluster
- The review of parking across the Norwich area, see above Parking Policy, will take account of Norwich Park and Ride
- We will explore the potential role of Norwich Park and Ride in providing intra urban travel.



Journey Times and Reliability

12.24 Journey times and journey time reliability are an important factor in how we choose to travel and perceive the performance of the transport system. Norwich has historically suffered from low average traffic speeds and the network is prone to congestion. This impacts on other users including bus passengers. Congestion can contribute to reductions in air quality and have a significant impact on journey time and unreliability. For public transport this makes consistent timetabling difficult throughout the day.

12.25 To mitigate the impact on public transport, bus priority measures have been introduced on key bus corridors. These have helped to improve the speed and reliability of services but there is more that can be done.



Statement of Policy

JOURNEY TIMES AND RELIABILITY

Journey times and reliability will be improved on the local highway network with particular emphasis to support fast and frequent bus services.

Key Action

12.26 We will ensure that journeys by bus are consistent and journey times are reduced where possible and consider the feasibility of demand management approaches such as congestion charging and workplace parking levies to facilitate traffic reduction to free up road space for essential travel.

Supporting Actions

12.27 We will also:

- Commit to managing congestion on the local highway network so that journey times are reliable, and congestion is not severe
- Commit to ensure that the ITS system (traffic signals) and policies improve bus journey times prioritise cyclists and pedestrians at key crossing points and improve journey times for all traffic on main distribution routes
- Consider removal of traffic signals at junctions to facilitate free flow, taking into account the needs of people on foot or cycles
- Align enforcement to achieve journey time reliability (for example through targeting enforcement of parking bans on main roads).



Active Travel

12.28 Active travel is transport through non-motorised means. The best-known forms are walking and cycling, though other modes include running and non-motorised scooters. Government has set out that it wants to achieve 50% of journeys by active travel and we feel that this is a more than realistic ambition for Norwich and its strategic growth areas. We have already made a great start: good progress has been made on delivery of our pedalways cycle network; e-scooter trials are underway; and the bike hire scheme is operating successfully. The Local Cycling and Walking Infrastructure Plan was the subject of consultation in early summer 2021.

Statement of Policy

ACTIVE TRAVEL

We will promote active travel by walking and cycling.

Key Action

12.29 Active travel networks will be prioritised. Active travel will be prioritised over other forms of transport on dedicated movement corridors, within the city centre and within local neighbourhoods.

Supporting Actions

- A strategic walking and cycling infrastructure network including new and improved links with appropriate pedestrian and cycle crossing facilities will be delivered
- In accordance with our new Local Transport Plan policy, we will prioritise maintenance of those parts of the network used by people walking and cycling. This will mean that the condition of



cycle lanes and pavements on the most well-used routes is at the highest standard possible

- Lower speed limits will be introduced in neighbourhoods and traffic will be reduced (see Chapter 11 Reducing the Dominance of Traffic)
- Additional cycle parking will be provided in key locations including at local and district centres
- Post pandemic transport recovery measures, such as those on Exchange Street, will be implemented on a permanent basis and other similar measures elsewhere actively considered. We will prioritise measures that support economic growth such as space for pavement licenses for restaurants and cafes
- Develop a programme of behaviour change.





www.norfolk.gov.uk/tfnstrategy



Transport for Norwich — Strategy —

Making it Happen



Chapter Thirteen - Making it Happen

Highlights of this Chapter

This section sets out what the main difference the policies set out in this chapter will make, and some of the key commitments and interventions that the strategy will bring about:

- This has a potentially major implication on governance
- There is a need to review long term governance arrangements and propose a suitable model to deliver the TfN Strategy
- Special interest sectors need to be drawn in to advise and assist with direction and delivery. These include transport operators (rail, bus and community transport), business community eg FSB, Chamber of Commerce, Norwich BID, the Norwich Airport operator, Norwich Rail Station operator, the taxi and private hire trade, Norfolk car club, motorcycles, Broads Authority navigation issues and the tourist sector.

Context

Introduction

13.1 Collaboration with stakeholders is key in order to deliver a successful TfN strategy. The strategy will affect many sectors of Norwich, such as local authorities, transport operators, tourism, businesses and education providers. Having the knowledge and expertise from these sectors involved in the development and delivery of the TfN strategy will be crucial to overcome the challenges and uncertainties such as climate change and recovery from the pandemic and to provide a safe, sustainable and efficient transport network.



Strategy and Policy

Governance and Partners

- 13.2 Transport for Norwich has a successful track record of delivering interventions across the area. This has primarily been taken forward through established governance arrangements with a joint committee that includes Norwich City Council, Broadland District Council, South Norfolk Council, Norfolk County Council and New Anglia Local Enterprise Partnership.
- 13.3 For our strategy to be successful it will need to tackle big challenges and uncertainties including carbon reduction and economic recovery from Covid 19. We will not be able to do this alone and it will require a strong and robust governance to bring forward interventions that will change the way people travel in Norwich and its strategic growth area.

Statement of Policy

GOVERNANCE AND PARTNERS

We will ensure the governance of transport activity in Norwich is improved to take forward the challenges and ambition of the Transport of Norwich strategy in partnership with the delivery agencies.

Key Actions

- 13.4 We will undertake to review the existing governance arrangements to determine an approach to working in partnership with the public and private sector to develop governance that is inclusive and appropriate for taking forward the strategy in the long term.



Supporting Actions

- Identification of partners who are key to successful delivery of the strategy
- the governance arrangements will need to consider further evidence to be gathered
- Decisions on which interventions to pursue based on evidence
- Identifying and securing funding for the successful delivery of the strategy.





www.norfolk.gov.uk/tfnstrategy



Overview

Our proposed Transport for Norwich strategy provides the focus for setting out a shared vision for the future of transport in the wider Norwich area. This consultation will be an opportunity for anyone interested in this strategy to share their views on what Norfolk County Council is putting forward and to suggest other ways in which we could shape the future of transport in the area.

This questionnaire is open to all Norfolk residents however we are seeking views particularly from:

- People who live in the wider Norwich area
- People who work in the wider Norwich area
- People who own businesses in the wider Norwich area
- People who visit the wider Norwich area for work or recreational purposes.

Once we have heard your views will consider these for our adopted strategy which will then form a basis for further research into detailed proposals, exploring the specific options that sit behind a variety of transport matters such as parking spaces, congestion charging and the possibility of workplace parking levies. Before taking steps towards delivering such measures, there would be further consultation and evidence gathering to make sure we strike the right balance before putting anything in place.

We will be consulting from 26 August – 6 October 2021. Please note that if we receive any consultation responses after this date, we cannot guarantee that we will be able to take them into account.

Personal information, confidentiality and data protection

We will treat your response in line with the Data Protection Act 2018 and the General Data Protection Regulation (GDPR). This means that Norfolk County Council will hold your personal data and only use it for the purpose for which it was collected, being this consultation. We won't identify individuals when reporting back our findings and under our record management policy we will keep this information for five years. You can read our data protection and privacy notice [here](#)

Please tick to confirm that you have read the Personal information, confidentiality and data protection statement above.
(Required)

Yes - I have read the personal information, confidentiality and data protection statement

Introduction

On this page we will ask you for some personal information, including your name. You are not required to submit this information to us. However, if you are responding on behalf of an organisation it would be helpful if you were to provide us with your name and the name of your organisation to help with our analysis.

What is your name?

Name

What is your email address?

If you enter your email address then you will automatically receive an acknowledgement email when you submit your response.

Email

Are you responding on behalf of an organisation?

Yes

No

If yes, what is the name of your organisation?

Organisation

Executive summary and vision

In this section, we are going to ask you about the general vision of our strategy. Our vision will be delivered through nine themes. The following provides a short summary of key aspects of the TfN strategy for each one, you will then be asked your thoughts on each theme.

You can read more about our vision in our executive summary, which can be read as a pdf in the box below or downloaded [here](#).

Our Vision:

Norwich and the strategic growth areas around it will become a place to thrive because shared, clean, active and accessible travel are the first choice for journeys, and people within at least the urban area can access a range of services without a car. The Vision will be delivered through nine themes. The following provides a short summary of key aspects of the TfN strategy for each one

Norwich and Norfolk

Norwich and the strategic growth area around it is the centre for a large part of the county and the wider eastern region. Good, strategic connections are vital for continued prosperity.

A zero-carbon future

Achieving net zero carbon emissions will require significant and far reaching interventions including reductions in travel demand, mode shift through an increased emphasis on active travel and supported by an accelerated switch to zero emission vehicles.

Improving the quality of our air

Clean air is important. Significant and far-reaching interventions will be needed. Likely measures will need significant further study and engagement work to consider before being able to commit to delivery of a preferred option, but the following interventions will be further considered: Clean air zone; Workplace parking place levy; Road charging / congestion charge; Vehicle bans (eg prohibiting petrol and diesel engine vehicles from the city centre).

Changing attitudes and behaviours

Local people, businesses and others who use all of our transport networks need to be engaged so that they understand and support the changes and feel confident in being able to make changes to their own travel behaviour

Supporting growth areas

The area has plans for significant growth. This needs to be in the right places, with transport networks provided, so that people can easily access facilities. Priority should be given to walking, cycling and public/ shared transport links.

Meeting local needs

The transport system needs to support the needs of everyone, being designed to take account the different needs of different people.

Reducing the dominance of traffic

In local neighbourhoods, traffic impacts will be reduced. This will be achieved through a series of interventions including low traffic neighbourhoods, school streets and reductions in speed limits, based around the principle of Healthy Streets.

Making the transport system work as one

The transport system needs to ensure efficient movement of large numbers of people. We will identify roads where general traffic is prioritised; where public transport is prioritised; and where active travel is prioritised. This reflects that streets cannot accommodate every demand at the same time, and we must prioritise. Elsewhere, streets will primarily support communities who live there, businesses or for leisure uses like meeting friends or entertainment. Parking will be reviewed to consider current parking capacity, arrangements, cost, availability and type.

Making it Happen (governance)

Good governance arrangements are vital for effective actions and delivery, supported by active engagement across a range of people and partners. Special interest sectors need to be drawn in to advise and assist with direction and delivery. Without this, we will not achieve our ambitions.

[Related information](#)

To what extent do you agree or disagree with our overall vision? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent to you agree or disagree with the content of the 'Norwich and Norfolk' theme? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the content of the 'A zero-carbon future' theme? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the content of the 'Improving the quality of our air' theme? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the content of the 'Changing attitudes and behaviours' theme? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the content of the 'Supporting growth areas' theme? (Please select only one item)

- Strongly agree
- Agree

- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent to you agree or disagree with the content of the 'Meeting local needs' theme? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent to you agree or disagree with the content of the 'Reducing the dominance of traffic' theme? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent to you agree or disagree with the content of the 'Making the transport system work as one' theme? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the content of the 'Making it Happen (governance)' theme? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

Please consider our visions and themes as a whole. Is there anything else you feel should be considered when finalising the content of the TfN strategy?

Please consider our visions and themes as a whole. Is there anything else you feel should be considered when finalising the content of the TfN strategy? Please write in the box below.

Detailed Proposals Consultation

Thank you for completing the first section of our consultation. In the next section, we will ask for your opinions on each of the themes in more detail.

You will also be given the opportunity to comment on our [Habitats Regulations Assessment \(HRA\)](#) and [Sustainability Appraisal \(SA\)](#)

The following section is expected to be completed by stakeholders and partners, and those with expert knowledge of transport policy. However, anyone is free complete the following sections if they want to.

If you feel you do not wish to take part in the more detailed section of the consultation, we are also giving you the option to end your participation now. Your answers to the previous section will be submitted regardless of which option you choose.

Would you like to continue to the more detailed section of the survey?

(Required)

- Yes, take me to the next section of the survey
- No, please take me to the end of the survey

Habitats Regulations Assessment (HRA)

Alongside our proposed Transport for Norwich Strategy, we are publishing two statutory documents – the Habitats Regulations Assessment (HRA) and the Sustainability Appraisal (SA). Please read on to find out more and answer the associated questions, if you would like to comment.

Habitats Regulations Assessment (HRA)

In order to fulfil the requirements of the ‘Conservation of Habitats and Species Regulations 2017’, the HRA process considers the potential for identified plans or projects to give rise to ‘likely significant effects’ (LSE) upon areas of nature conservation designated under the Habitats Regulations. If LSE are identified, the next stage would be to undertake an Appropriate Assessment (AA). Importantly, the HRA process considers the potential for effects as a result of the plan or project ‘alone’ as well as ‘in-combination’.

You can read the HRA in the box below or download a copy [here](#)

[Related information](#)

What are your thoughts regarding the conclusions of the HRA?

Please write below:

Sustainability Appraisal (SA)

This process is carried out during the preparation of local plans, transport plans and other spatial development strategies. The SA process aims to make a plan more sustainable and more responsive to its environmental effects by identifying a plan's significant impacts and suggesting ways of minimising and mitigating its negative effects.

You can read the SA in the box below or download a copy [here](#)
[Related information](#)

Do you agree with the outcomes of the SA assessment?
Please write below:

Do you agree that the mitigation and monitoring measures are sufficient?
Please write below:

Norwich and Norfolk

Our first theme is 'Norwich and Norfolk.' Please take the time to read the chapter dedicated to this theme, you can read the chapter in the box below or download it [here](#).

Once you have familiarised yourself with the document please answer the questions below.

- This section sets out the relationship of the Transport for Norwich strategy with the Norfolk Local Transport Plan
- It reinforces the position of Norwich and its strategic growth area as the centre for a large part of the county
- It emphasises the need to maintain good key connections for longer-distance trips

[Related information](#)

To what extent do you agree or disagree with the statement of policy, which can be found in the purple box on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the key actions of this theme, which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the supporting actions of this theme, that can be found on page 5 of this pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

Is there anything else you feel we should consider in delivering this theme?

Is there anything else you feel we should consider in delivering this theme? Please write in the box below

A zero-carbon future

Our next theme is 'A zero-carbon future.' Please take the time to read the chapter dedicated to this theme, you can read the chapter in the box below or download it [here](#).

Once you have familiarised yourself with the document please answer the questions below.

- This chapter includes commitment to achieve net zero carbon in line with Norfolk County Council's environmental policy.
- To achieve this will require significant and far-reaching interventions including reductions in travel demand, mode shift through an increased emphasis on active travel and accelerating the switch to electric vehicles
- This is likely to result in imposing measures that will limit or restrict use of the private car within the city, particularly vehicles powered by internal combustion engines. Such restrictions are also required to achieve the ambitions for clean air, as set out in the subsequent chapter

[Related information](#)

To what extent do you agree or disagree with the statement of policy for this theme, which can be found in the purple box on page 4 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the theme's key actions which can be found on page 4 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the theme's supporting actions which can be found on page 4 of the pdf? (Please select only one item)

- Strongly agree

- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

Is there anything else you feel we should consider in delivering this theme?

Is there anything else you feel we should consider in delivering this theme? Please write in the box below

Improving the quality of our air

Our next theme is 'Improving the quality of our air.' Please take the time to read the chapter dedicated to this theme, you can read the chapter in the box below or download it [here](#).

Once you have familiarised yourself with the document please answer the questions below.

This chapter includes commitment to achieve clean air

- To achieve this will require, as for reducing carbon, significant and far-reaching interventions including reductions in travel demand, mode shift through an increased emphasis on active travel and accelerating the switch to electric vehicles
- This is likely to result in imposing measures that will limit or restrict use of the private car within the city, particularly internal combustion engine vehicles. Such restrictions are also required to achieve the ambitions for clean air
- These measures will need significant further study and engagement work to consider before being able to commit to delivery of a preferred option, but the following interventions should be further considered:
 - Clean Air Zone
 - Workplace parking place levy
 - Road charging / congestion charge
 - Vehicle bans (eg prohibiting petrol and diesel engine vehicles from the city centre)
 - Promoting less polluting public transport.

[Related information](#)

To what extent do you agree or disagree with this theme's statement of policy, which can be found on page 4 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's key actions, which can be found on page 4 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the theme's supporting actions that can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

Is there anything else you feel we should consider in delivering this theme?

Is there anything else you feel we should consider in delivering this theme? Please write in the box below

Changing attitudes and behaviours

Our next theme is 'Changing attitudes and behaviours.' Please take the time to read the chapter dedicated to this theme, you can read the chapter in the box below or download it [here](#).

Once you have familiarised yourself with the document please answer the questions below.

- This chapter recognises that there needs to be significant commitment to engagement with a range of partners including businesses as well as those who use the networks. Without engagement, it will continue to be difficult to achieve the strategic vision because there will be a lack of support when schemes are taken forward to delivery
- People need to understand, be persuaded about, and support measures that are being developed.

[Related information](#)

To what extent do you agree or disagree with this theme's statement of policy listed on page 4 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with the key activities of this theme, which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's supporting actions, which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree

- Strongly disagree
- Don't know

Why do you say that? Please write below:

Is there anything else you feel we should consider in delivering this theme?

Is there anything else you feel we should consider in delivering this theme? Please write in the box below

Supporting growth areas

Our next theme is 'Supporting growth areas' Please take the time to read the chapter dedicated to this theme, you can read the chapter in the box below or download it [here](#).

Once you have familiarised yourself with the document please answer the questions below.

- This chapter sets out how the strategy supports growth areas
- The policies – whilst important – are largely a continuation of existing policy, trying to make sure that growth is located in places where people can easily reach a range of services, and that where needed connections to growth areas are improved, principally through bus and active travel networks.

Related information

To what extent do you agree or disagree with this theme's statement of policy which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's key actions that can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's supporting actions that can be found on page 6 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

Is there anything else you feel we should consider in delivering this theme?

Is there anything else you feel we should consider in delivering this theme? Please write in the box below

Meeting local needs

Our next theme is 'Meeting local needs' Please take the time to read the chapter dedicated to this theme, you can read the chapter in the box below or download it [here](#).

Once you have familiarised yourself with the document please answer the questions below.

- This chapter reinforces the importance of reducing casualties and that we need to have a transport system that supports the needs of everyone, being designed to take account the different needs of different people.

[Related information](#)

To what extent do you agree or disagree with this theme's statement of policy which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's key actions listed on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's supporting actions, listed on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

Is there anything else you feel we should consider in delivering this theme?

Is there anything else you feel we should consider in delivering this theme? Please write in the box below

Reducing the dominance of traffic

Our next theme is 'Reducing the dominance of traffic.' Please take the time to read the chapter dedicated to this theme, you can read the chapter in the box below or download it [here](#).

Once you have familiarised yourself with the document please answer the questions below.

- Enhancing the public realm though improvements to the transport system
- The major implications of this policy are likely to be that new schemes, or changes to the network, will need to take full account of the place. This could mean the design of schemes is different, or of a different standard, in certain locations. A higher cost might be involved
- It also sets out a policy around neighbourhoods. Here, the significant difference will be that traffic impacts on residential neighbourhoods will be reduced
- This will be achieved through a series of interventions including 20mph speed limits, low traffic neighbourhoods (ie, stopping through traffic using routes through residential estates; they will be restricted to main roads)

[Related information](#)

To what extent do you agree or disagree with this theme's statement of policy which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's key actions which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's supporting actions, which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

Is there anything else you feel we should consider in delivering this theme?

Is there anything else you feel we should consider in delivering this theme? Please write in the box below

Making the transport system work as one

Our next theme is 'Making the transport system work as one.' Please take the time to read the chapter dedicated to this theme, you can read the chapter in the box below or download it [here](#).

Once you have familiarised yourself with the document please answer the questions below.

- We will develop a road hierarchy setting out the key corridors that will be for general traffic, the key corridors where public transport and active travel will be prioritised and areas where streets will primarily support communities who live there, or for leisure uses like meeting friends or entertainment
- On corridors prioritised for movement, we will identify ones where general traffic is prioritised; ones where public transport is prioritised; and ones where active travel is prioritised. This reflects that streets cannot accommodate effectively every demand, and we must prioritise
- We will also introduce a Travel Mode Hierarchy. This means that we will consider the needs of all users, thinking first about people who use sustainable transport modes • These proposals will put the focus for capacity improvement towards the most number of people, rather than numbers of vehicles. This supports in particular prioritising bus travel rather than car traffic
- Parking will be reviewed to consider current parking capacity, arrangements, cost, availability and type

[Related information](#)

To what extent do you agree or disagree with the theme's statement of policy, which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's key activities which can be found on page 5 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's supporting activities, which can be found on page 6 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

Is there anything else you feel we should consider in delivering this theme?

Is there anything else you feel we should consider in delivering this theme? Please write in the box below

Making it Happen (governance)

Our next theme is 'Making it happen' Please take the time to read the chapter dedicated to this theme, you can read the chapter in the box below or download it [here](#).

Once you have familiarised yourself with the document please answer the questions below.

- This has a potentially major implication on governance
- There is a need to review long term governance arrangements and propose a suitable model to deliver the TfN Strategy
- Special interest sectors need to be drawn in to advise and assist with direction and delivery. These include transport operators (rail, bus and community transport), business community eg FSB, Chamber of Commerce, Norwich BID, the Norwich Airport operator, Norwich Rail Station operator, the taxi and private hire trade, Norfolk car club, motorcycles, Broads Authority navigation issues and the tourist sector

[Related information](#)

To what extent do you agree or disagree with this theme's statement of policy, which can be found on page 3 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's key actions which can be found on page 3 of the pdf? (Please select only one item)

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

To what extent do you agree or disagree with this theme's supporting actions which can be found on page 4 of the pdf? (Please select only one item)

- Strongly agree
- Agree

- Neither agree or disagree
- Disagree
- Strongly disagree
- Don't know

Why do you say that? Please write below:

Is there anything else you feel we should consider in delivering this theme?

Is there anything else you feel we should consider in delivering this theme? Please write in the box below

Lastly, is there anything else you feel should be considered when finalising the overall content of the TfN strategy?

Is there anything else you feel should be considered when finalising the overall content of the TfN strategy? Please write in the box below

About You

Here are some questions about you. We will only use the information you give us to analyse the findings. We will use the answers to these questions to help understand how different groups of people feel about our proposals.

Although it helps us a great deal if you do answer these questions, they are optional, so please only fill in the questions that you want to.

We will combine your responses with those of many others and summarise these in a report to further protect your anonymity. We will only use the data we receive to help us shape our proposals and will not share it with anyone else.

Are you...?

- Male
- Female
- Prefer to self-describe (please specify below)
- Prefer not to say

If you prefer to self-describe please specify here:

Are you responding as...? (Please select all that apply)

- A local resident
- A local business owner
- Employed locally
- A visitor to the area
- A commuter to the area
- Not local but interested in the scheme
- A taxi/private hire vehicle driver

Other, please specify

How old are you?

- 0-15
- 16-29
- 30-44
- 45-64
- 65-84
- 85+

Do you have any long-term illness, disability or health problem that limits your daily activities or the work you can do?

- Yes
- No
- Prefer not to say

How would you describe your ethnic background? Please select one only

- White British
- White Irish
- White other
- Mixed
- Asian or Asian British

- Black or Black British
- Chinese
- Other ethnic background - please describe below

Ethnicity 2

What is the first part of your postcode? (e.g. NR4)

Please write your answer here:

How do you primarily travel in the Greater Norwich area? (Please select only one item)

- Pedestrian
- Cyclist
- Motorcyclist
- Bus passenger
- Motorist
- Other, please specify

Almost done...

You are about to submit your response. By clicking 'Submit Response' you give us permission to analyse and include your response in our results. After you click 'Submit Response', you will no longer be able to go back and change any of your answers.

If you provide an email address you will be sent a receipt and a link to a PDF copy of your response.

Email address

Infrastructure and Development Select Committee

Item No. 9.

Report title: Performance of Key Highways Contracts

Date of meeting: 15 September 2021

Responsible Cllr Martin Wilby (Cabinet Member for Highways, Infrastructure & Transport)

Responsible Director: Tom McCabe (Executive Director Community and Environmental Services)

Introduction from Cabinet Member

There are a number of contracts designed to enable the delivery of the Highways service. It is vital that these contracts are proactively managed, and performance is scrutinised to ensure the best value is being achieved and contractors are being held to account.

Through these contracts, Norfolk has been able to rise to the challenge of delivering additional works as and when funding opportunities become available, including the most recent challenges of the £22.2m additional highways maintenance (pothole) funding in 2020 and the Emergency Active Travel funding, both from the Department for Transport.

This report identifies that key highways contracts are all performing well, and existing robust contract management arrangements will ensure this level of performance is maintained. To illustrate this fact, the most recent 2020 National Highways & Transportation survey results have ranked Norfolk first within our peer group for overall satisfaction, for the second year running.

In summary, the key contracts are all performing well and offer good value to the residents and businesses of Norfolk.

Executive Summary

Contracts that Norfolk County Council (NCC) have awarded are regularly reviewed and monitored to ensure performance targets are achieved.

Over the length of the contracts identified in this report, the Council has seen benefits in terms of innovation to the value of £2.17m. This has reduced scheme costs allowing more schemes to be delivered.

Each of the contractors have achieved additional years added to their respective terms through meeting the required performance targets.

Actions required

- 1. The Select Committee is invited to comment on key highways contract performance and arrangements.**

1. Background and Purpose

- 1.1. The following report summarises the active contracts the Council's Highways Service has procured in terms of services provided, performance and value for money. The Highway Service Contracts reviewed in this report are:
 - Tarmac;
 - Norse Highways;
 - WSP;
 - Dynniq;
 - Amey;
 - Eastern Highways Alliance (EHA).
- 1.2. This last year has been delivered under pandemic conditions where all of our contractors have adapted the ways they have operated under Covid safe arrangements. The performance achieved is strong, especially with the challenges and additional restrictions faced.
- 1.3. **Tarmac (previously Lafarge Tarmac)**
 - 1.3.1 The contract became operational in April 2014 and has an average turnover of £40m per year. This can vary depending on the actual level of Government allocations received. Lafarge Tarmac were rebranded as Tarmac in July 2015.
 - 1.3.2. The Council uses Tarmac for construction and routine maintenance works on the highway. They have a robust network of sub-contractors that allow the Council to access specialist services, as well as utilise the expertise of Tarmac's in-house teams. Tarmac undertake the following works for the Council:
 - Grass cutting (both rural and urban);
 - Weed treatment;
 - Gully clearing and drainage investigation surveys;
 - Topographical surveys;
 - Surface Dressing;
 - Bridge maintenance;
 - Bridge schemes;
 - Vehicle Restraint System (VRS) works;
 - Patching (carriageway and footway);
 - Delivery of large schemes (e.g. footway, drainage, resurfacing, etc.);
 - Major schemes (e.g. Hempnall Roundabout etc.)

- Externally funded works (S278, Developer funded works and District Council works etc.);
- Road markings.

1.3.3. Performance meetings are held monthly to:

- monitor task order progress against the agreed programme;
- monitor budgets;
- review performance of the service;
- review available resources;
- discuss health & safety issues;
- review our collaborative approach to deliver the highway service;
- identify value engineering options as new industry practices and innovation emerge.

1.4. **Norse Highways**

1.4.1. The Council's internal Highway Works team was transferred to a new business within Norse (Norse Highways) on 1 October 2019 as part of the Commercialisation of Highways Services programme. Key service areas that are now delivered by Norse Highways include:

- Highway works (routine maintenance e.g. pothole repairs, drainage - works, sign repairs & winter services);
- Highways Laboratory;
- Highways Fleet Services (including Norfolk Fire & Rescue Service fleet);
- Fast Lane Training Services.

1.4.2. This contract has been operating since October 2019 and has an average turnover of £16m per year.

1.4.3. Norse also have a robust network of sub-contractors that allow the Council to access expert companies, as well as utilise the skills of Norse Highways in-house teams. Norse Highways undertake the following works:

- Verge & hedge maintenance;
- Road signs;
- Structures maintenance;
- Pothole repairs;
- Emergency works (e.g. out of ours service delivery);
- Delivery of allocated capital schemes (e.g. footway, drainage);
- Public Right of Way (PRoW) maintenance;
- Patching (carriageway and footway);
- Footway repairs;
- Road stud replacements;
- Drainage works;
- Parish partnership schemes;
- Local Member budget works;
- Small private works (e.g. private driveway accesses);

- Winter Service.

- 1.4.4. Performance meetings are held monthly to:
- monitor task order progress against the agreed programme;
 - monitor budget spend;
 - review performance of the service;
 - review available resources;
 - discuss health and safety issues;
 - review our collaborative approach to delivering the service;
 - identify value engineering options as new industry practices and innovation emerge;
 - discuss progress made on areas of the service detailed in 1.4.3 above.

1.5. **WSP (previously Mouchel)**

- 1.5.1. This contract was awarded to Mouchel in October 2013 to commence operations from April 2014 with an original turnover of £3m per year. This has now increased to £9m per year which reflects the range of schemes delivered and increases in funding from the Department for Transport. The Mouchel contract was novated to WSP in July 2017 due to the acquisition of Mouchel by WSP in October 2016.

- 1.5.2. The Council has a contract with WSP for their professional services in Highway Design. WSP employees work collaboratively with our in-house design team in order to deliver the capital programme of works, with an annual turnover of up to £9m (depending on additional Government funding). WSP have experienced staff across the world in numerous specialist fields. We use WSP staff across the UK to help deliver Major Projects (such as the 3rd River Crossing and the Norwich Western Link).

- 1.5.3. WSP staff (currently 60 FTEs) are embedded in the highway design delivery teams. Weekly review meetings ensure the WSP design resource is managed efficiently in order to deliver highway scheme design.

- 1.5.4. An officer contract review meeting is held on a quarterly basis to:
- review key issues;
 - monitor progress against the agreed programme;
 - review performance of the service;
 - discuss innovations and any future saving opportunities;
 - review available resources.

1.6. **Dynniq (previously Imtech)**

- 1.6.1. This contract was originally awarded to Imtech and has been operating since April 2014 with an average turnover is £1.2m per year. Imtech were rebranded as Dynniq in June 2016.

- 1.6.2. Dynniq are contracted to maintain our network of permanent traffic signals across the county. Dynniq work closely with the Electrical Services Team who manage the county's permanent traffic signals and

Intelligent Transport Systems (ITS).

1.6.3. Dynniq undertake the following works for the Council:

- Maintenance of existing traffic signal assets;
- Installation of new traffic signal assets;
- Key involvement in schemes with controlled crossings.

1.6.4. Monthly service delivery meetings are held to discuss:

- Contract
 - o General issues;
 - o Schedule of rate issues;
 - o Procurement issues;
- Health & Safety
 - o Incidents / Accidents;
 - o Site specific risks;
- Performance Management
 - o KPI Review;
- Innovation & Efficiencies
- Routine Works Programme
 - o Maintenance issues;
- Installation Works Programme
 - o Installation issues.

1.6.5. Contract review meetings are held quarterly to:

- review key issues (installation, maintenance, communication);
- review health and safety incidents;
- review performance of the service;
- discuss innovations and any efficiencies;
- review available resources.

1.7. **Amey “Norfolk Streetlighting Private Finance Initiative (PFI)”**

1.7.1. This PFI started in February 2008 and has an average turnover of £7.8m per year.

1.7.2. The PFI provides that Amey will maintain all the Council owned streetlights, illuminated signs and illuminated bollards. The contract transfers all risks associated with these assets to Amey, throughout the lifetime of the contract. The contract has two main periods of investment to bring aging assets up to relevant standards (agreed at the beginning of the contract) and allows for new assets to be accrued into the scope of the contract (providing they also meet the relevant standards). Amey carry out street lighting design and installation work for all highway improvement schemes.

1.7.3. Amey undertake the following works for the Council:

- Emergency response following RTA (Road Traffic Accident) damage;
- Replacement programme of street lighting assets;
- Liaison with contractors for VAS (Vehicle Activated Sign), streetlighting, etc.;
- Moving electrical supplies to enable safe working on schemes;
- Maintenance of the asset.

1.7.4. A monthly officer meeting is held to discuss and agree the Monthly Service Performance Report (MSPR). The MSPR sets out the Unitary Charge (the fee Norfolk County Council pays for the service provided by the PFI) and notifies the client (NCC) of all deductions applicable under the terms of the contract. The meeting also covers:

- review key issues;
- monitor progress of the investment programmes; &
- review performance of the service, working with the contractor to improve delivery where required.

1.8. **Eastern Highway Alliance**

1.8.1. The aim of the Eastern Highways Alliance (EHA) is to support the EHA Members (listed in 1.8.2) to achieve better quality highway, public realm and infrastructure schemes at lower cost by combining and sharing resources.

The Alliance establishes several pre-qualified contractors that have already been assessed for their suitability to deliver highway projects. Highway schemes are tendered through the alliance framework, but it is quicker than an open tender process. This provides greater resilience for Norfolk in addition to our existing arrangements with Tarmac and Norse Highways.

The Eastern Highways Framework Contract operated from April 2016 to March 2020. The new 4-year Framework commenced in October 2020. The Council currently has several large schemes on the programme for completion via the EHA Framework over the coming years.

1.8.2. Current EHA Members include the following Local Authorities:

- Bedford Borough Council;
- Cambridgeshire County Council;
- Central Bedfordshire Council;
- Essex County Council;
- Hertfordshire County Council;
- Luton Borough Council;
- Norfolk County Council;
- Peterborough City Council;

- Suffolk County Council;
- Southend On Sea Borough Council.

1.8.3. The strategic objectives for this Framework are:

- To provide an efficient and effective means of procuring highways and other construction works for local authorities in the Eastern region;
- To use collaborative procurement to provide cost-effective delivery options to the Eastern Highways Alliance Members;
- To meet the requirements of current and potential future Alliance members for project delivery specifically in terms of cost, quality, and timescales;
- To promote positive and professional relationships between Alliance members and the Framework Suppliers;
- To provide additional capacity and positive challenge to existing delivery options;
- To drive future scheme delivery in accordance with HMEP principles, specifically:
 - o Continuous improvement;
 - o Cost savings through increased efficiency and innovation;
 - o Greater engagement of the supply chain.

1.8.4. **EHA Governance**

- The Executive Board meets every three months;
- The Framework Steering Group (FSG) meets quarterly and reports to the Board;
- The Framework User Group (FUG) meets bi-monthly and reports to the FSG.

2. **Contract Performance Summaries**

2.1. The contracts, which started their first year in April 2014, were developed following a strategic review of the Highways Service. The contracts include specific requirements around performance targets, which was agreed with Members as part of the fundamental criteria for the new contracts. The performance management regime within the contracts specifies key targets that each supplier has to achieve and is defined in the Contract Service Information.

2.1.1. Annex 4 of these contracts detail the Annual Strategic Score banding to be used for performance measures.

Annual Strategic Score	Banding	Result
Less than 3	C	Service period reduced
At least 3, but less than 4	B	Service period unchanged
At least 4	A	Service period extended

For an additional year to be granted for good performance, an Annual Strategic Score of at least 4 has been achieved (not applied in year 1 of each contract). To continue to incentivise performance, this remains the case despite the contracts being extended to 2026. Therefore, if there was a deterioration in performance, the contract term can still be reduced.

2.1.2. An overview of the annual performance of each contract can be seen in section 2.2-2.6 below.

2.2. Tarmac Performance Summary

2.2.1. Tarmac's performance is summarised in the table below.:

Year of the contract	Service Delivery (x/5.0)	Public Satisfaction (x/5.0)	Innovation score (x/5.0)	Annual Strategic Score (x/5.0)
Year 1 (2014-15)	3.8	4.0	3.0	3.6
Year 2 (2015-16)	4.9	4.0	1.0	4.2
Year 3 (2016-17)	4.9	4.0	3.0	4.3
Year 4 (2017-18)	4.9	3.0	1.0	4.2
Year 5 (2018-19)	4.4	4.0	5.0	4.5
Year 6 (2019-20)	4.5	4.0	5.0	4.4
Year 7 (2020-21)	4.5	4.0	5.0	4.5

2.2.2. Over the duration of the contract, Tarmac's performance has been consistent with all but the first year achieving over 4.0. Based on their consistent performance, the contract has been extended to 12 years (until 2026), with agreed minimum turnover and savings targets.

2.2.3. Service Delivery, which includes the work activities detailed in point 1.3.2, scored highly at 4.6 over the length of the contract despite the year-on-year increase in targets defined within the contract. This has remained consistently high for year 7

2.2.4. Tarmac has a strong focus on customer service. Tarmac issues several customer satisfaction questionnaires each month which relate to highway scheme delivery. On average the response rate is typically 20%. The service areas they ask for opinions on are as follows:

Service Area	Average Score over 6 years (x/10.0)	Average Score over 7 years (x/10.0)
Information received in timely manner	8.8	9.3
Quality matched expectations	8.3	9.0
Access to frontages	8.7	9.3
Site tidiness	8.9	9.4
Workforce helpfulness & courtesy	9.0	9.6

The figures show that public perception has improved over the last 12

months (year 7) as the average score achieved has increased in all areas.

Although the response level is satisfactory, submissions must be returned by post. Tarmac have trialled use of QR codes to allow online submissions to be made. The uptake of this has been minimal as it relies on the public walking past the sites. This trial will continue over the coming year. It is hoped that this will encourage a greater number of survey responses.

2.2.5. Tarmac has a very strong health and safety record which is measured through Accident Incident Rate (AIR) and audit scores. Tarmac's excellent safety performance continues with 1.2 million hours worked without any time lost to injury. In addition, there have been no Reports of Injuries, Diseases and Dangerous Occurrences (RIDDOR).

2.2.6. Innovation has been scored a 5.0 for the last 3 years of the contract with Tarmac achieving 175% of year 7's original target. To date Tarmac have identified innovations totalling £1,280,299 (listed in 3.2.2 below). This reduction in cost enables more highway work to be delivered.

Innovation has been achieved by:

- Identifying ways in which a task can be made more efficient and more cost effective (i.e. Value Engineering);
- Close collaboration between NCC and Tarmac to identify alternative working practices or materials.

2.2.7. For year 7, Tarmac have scored well in both collaboration and prompt payment to sub-contractors, scoring 4.0 and 4.2 respectively. This is above the contract-to-date average scores of 3.8 and 3.5 in the respective areas.

2.3. **Norse Highway Performance Summary**

2.3.1. The commercialisation of highway works has been operational since 1 October 2019. Over this time, the following performance measures have been achieved. The performance is generally very high. The priority C performance is above target, and this compares very favourably with pre-Norse Highways (April – September) figures, where the priority C defect response time was 70% completed on time.

2.3.2.

Priority	KPI target	Defects repaired	Completed on-time	Completed late	Completed on-time (Year 1)	Completed on-time (Year 0.5)
A	95%	1,451	1,449	2	99.9%	99.9%
B	95%	4,168	4,050	118	97.2%	96.6%
C	85%	8,240	7,712	528	93.6%	90.3%
D	85%	10,158	9,918	240	97.6%	98.7%

The full year 1 scores are also higher than the initial 6-month period, apart from the priority D works (drop from 98.7%). All works are completed within the targets set out in the contract.

2.3.3. In year 1, 126 Fixed Penalty Notice (FPN's) have been issued to Norse for failure to comply with the stipulations of the permits granted under the New Roads and Streetworks Act. The target of 95% has been surpassed for year 1 with a score of 96.06%.

2.3.4. In 2020/21 there were 95.4 full route equivalent winter gritting actions undertaken using 23,301 tonnes of salt (more than twice last year's usage). Norse Highways completed 91.3% of winter gritting routes within the target 3-hour window, the target being 80%. The route length of some gritting routes makes meeting this KPI particularly challenging in some locations.

2.4. WSP Performance Summary

2.4.1 Over the duration of the contract, WSP's performance has been consistently high. For this reason, the contract has been extended to 12 years (until 2026), with agreed minimum turnover and savings targets. This will bring annual savings of between £30,000 & £40,000 dependant on actual turnover.

2.4.2 The table below summarises the performance scores that WSP have achieved over the length of the contract:

Year of the contract	Service Delivery (x/5.0)	Collaborative Working (x/5.0)	Innovation score (x/5.0)	Annual Strategic Score (x/5.0)
Year 1 (2014-15)	N/A	N/A	N/A	N/A
Year 2 (2015-16)	4.4	4.0	4.0	4.2
Year 3 (2016-17)	5.0	4.0	3.0	4.4
Year 4 (2017-18)	4.6	4.0	1.0	3.8
Year 5 (2018-19)	4.8	4.0	5.0	4.5
Year 6 (2019-20)	4.8	4.0	1.0	4.1
Year 7 (2020-21)	5.0	4.0	5.0	4.6

2.4.3. WSPs annual strategic score of 4.6 for year 7 is within banding A. WSP has achieved strong scores over the duration of the contract, achieving

over a 4.0 in all years but one (2017/18).

- 2.4.4. Service Delivery scored on average 4.75 over the length of the contract despite the year-on-year increase in targets defined within the contract.
- 2.4.5. Innovation scores have fluctuated over the length of the contract. The average score has been 3.2. Some years have been challenging, whereas some years targets have been exceeded by 165%. Innovation is analysed further in point 3.4 below. Year 7 has seen strong performance, with WSP exceeding their innovation target by over 300%.
- 2.4.6. WSP have achieved strong scores in collaborative working, scoring an average of 4.0. This is achieved by undertaking a 360° appraisal of key staff members across WSP by senior managers from NCC. Leadership & contract commitments has remained consistent for the last 3 years scoring 4.0, bringing the average score for the full contract duration to 3.8.

2.5. Dynniq Performance Summary

- 2.5.1. Over the duration of the contract, Dynniq’s performance has been consistently above the targets set, apart from the first year. For this reason, the contract has been extended to 12 years (until 2026), with agreed minimum turnover and annual savings targets of £12,000.
- 2.5.2. The table below summarises the scores Dynniq have achieved over the duration of the contract:

Year of the contract	Service Delivery (x /5.0)	Public Satisfaction (x /5.0)	Innovation score (x /5.0)	Annual Strategic Score (x /5.0)
Year 1 (2014-15)	4.22	1.00	1.00	3.3
Year 2 (2015-16)	4.18	3.00	3.00	4.1
Year 3 (2016-17)	4.30	3.00	1.00	4.0
Year 4 (2017-18)	4.80	N/A	1.00	4.4
Year 5 (2018-19)	4.30	N/A	5.00	4.5
Year 6 (2019-20)	4.30	N/A	5.00	4.6
Year 7 (2020-21)	4.30	N/A	5.00	4.6

- 2.5.3. Dynniq’s annual strategic score of 4.6 for year 7 is within banding A. The annual strategic score achieved since the start of the contract have been above 4.0 apart from year 1 (2014/15).
- 2.5.4. Service Delivery scored highly at 4.4 over the length of the contract representing a very good level of performance against contract measures despite the year-on-year increase in targets defined within the contract.
- 2.5.5. Public satisfaction was removed from the contract measures in 2017/18 because surveys proved problematic and were only relevant

on a small number of schemes where Dynniq were Principal Contractor. Norse Highways is now the Principal Contractor, so this measure was no longer required.

2.5.6. Innovation has been scored 5.0 for the past 3 years. The efficiency savings achieved in 2020/21 was over £31,800 which is 318% of the original target.

2.5.7. Health and Safety has been scored a maximum 5.0 over the last 7 years of the contract which is excellent performance.

2.6. **Amey Performance Summary**

2.6.1. Amey provide the street lighting service through a PFI, therefore the performance monitoring is not carried out in the same way as for other contracts.

2.6.2. The contract is structured around several performance standards and Amey self-report on their performance. Deductions for any failures are levied against the monthly Unitary Charge, which incentivises the contractor to perform well.

2.6.3. Key Performance Standards within the contract are:

Performance Standard 2 (PS2) - Lighting Performance and Planned Maintenance

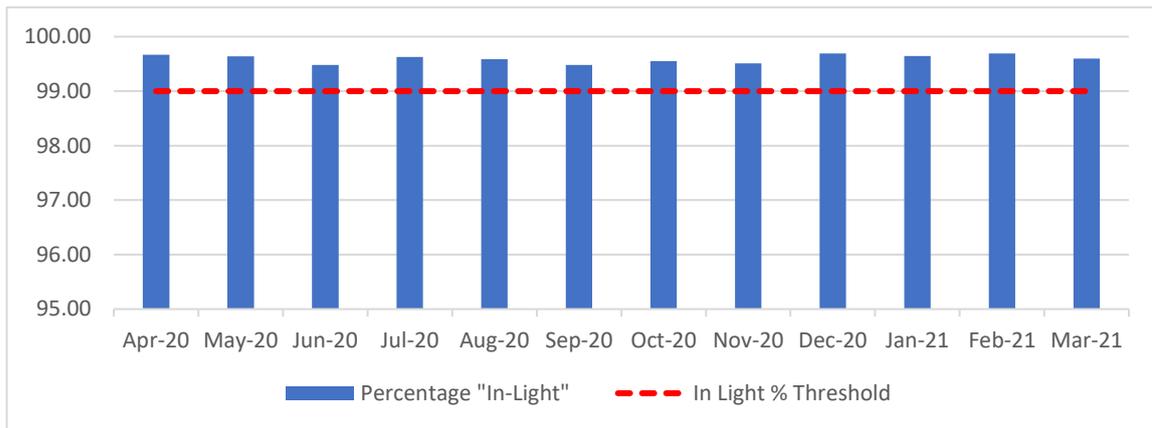
This requires that no less than 99% of all NCC streetlights are in light at any time.

Performance Standard 3 (PS3) - Operational Responsiveness and Reactive Maintenance

This gives timescales for which all reactive maintenance must be rectified. There are different requirements for different kinds of faults. For example; Emergency faults (such as exposed live wires or an RTC) must be attended within 2 hours whereas a fault such as a lamp replacement must be attended to within 5 working days.

2.6.4. The 2020 National Highways & Transportation (NHT) survey contained in Appendix A, indicated 59% customer satisfaction with the street lighting service, this was a reduction of 5% from the previous year and is 5% below the national average. It should be noted that streetlighting in Norfolk can be the responsibility of many different parties, including County, District, Borough, Town and Parish Councils. The overall Key Benchmark Indicator (KBI25 – public satisfaction with streetlighting in the county) score of 59% is the fifth highest KBI of all our KBI results in the NHT survey.

2.6.5. Percentage units in light 20-21



2.6.6. Amey have ensured that streetlights remain operational above the required 99% target since the beginning of the contract. Performance dipped below this target in the first year of the contract on 4 occasions but subsequently has remained above 99%.

2.6.7. Below are some highlight figures from the start of the PFI in 2008 to date:

- Health & Safety – Amey are currently at 2,318 days without any reportable injuries, diseases or dangerous occurrences/near misses (RIDDOR) and an Employee Injury rate of nil for 2020/21;
- Emergency Attendance – Amey have attended 7,691 emergency call outs since the start of the contract;
- Out of hours attendance – Amey have attended over 28,000 out-of-hours faults;
- Non-routine faults – Amey have attended over 154,000 non-routine faults with an average repair time of 3.24 days;
- Replacement Units – Amey have replaced over 3,600 units due to knockdowns, damage or age;
- Improved environmental performance by reducing energy consumption by initially upgrading to SON, then LED lanterns. Cumulative savings of 54.7m kWh and over 17,000 tonnes of CO₂ since 2008 have been achieved, along with financial savings £6.6m. This is a considerable environmental benefit and contributes significantly to the Council's Environmental Action Plan.

2.6.8. The table below (point 2.6.9) shows a breakdown of the emissions and energy savings achieved each year. All conversion factors are now based on a single average factor for a particular year. Prior to 2013, the carbon conversion factors were based off a '5-year grid rolling average' which was much less accurate. These conversion factors are the reason for the difference between the total emissions savings using updated factors (shaded green), and the total emissions using historical conversion factors.

2.6.9.

Year	Energy savings	Total Energy savings - kWh	Carbon conversion factor for this year	Carbon conversion factor used in previous calculations	Total Emissions savings – in Tonnes (old factors)	Total Emissions savings – in Tonnes (updated factors)	Reduced maintenance costs	% kWh saving per year vs 2011/12 baseline	Comments
2008/09	£84,369	1,053,732	0.49381	0.54093	570	520	£0	4.20%	Core Investment Period (CIP) starts- replacing SOX with SON lanterns.
2009/10	£83,773	1,248,294	0.48531	0.54074	675	606	£0	4.98%	
2010/11	£100,303	1,701,746	0.45205	0.54121	921	769	£0	6.79%	
2011/12	£112,721	1,694,745	0.46002	0.54108	917	780	£0	6.76%	
2012/13	£266,292	3,603,175	0.44548	0.54091	1,949	1605	£4,533	14.37%	CIP Completion. Start of first phase LED rollout
2013/14	£377,619	4,598,612	0.49426	0.54103	2,488	2273	£20,281	18.35%	
2014/15	£422,618	4,829,591	0.46219	0.54104	2,613	2232	£43,597	19.27%	
2015/16	£444,608	4,959,576	0.41205	0.54097	2,683	2044	£61,667	19.79%	
2016/17	£517,281	5,294,827	0.35156	0.54109	2,865	1861	£88,443	21.12%	Start of second phase LED rollout
2017/18	£654,228	5,983,949	0.28307	0.54095	3,237	1694	£125,709	23.87%	
2018/19	£812,562	6,168,868	0.25560	0.62070	3,829	1577	£132,516	24.61%	Start of third phase LED rollout. Use of UK made lanterns reduce transport/ CO2 costs
2019/20	£938,418	5,967,821	0.23314	0.73762	4,402	1391	£140,238	23.81%	
Total	£5,471,023	47,104,937			27,149	17,352	£616,985		

3. Value for money

3.1. Ensuring value for money in the contracts is a key driver for the Council.

3.1.1. Before a contract is agreed, procurement exercises are undertaken where contractors take part in a competitive tender process. They provide their best price, quality and level of service that they can offer to the Council. In each of the contracts identified in this report, the Council has compared all information provided by other suppliers. Contractors that can deliver the required services to meet our standards, and at the best price, were awarded the contract.

3.1.2. In order to guarantee that the level of service provided by the contractors matches the level of service identified within the contract, Key Performance Indicators, as described above, are monitored. Monitoring of the service means the Council can award more contract years for high levels of service delivered. As required, the Council can also deduct income from the contractor if performance falls below the required level. Any deductions are reviewed at the monthly KPI meetings where quantum is confirmed.

3.1.3. One of the main ways in which our contractors demonstrate value for money is through innovation. These innovations need to result in a saving or an improvement in the service levels. Below is a summary of each contractors agreed and approved innovations.

3.2. Tarmac

3.2.1 As mentioned in 2.2.6 above, Tarmac have scored 5.00 for the last 3 years of the contract, achieving 175% of year 7's original target.

3.2.2. The table below summarises the innovation values achieved over the term of the contract.

Target Innovation	Actual innovation	Percentage of target achieved
£1,197,284	£1,280,299	106.93%

	Innovation	Agreed value
1	Value Engineering	£619,928
2	Savings proposal (from 2019-20)	£280,856
3	Patching efficiency	£124,510
4	Weeds efficiency	£67,000
5	Gully innovation	£54,305
6	Grass cutting efficiencies	£27,971
7	Mayrise/Realtime efficiencies	£23,447
8	Various efficiencies	£82,282
	Total	£1,280,299

3.3 Norse Highways

3.3.1 As part of the approved business plan, Norse Highways are required to deliver savings to the Council. This was set out in the Norse proposal document, approved in January 2019. This document profiled the five-year savings potential of the new arrangements, defined as Initial Savings Efficiency Concepts (ISECs).

- 3.3.2. A number of efficiencies have been made, such as:
- Development of robust supplier arrangements with Spray Injection Contractors meaning better rates than market, but also establishing a more efficient automated delivery mechanism than some in-house delivery options;
 - Proposed and implemented a more efficient road patching and pothole repair methodology;
 - Worked with service providers and negotiated reduced rates by batching activities and paid some through tendered rates rather than the traditional hourly rate model.

Combined ISECs value for 2019/2020 and 2020/2021 of £37,000 being realised. This value must also be read in conjunction with the added value figures below.

3.3.3. Since the transfer to Norse, a number of costs have been absorbed which would have otherwise been incurred by Norfolk County Council. The following is a high-level summary of these costs absorbed:

Added Value	Sum of £
FY1920	£80,737
Fleet	£46,570
Overheads	£33,500
Private	£667
FY2021	£448,033
Fleet	£90,056
FLTS	£1,000
Operations	£278,256
Overheads	£68,843
Private	£9,878
Combined Total FY 19/20 and 20/21	£528,770

Examples of absorbed costs include:

- Fleet maintenance contracts for NCC vehicles;
- Tablets for TM Connect - 70 Tablets and charging cables;
- Covid-19 distancing measures and winter resource protection - Van Hire & Fuel.

3.3.4. The net total annual (and ongoing) saving of over £500,000 is anticipated to be realised after 3 years of operation.

3.3.5. In terms of innovation, the Council and Norse Highways have worked collaboratively to introduce a saving initiative concerning road patching. This initiative relates to lower classification roads and will allow the contractor to fill potholes using prescribed methods and materials in a more efficient way. This should result in reduced numbers of visits by the contractor to repair defects rather than multiple visits to deliver different specified treatments.

3.4 **WSP**

3.4.1. As mentioned in 2.4.4 above, WSP innovation scores have fluctuated over the length of the contract. The table below shows the innovation targets and the amount actually achieved by WSP. Typically, the targets equate to 1.00% of the turnover for the year.

3.4.2. The table below summarises the innovation values achieved over the term of the contract to date.

Target Innovation Saving	Actual innovation Saving	Percentage of target achieved
£316,657	£505,967	159.78%

	Innovation	Agreed value
1	Difference in external / internal rates	£199,359
2	Early Contractor Involvement savings	£68,752
3	Dereham Road, Costessey Temporary footway matting	£41,292
4	Vendor management on-costs - Commercial Advice	£43,055
5	Extension to contract for 2020 Turnover	£30,000
6	Pool cars for site inspections	£36,225
7	Principle Bridge Inspections (10%)	£17,318
8	Volunteer Day	£9,598
9	Postwick sensors work for lab	£7,289
10	Use of WSP Integrated Complimentary Resource Centre (India)	£6,593
11	Great Yarmouth Third River Crossing Efficiency Saving - High level review of costs and benefits	£3,989
12	Various	£42,497
	Total	£505,967

3.5. **Dynniq**

3.5.1. Innovation has been scored 5.0 for the past 3 years. The efficiency savings achieved in 2020/21 was over £31,800 which is 318% of the original target. In 2019/20 Dynniq achieved 147% of their target for the year.

3.5.2. The table below summarises the innovation values achieved over the term of the contract to date.

Target Innovation Saving	Actual innovation Saving	Percentage of target achieved
£157,420	£385,784	245.07%

Examples of the types of savings achieved include:

- Dynniq introduced the Mobi RMS unit that monitors the traffic light faults at a fraction of the cost of the old system. New system faults are texted from the signal controller to the control room. This has allowed accurate and fast fault reporting across the county (saving of £284,494 since 2016);

	Innovation	Agreed value
1	Mobi RMS Control	£284,494
2	Fibre Optic Lamps	£25,421
3	Slot Cutting for traffic signals	£18,400
4	Maintenance savings	£12,000
5	Replacement works	£11,345
6	Local traffic signal control (Mesh)	£12,932
7	Traffic light controller	£8,903
8	Various	£12,289
	Total	£385,784

3.6

Amey

3.6.1.

Ensuring value for money for contract changes, such as LED upgrade programmes, has been more difficult, as all PFI projects are structured differently based on the time they were signed. The Department for Transport does not hold data to enable benchmarking.

3.6.2.

Amey receive a share of any energy costs saved through innovations introduced by them and carried out at their cost. Since the advent of LED technology, Amey have elected to replace sign and bollard lights with LED as they come up for planned or reactive maintenance. They have also de-illuminated where regulations no longer require the signs and bollards to be illuminated. The introduction of LED technology has generated a total saving of £6.6m through reduced energy consumption (54.7m kWh) and reduction of over 17,000 tonnes of CO2 since 2008.

4. Financial Implications

4.1.

The Council monitors the performance of key contractors regarding value for money, innovation and savings via Key Performance Indicators (KPI's). The KPI's determine whether the Council can award additional contract years to the maximum contract term. Such an award motivates the contractors to perform well.

- 4.2 As detailed above, the £2.17m of savings which have been achieved through innovation, reduces scheme costs and allows more schemes to be delivered within the highways budget.

5. Resource Implications

5.1. Staff:

No implications to note.

5.2. Property:

No implications to note.

5.3. IT:

No implications to note.

6. Other Implications

6.1. Legal Implications

No implications to note.

6.2. Human Rights implications

No implications to note.

6.3. Equality Impact Assessment (EqIA)

No implications to note.

6.4. Data Protection Impact Assessments (DPIA)

No implications to note.

6.5. Health and Safety implications

No implications to note.

6.6. Sustainability implications

The introduction of LED technology has generated a total saving of £6.6m through reduced energy consumption (54.7m kWh) and reduction of over 17,000 tonnes of CO2 since 2008.

7. Actions required

- 7.1. **1. The Select Committee is invited to comment on key contract performance and arrangements.**

8. Background Papers

8.1. [Extension to Tarmac Trading Ltd Contract](#)

8.2. [Highway Asset Performance Report](#)

8.3. [Extension to highways contracts with WSP UK Ltd & Dynniq UK Ltd](#)

Officer Contact

If you have any questions about matters contained in this paper, please get in touch with:

Officer name: Karl Rands

Tel no.: 01603 638561

Email address: karl.rands@norfolk.gov.uk



If you need this report in large print, audio, braille, alternative format or in a different language please contact 0344 800 8020 or 0344 800 8011 (textphone) and we will do our best to help.



NHT Survey Report

2020 Executive Highlights Report

Introduction

The National Highway and Transport Public Satisfaction Survey (NHT Survey) collects the public's views on different aspects of Highway and Transport in local authority areas, it covers; Pavements, Cycle Routes/Lanes, Local Bus Services, Local Taxi (or mini cab) Services, Community Transport, Demand Responsive Transport, Safety on Roads, Traffic Congestion, Levels of Traffic Pollution, Street Lighting, the Condition of Roads and the local Rights of Way Network. It asks detailed questions about each aspect in turn and this year there are new questions canvassing opinion on climate change, changing travel habits and congestion charging.

Responses to the survey are compiled into Key Benchmark Indicators (KBIs) and Benchmark Indicators (BIs) for each Authority for comparison purposes, most of which measure satisfaction. There are also a range of Key Quality Indicators (KQIs) and Quality Indicators (QIs) which cover the non-satisfaction related questions in the survey, measuring ease of access to services, levels of provision and how well informed the public feel.

This report focuses on Norfolk's KBI results.

This Year's Satisfaction Results

Norfolk's headline public satisfaction results in this year's survey range from a high of 64% for 'Taxi/mini cab services (KBI09)', to a low of 40% for 'Public transport information (KBI08)', with the majority of results over 50%.

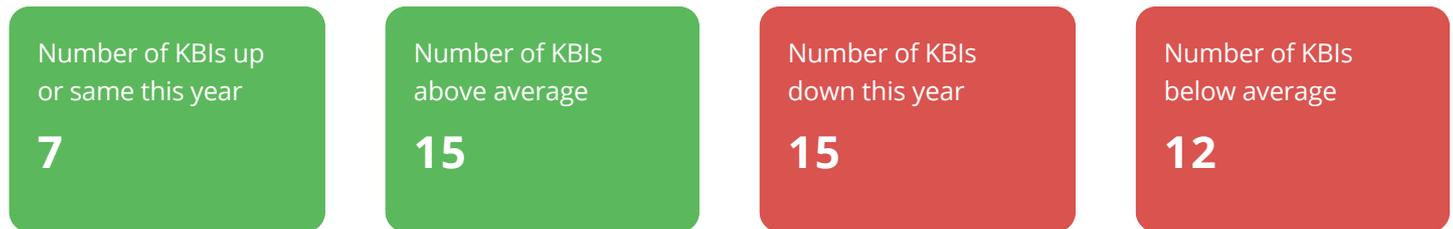
Looking at the overall change in results from last year, satisfaction improved or stayed the same for 7 KBI indicators and declined for the other 15 KBI indicators.

The best year on year change in satisfaction for an individual indicator was recorded for 'Traffic levels & congestion (KBI17)' which saw a change of 2% while the indicator with poorest change in satisfaction was 'Public transport information (KBI08)' which recorded a change of -5%.

Sample Size and Response Rate

Norfolk has taken part in the NHT Survey 10 times and is one of the 109 authorities across the UK to take part in the survey this year. The survey was sent to 3,300 households across the authority area and 887 members of the public responded, including 116 on-line. This represents an overall response rate of 26.9% compared with the national average of 23.8%.

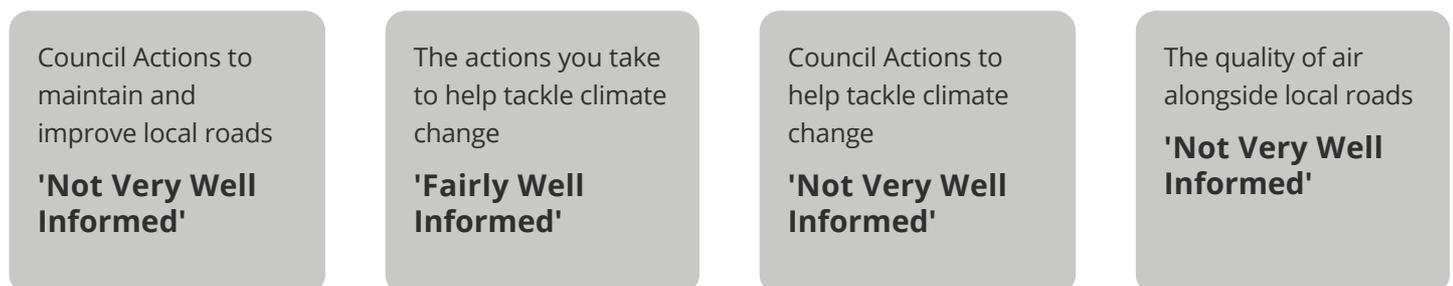
Year on Year Trends and Differences from NHT Averages



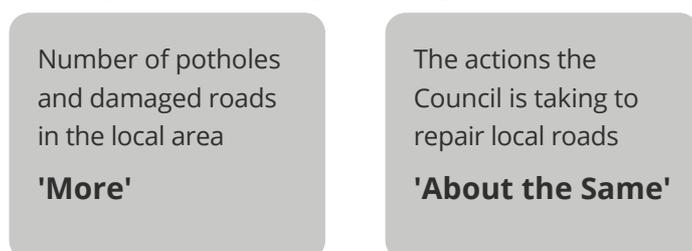
Satisfaction Highs and Lows



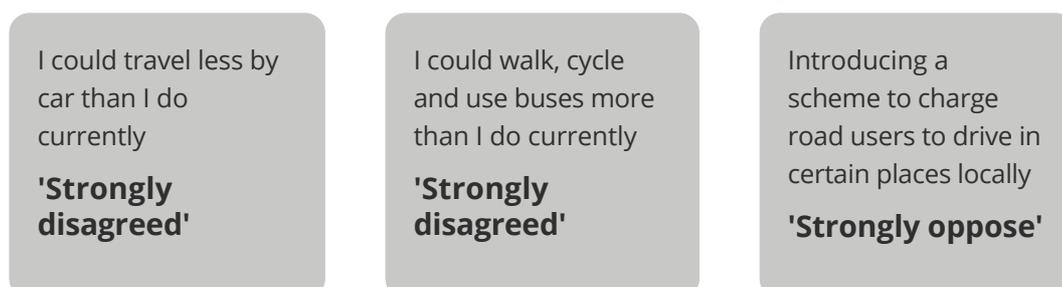
How well informed do the public feel about...



Compared to a year ago what do the public say about ...



Where the public stand on the following ...



Theme Results

Norfolk's theme scores are compared with the NHT Average theme scores below. Also shown are the year on year change in Norfolk's results (Trend) and the difference from the NHT Average (Gap), which are highlighted in colour; blue and green for improvements/above average scores and amber and red for reductions/below average score.

Theme	Description	Norfolk	NHT Average	Trend	Gap
	Accessibility	71%	71%	0%	0%
	Public Transport	54%	57%		-3%
	Walking/Cycling	53%	52%		1%
	Tackling Congestion	50%	46%		4%
	Road Safety	54%	53%		1%
	Highway Maintenance	49%	49%		0%

Notes

Changes to Survey questions and the effect on theme trend reporting

A number of changes are made to the questionnaire each year and this year some individual questions have been split and replaced by new questions to improve the clarity of the public views. The introduction of these new questions affects the composition and calculation of some of the Survey's KBI's and there is a knock on effect on the calculation of Theme scores. Where this is the case we have not provided trend results for these Themes this year. All historic Theme scores are retained and we intend to reintroduce these scores in next year's results.

Individual KBI Results

Norfolk's Key Benchmark Indicator results for this year are compared with the NHT Average, Highest and Lowest below. The difference from average (gap) results are highlighted in colour; blue and green for above average, amber and red for below average.

Key Benchmark Indicator	Norfolk	NHT High	NHT Average	NHT Low	% Difference
Overall					
KBI 00 - Overall Satisfaction	56%	62%	52%	40%	4%
KBI 01 - Importance vs Satisfaction (local)	55%	60%	54%	47%	1%
KBI 02 - Importance vs Satisfaction (national)	55%	60%	54%	47%	1%
Accessibility					
KBI 03 - Ease of Access (all)	76%	80%	77%	72%	-1%
KBI 04 - Ease of Access (disabilities)	62%	74%	66%	59%	-4%
KBI 05 - Ease of Access (no car)	75%	81%	70%	54%	5%
Public Transport					
KBI 06 - Local bus services (overall)	58%	79%	60%	47%	-2%
KBI 07 - Local bus services (aspects)	53%	81%	57%	36%	-4%
KBI 08 - Public transport information	40%	73%	44%	23%	-4%
KBI 09 - Taxi/mini cab services	64%	73%	66%	56%	-2%
KBI 10 - Community Transport	56%	65%	58%	53%	-2%
Walking/Cycling					
KBI 11 - Pavements & Footpaths (overall)	59%	67%	55%	43%	4%
KBI 12 - Pavements & Footpaths (aspects)	55%	61%	54%	48%	1%
KBI 13 - Cycle routes and facilities (overall)	50%	66%	49%	40%	1%
KBI 14 - Cycle routes and facilities (aspects)	47%	62%	46%	39%	1%
KBI 15 - Rights of way (overall)	56%	64%	57%	53%	-1%
KBI 16 - Rights of way (aspects)	50%	60%	52%	48%	-2%
Tackling Congestion					
KBI 17 - Traffic levels & congestion	53%	62%	46%	33%	7%
KBI 18 - Management of roadworks	50%	58%	50%	44%	0%
KBI 19 - Traffic management	47%	57%	42%	34%	5%
Road Safety					
KBI 20 - Road safety locally	57%	64%	57%	49%	0%
KBI 21 - Road safety environment	53%	63%	54%	48%	-1%
KBI 22 - Road safety education	51%	58%	50%	44%	1%
Highway Maintenance					
KBI 23 - Condition of highways	42%	55%	36%	21%	6%
KBI 24 - Highway maintenance	52%	61%	50%	42%	2%
KBI 25 - Street lighting	59%	73%	64%	51%	-5%
KBI 26 - Highway enforcement/obstructions	43%	56%	45%	38%	-2%

Individual KBI Results

Norfolk's Key Benchmark Indicator results for this year and last year are shown below. The trend results are highlighted in colour; blue and green for improvements, amber and red for reductions and grey where no trend data is available (see notes below).

Key Benchmark Indicator	2020 Result	2019 Result	% Change
Overall			
KBI 00 - Overall Satisfaction	56%	55%	1%
KBI 01 - Importance vs Satisfaction (local)	55%	56%	-1%
KBI 02 - Importance vs Satisfaction (national)	55%	56%	-1%
Accessibility			
KBI 03 - Ease of Access (all)	76%	75%	1%
KBI 04 - Ease of Access (disabilities)	62%	62%	0%
KBI 05 - Ease of Access (no car)	75%	75%	0%
Public Transport			
KBI 06 - Local bus services (overall)	58%	58%	0%
KBI 07 - Local bus services (aspects)	53%	58%	-5%
KBI 08 - Public transport information	40%	45%	-5%
KBI 09 - Taxi/mini cab services	64%	64%	0%
KBI 10 - Community Transport	56%	57%	-1%
Walking/Cycling			
KBI 11 - Pavements & Footpaths (overall)	59%	60%	-1%
KBI 12 - Pavements & Footpaths (aspects)	55%	60%	-5%
KBI 13 - Cycle routes and facilities (overall)	50%	53%	-3%
KBI 14 - Cycle routes and facilities (aspects)	47%		
KBI 15 - Rights of way (overall)	56%	58%	-2%
KBI 16 - Rights of way (aspects)	50%	52%	-2%
Tackling Congestion			
KBI 17 - Traffic levels & congestion	53%	51%	2%
KBI 18 - Management of roadworks	50%	54%	-4%
KBI 19 - Traffic management	47%		
Road Safety			
KBI 20 - Road safety locally	57%	58%	-1%
KBI 21 - Road safety environment	53%		
KBI 22 - Road safety education	51%	52%	-1%
Highway Maintenance			
KBI 23 - Condition of highways	42%	45%	-3%
KBI 24 - Highway maintenance	52%		
KBI 25 - Street lighting	59%	64%	-5%
KBI 26 - Highway enforcement/obstructions	43%		

Notes

Changes to Survey questions and the effect on KBI trend reporting

A number of changes are made to the questionnaire each year and this year some individual questions have been split and replaced by new questions to improve the clarity of the public views. The introduction of these new questions affects the composition and calculation of five of the Survey's KBI's (KBI14, KBI19, KBI21, KBI24 and KBI26). We have therefore not provided trend results for these KBIs this year. All historic KPI scores are retained and we intend to reintroduce trend scores for these KBI's in next year's results.

The tables below show your results for the KBI's affected for last year and for this year so you can make your own comparisons.

Indicator	2019
KBI 14 - Cycle routes and facilities (aspects) (Old)	51%
KBI 19 - Traffic management (Old)	59%
KBI 21 - Road safety environment (Old)	57%
KBI 24 - Highway maintenance (Old)	56%
KBI 26 - Highway enforcement/obstructions (Old)	50%

Indicator	2020
KBI 14 - Cycle routes and facilities (aspects)	47%
KBI 19 - Traffic management	47%
KBI 21 - Road safety environment	53%
KBI 24 - Highway maintenance	52%
KBI 26 - Highway enforcement/obstructions	43%

Infrastructure and Development Select Committee

Item No. 10.

Report title: Highway and Transport Network Performance

Date of meeting: 15 September 2021

Responsible Cabinet Member: Cllr Wilby (Cabinet Member for Highways, Infrastructure and Transport)

Responsible Director: Tom McCabe (Executive Director for Community and Environmental Services)

Introduction from Cabinet Member

Having strong infrastructure is recognised in the Council's 6-year Business Plan – Together, for Norfolk - as an essential requirement for growing the Norfolk economy. It is therefore imperative that we monitor the performance of our highway assets in order to spend our budgets wisely, react to changing circumstances and use the money where it is most needed.

In an ever-challenging environment it is encouraging that public satisfaction with highway condition in Norfolk remains good. In the 2020 National Highways and Transportation (NHT) survey we were ranked 1st for overall satisfaction out of 29 shire counties, maintaining our top position from the previous year. The good public satisfaction result suggests that the current asset management strategy has been effective.

The Council has a statutory duty under the Traffic Management Act to ensure the expeditious movement of traffic on our highway network. This includes taking action to contribute to the more efficient use of our road network as well as the avoidance or reduction of road congestion.

Nationally, we perform well when compared with other local highway authorities. However, we recognise that demand on our highway network continues to grow, increasing pressure on our infrastructure.

Executive Summary

This report provides an annual summary of how we are managing our highway assets and network.

Highway asset performance is assessed on an annual basis against a set of previously agreed service level priorities to inform decisions and make the best use of capital expenditure. Revenue budgets, used for general maintenance and repair, are not part of this report. The capital budget has fluctuated in recent years, some having seen significant in-year additional investment from Government. In 2018/19 it

was £46m, 2019/20 was £34m, 2020/21 was £59.2m and the current budget is £44.7m.

A commonly used measure to indicate how well the asset is performing is by determining a 'backlog' figure, which is the 'gap' between current condition and our service level. We use condition surveys to assess the current road condition. The overall highway asset backlog in April 2021 is £47.9m. This has increased from the 2019/20 figure of £45.1m and indicates a slight deterioration in the condition of footways and 'A' roads. This assessment is based on survey results and condition reports collected in 2020 and 2021 and does not reflect all of the significant investment of £59.2m in the asset made in the 2020/21 financial year.

The Highway Asset Management Policy and Strategy was endorsed by this committee in July 2019 and was agreed at Cabinet in January 2020. Member engagement and monitoring of the Asset Management policy, strategy and performance measures is a requirement of the Department for Transport's (DfT) Incentive Fund to receive the full available allocation. In 2021-22 the incentive grant allocation was £3.973m. We await the Governments Autumn Spending Review to determine funding in 2022-23 and beyond.

Actions required:

- 1. To note the progress against the Asset Management Strategy Performance framework and the continuation of the current strategy and targets (Appendix A, B and C);**
- 2. To note the latest network management performance data and progress in the development of congestion and reliability indicators.**

1. Background and Purpose

1.1. Highway Asset Management

- 1.1.1** The Highway Asset Management Policy was agreed by Members in July 2014. The Strategy was reviewed by Members on 14 October 2016 who also approved a performance framework. All three documents were refreshed and considered by the Infrastructure & Development Select Committee in July 2019, and Cabinet January 2020.
- 1.1.2** This enables Members to be informed on whether the strategy is delivering the agreed performance targets and take any necessary action to manage changing circumstances such as annual budgets or the regulatory framework. Evidence for this is included in section 2.
- 1.1.3** There is currently no indicative allocation for our highway block grants for 2022-23 and beyond. The Government is carrying out an autumn spending review later this year and we hope that it will give the highways sector a settlement for at least the next three years. This

would enable us to revisit our strategy and targets for the future years and produce a three-year programme.

1.1.4 At the current time we are assuming that the grant allocations for 2022-23 will be similar to this year at £44.7m.

1.2 **Managing congestion and reliability**

1.2.1 In the previous Network Performance Report presented to Select Committee in September 2020, Members supported the development of new local indicators to measure congestion and journey reliability on the local road network, in the absence of national indicators. The Local Transport Plan consultation response showed that respondents recognised these to be important factors in planning journeys. Members also requested that an additional indicator was reported on Ease of Access.

2.1.1.2 Since then, additional telematics data has been acquired which has allowed for the assessment of journey reliability and congestion for 2017, 2019 and 2020. The new Ease of Access indicator is reported separately using data from the National Highways and Transportation public perception survey. The latest updates to these indicators are discussed further below.

2. **Proposals**

2.1. **Highway Asset Performance**

2.1.1 **Asset Condition**

2.1.1.1 The existing strategy recognised that the level of funding expected in 2019 made the maintenance of current condition challenging and that in most circumstances the strategy would be to manage a slight deterioration.

2.1.1.2 Any shortfall in achieving 2006-07 service levels, or otherwise agreed in 2013-14, is described as a backlog. The overall highway asset backlog at April 2021 is £47.9m. This is an increase compared with £45.1m in 2020. This has been summarised in Appendix A. It should be noted that this assessment is based on survey results and condition reports collected in 2020 and 2021 and does not reflect all of the significant investment of £59.2m in the asset made in the 2020/21 financial year.

2.1.1.3 A summary on the performance of individual asset types can be seen in Appendix B. Most of the increase in backlog relates to the maintenance backlog relating to footways and 'A' roads.

2.1.1.4 The Council's Asset Management Strategy Performance Framework has been updated to show results for 2020-21, and can be seen in Appendix C.

- 2.1.1.5 The 2020-21 Structural Maintenance Capital budget was £59.2m, having received significant additional in-year grants from Government amid the Covid crisis. The comparable highways maintenance budget for 2021-22 is £44.7m.
- 2.1.1.6 Additionally, the Council has shown its commitment to the prevention of potholes and importance of highway maintenance by proposing a £10m Pothole Maintenance fund to be used over the next four years. Details of this was presented to Cabinet on 6 September 2021.
- 2.1.1.7 In August 2021, the Department for Transport (DfT) announced that the Council was successful and awarded an additional £250,000 for the traffic signals maintenance work, for delivery in 2022-23.

2.1.2 Customer Satisfaction

- 2.1.2.1 The National Highways and Transport (NHT) network survey is carried out each summer. For the 2020 survey, 3,300 Norfolk residents, chosen at random, were asked to rate a range of highway and transportation services, including public transport, walking and cycling, congestion, road safety and highway maintenance. It had a response rate of 27%, a good response rate for surveys of this type, and was above the national average response of 24%.
- 2.1.2.2 109 local authorities took part in the 2020 survey. Norfolk County Council achieved a ranking of 1st out of the 29 county council's that participated. This maintains our top performing ranking from the previous year.
- 2.1.2.3 Of those indicators contained in our Asset Performance Strategy Measures in Appendix C we ranked:
- Overall – 1st (previously 1st)
 - Condition of highways – 3rd (1st)
 - Highway Maintenance – 3rd (1st)
 - Pavements & Footpaths – Joint 4th (2nd)
 - Street lighting – Joint 20th (joint 2nd)
 - Satisfaction with public rights of way – 17th (4th)

Measures to improve the significant drop in rankings for the last two items are underway, although it is worth highlighting that our rankings from 2019 were 17th for street lighting and 25th for public rights of way.

- 2.1.2.4 The survey also gives an indication of the relative importance that Norfolk residents place on the services we deliver. Respondents are asked 'For which of the following service areas is it not acceptable to reduce the level of service'. We know from this and previous results that the service that the public would least want to see reduced continues to be 'Management and Maintenance of roads.' This helps inform our priorities and reflects the results above.

- 2.1.2.5 The overall satisfaction remained the same at 56 in comparison with last year.
- 2.1.2.6 The survey return show overall performance is good compared to other county councils and the relative importance that residents place on the condition of the highway network.
- 2.1.2.7 The achievement of Norfolk ranking first for Professionalism of staff regarding enquiries is testament to the abilities of both the Council's Customer Service Centre and Highways & Waste teams.
- 2.1.2.6 The 2021 survey was sent out in June and the results are expected to be released this autumn.

2.1.3 Future Asset Management Policy and Strategy

- 2.1.3.1 To maintain the full allocation from the Department for Transport (DfT) incentive fund, an asset management policy and strategy must have been developed, clearly documenting the links with corporate vision and other policy documents providing the "line of sight" for the asset management strategy. It must have been endorsed by the Executive and published on the authority's website. This document must have been published or reviewed in the past 24 months.
- 2.1.3.2 The asset management policy was agreed by Members in 2014 and refreshed to align with the Norfolk County Council 6-year Business Plan, 'Together for Norfolk', agreed in May 2019.
- 2.1.3.3 The asset management strategy, was similarly refreshed together with the performance framework to monitor it, was endorsed by this committee in July 2019 and was agreed at Cabinet in January 2020.
- 2.1.3.4 As the Government had not conducted its spending review for beyond 2020-21, we made forward projections based upon similar levels of funding. This updated with the 2019-20 results is contained in Appendix C.
- 2.1.3.5 It is proposed to review the Highway Asset Management Strategy and performance framework following the establishment of the hoped for longer-term funding settlement the government spending review planned for the autumn.
- 2.1.3.6 As part of the review we will consider both the total investment, the distribution of funding across asset types and the balance between intermediate and long-life treatments.
- 2.1.3.7 In 2021-22 the incentive grant allocation was £3.973m. We await the Governments Autumn Spending Review to determine the funding arrangements in 2022-23 and beyond. If a similar mechanism is

continued, the failure to maintain a self-assessed score of 3 would lead to the loss of funding of approximately 70% which equates to £2.8m of the incentive grant received this year.

2.2. Highway Network Performance

2.2.1. Journey Reliability and Congestion Indicators

2.1.1.1 Congestion levels have been derived from several million vehicle telematic records for each month between 7am and 7pm daily. Separate figures have been calculated for the local road network with the highest strategic function (primary and main distributor roads; typically, A roads excluding the A47 and A11) and local access roads (linking larger villages, bus routes and HGV generators to the primary and main distributor network).

2.1.1.2 No national congestion indicator exists for the local road network, and the past year has been dedicated to developing reliable statistics. These results are provisional and are subject to further validation once additional monthly datasets have been analysed.

Congestion Indicator (Provisional) (0% = no congestion)		
Year	Primary and Main Distributor Network	Local Access Routes
2017	16.1%	20.8%
2018	-*	-*
2019	14.2%	22.0%
2020	13.5%	23.1%

*Data for 2018 has not yet been processed but will be added when available.

2.1.1.3 Journey reliability has also been calculated from the same datasets. This reports how consistent vehicle speeds are on a day-to-day basis.

Reliability Indicator (Provisional) (100% = consistent journeys)		
Year	Primary and Main Distributor Network	Local Access Routes
2017	54.7%	47.1%
2018	-*	-*
2019	58.6%	55.5%
2020	56.8%	52.8%

2.2.1.4 Congestion has shown a continuous improvement on the main strategic routes across Norfolk. Two main contributory factors have been identified as likely reasons for this change.

2.2.1.5 Firstly, the A1270 Broadland Northway fully opened in April 2018, providing an alternative strategic route for traffic around Norwich. While a 0.1% improvement appears insignificant, the change is much more pronounced on the road network around north Norwich. For example, the A140 Cromer Road in Norwich approaching the Boundary Junction has seen a significant improvement or reduction in congestion levels from 16.0% in 2017 to 8.4% in 2019.

2.2.1.6 Secondly, the pandemic lockdown saw a significant reduction in traffic levels, which in turn impacted congestion performance, including on A140 Cromer Road which dropped further from 8.4% to 7.5% between 2019 and 2020, as detailed in Figure 1



Figure 1: Average % Change in Traffic in Norwich Compared to 2019 Baseline: Figures are a 7-day rolling average

2.2.2. Customer Satisfaction

2.2.2.1 In September 2020, members requested that Ease of Access was also reported as a network performance indicator. This is derived from the annual National Highways & Transport Network (NHT) survey; a public perception questionnaire which is distributed randomly to residents across many local authorities, including Norfolk.

2.2.2.2 The Council have participated in the survey annually since 2013, with the Ease of Access question set featuring in every questionnaire over this period. The questions in this section seek public opinion on how easy it is to access a range of destinations, including hospitals, workplace and friends/family.

2.2.2.3

In 2020, the Council achieved a satisfaction score of 76%, which is consistent with the score achieved in every annual survey completed. The average score amongst county councils participating in the survey (approx. 30 per year) is 77%. Figure 2 below illustrates the Council's Ease of Access performance since 2013

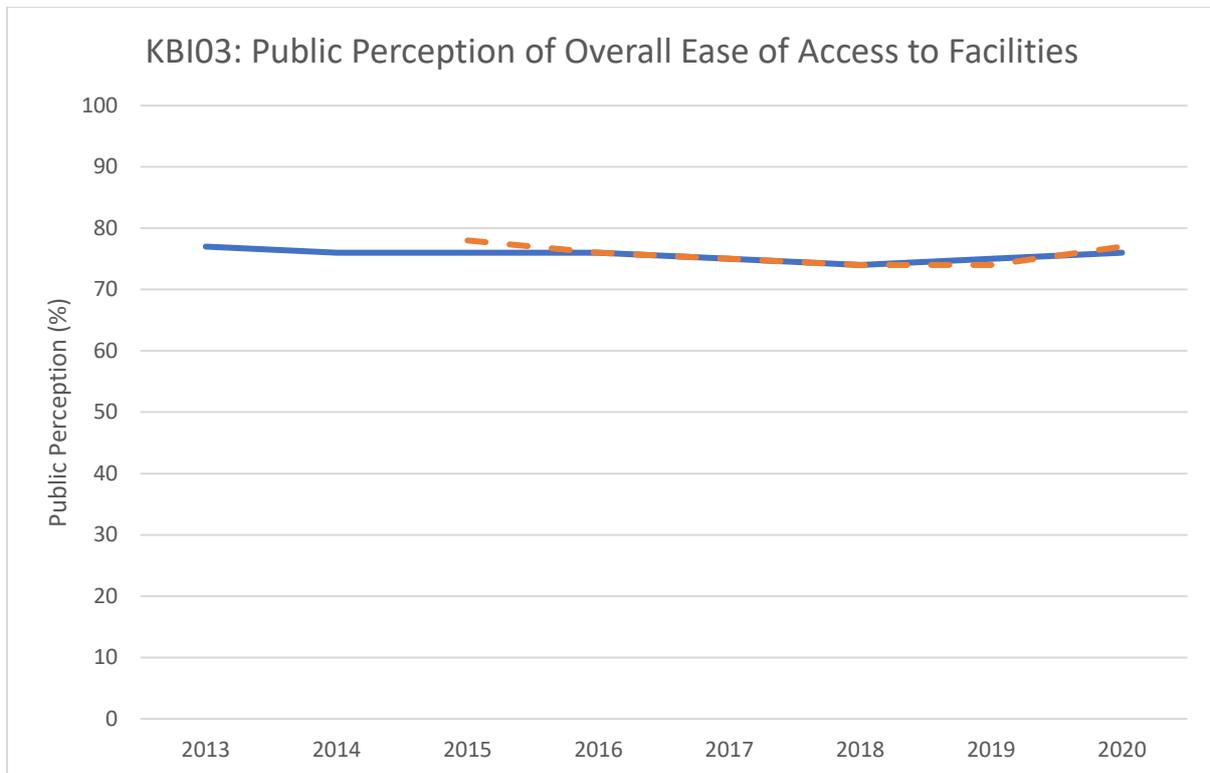


Figure 2: Ease of Access Performance Since 2013

2.2.2.4

Of those indicators within the 'Tackling Congestion' section, the Council ranked against our peers, as follows; -

- Ease of Access (all)* – joint 16th (previously 5th)
- Traffic levels and Congestion – 1st (1st)
- Management of roadworks – joint 15th (2nd)

*The 'ease of access' indicator reports how easily respondents felt they can access services using different modes of transport, including by car, bus and walking.

Further details on network management performance can be seen in Appendix D.

3. Impact of the Proposal

- 3.1. The main proposal is to ensure Members are updated with the annual results and are able to provide direction or endorsement if change is required. This will help ensure that Member support fulfils criteria in the DfT Highway Incentive Fund to ensure we get the full allocation and perform our duties under the Traffic Management Act.

4. Financial Implications

- 4.1. As detailed in 2.1.3.7, in 2021-22 the DfT incentive grant allocation for Norfolk was £3.973m. This allocation is dependent on the Council demonstrating effective asset management to government. If a similar mechanism is continued in future, the failure to maintain a self-assessed score of 3 would lead to the loss of funding of approximately 70% which equates to £2.8m of the incentive grant received this year.

5. Resource Implications

- 5.1. **Staff:** None

- 5.2. **Property:** None

- 5.3. **IT:** None

6. Other Implications

- 6.1. **Legal Implications:** None

- 6.2. **Human Rights implications:** None

6.3. Equality Impact Assessment (EqIA)

- 6.3.1 The Highway Asset Management Policy and Strategy relates to the overall capital investment in structural maintenance. As part of any plans and strategies under this framework, equality and accessibility implications will be considered as a core element. The EQIA was completed for this at last year's report and has been reviewed and updated.

- 6.3.2 Individual schemes will comply with regulations from engineering design manuals, traffic management and liaison with stakeholders. Design and Streetworks processes pick up appropriate design

standards and issues regarding maintaining access during roadworks.

6.4. **Data Protection Impact Assessments (DPIA):** None

6.5. **Health and Safety implications:** None

6.6. **Sustainability implications**

6.6.1 The performance framework should aid appropriate interventions to manage the travel experience, congestion, reliability and emissions, resulting in a positive impact on carbon footprint and air quality.

6.7. **Any other implications:** None

7. **Actions required**

7.1. **1. To note the progress against the Asset Management Strategy Performance framework and the continuation of the current strategy and targets (Appendix A, B and C);**

2. To note the latest network management performance data and progress in the development of congestion and reliability indicators.

8. **Background Papers**

8.1.

1. At the I&D committee meeting on 17 July 2019 endorsed the Highway Asset Management Policy, Strategy and Performance Targets in “Highway Asset Performance” [Report](#) to EDT Committee of and [link to minutes](#)
2. At the Cabinet meeting on 8 March 2021 endorsed the recommendations in “Highway Capital Programme Report and TAMP, containing the Highway Asset Management Policy, Strategy and Performance Targets and [link to minutes](#)
3. At the Cabinet meeting on 6 July 2020 approved the recommendations in “Distribution of the Department for Transport ‘Pothole Fund’ for Local Roads 2020-212, detailing the additional in year funding [link to minutes](#)
4. A paper has been tabled for Cabinet 6th September on the distribution of £10m Highway Maintenance Pothole Fund
5. [Local Transport Plan 2011-2026](#)
6. [Transport Asset Management Plan](#)
7. [Local Transport Plan Member Task and Finish Group update](#) – July 2020 - Infrastructure & Development Committee.

8. [Norfolk Parking Partnership Annual Report](#) – March 2020 - Norfolk Parking Partnership Joint Committee.

Officer Contact

If you have any questions about matters contained in this paper, please get in touch with:

Officer name: Kevin Townly

Tel no.: 01603 222627

Email address: kevin.townly@norfolk.gov.uk



If you need this report in large print, audio, braille, alternative format or in a different language please contact 0344 800 8020 or 0344 800 8011 (textphone) and we will do our best to help.

Highway Asset Backlog 2021

Appendix A

	Backlog 2019-20	Budget 2020-21	Backlog 2020-21	Budget 2021-22	Steady State estimate
Asset type	£m	£m	£m	£m	£m
A roads	10.398	8.664	10.941	3.698	11.993
B roads	0	3.307	0	3.008	4.546
C roads**	0	7.859	0		8.831
U roads**	0	4.059	0	9.31	6.833
Machine Patching		1.615		0.837	
Capitalised Patching/Potholes ex revenue		8.245		7.665	7.582
Surfacing match (TCF2,EATF2)		1.024			
Category 1 footways	0	0.468	0	0.528	1.572
Category 2 footways	1.116		2.083		2.773
Category 3 footways	0	3.578	0.851	2.758	9.849
Category 4 footways	0.086		0.638		3.448
Footways kerbs/small repairs/patch		2.292		2.007	
Highway Drainage					
Maintenance	0.712	0.931	0.891	0.755	0.755
Bid Match Pot		0.075		0.075	0.075
Improvement (Challenge)	18.448		17.759		
Improvement (Town)					
Capitalised Drainage small repairs		1.776		1.176	1.176
Bridges					
Maintenance Bridges	13.1	3.682	13.1	1.957	2.834
Maintenance Culverts	0.0		0.25		
Strengthening	0.305		0.305	0.043	0.305
Assessment etc					
Inspections		0.25		1.011	1.011
small works (ex. revenue)		0.4		0.72	
Traffic Signals					
Replacement	0.852	0.69	0.925	0.575	0.575
small works (ex. revenue)		0.6		0.65	0.65
system		0.05		0.05	0.05
Signs & Post (ex. revenue)		1.09		0.6	0.6
Condition Surveys		0.15		0.16	0.16
Park and Ride Sites	0.04	0.17	0	0.094	0.035
Area Manager Schemes		0.14		0.14	0.14
Fencing		0.055		0.055	0.055
Vehicle restraint systems - planned works risk	0.125	0.032	0.125	0.1	0.1
Vehicle restraint systems - inspections		0.1		0.097	0.097
Vehicle restraint systems - RTA repairs		0.1		0.075	0.075
Contract Cost/Contingencies***		7.78		6.624	6.624
Total	45.182	59.182	47.868	44.768	72.744

Notes

These figures are taken from the price base for each year, not a common price base. 2019/20 Backlog based upon 1-4-20 prices. 2020/21 at 1-4-21 prices.

The backlog figure refers to the end of year, 31/3/2021

* Where service condition is linked to condition surveys, the budget need is to recover service condition not just hold condition in year

** These budgets have not been ring-fenced but shared across 'C' & 'U' roads

1 Condition of Highway Assets Summary

1.1 Roads

- 1.1.1 The results from our condition surveys for 2020-21 were ahead of the asset management strategy and performance targets. All roads except 'A' roads have shown an improvement against previous year's results.

	2019/20	2020/21	
		Agreed Performance Measure target	Actual
'A' roads	3% (2.56%)	2.18%	3.86%
'B' & 'C' roads	5% (5.4%)	6.77%	5.58%

Note: Lower is better. Figures in brackets are the actual figures, but these are rounded to the nearest whole number when reported.

- 1.1.2 The A roads show a continued increase in treatment costs against our baseline, generating a backlog of £10.941m.
- 1.1.3 The B & C network treatment costs are still below our baseline comparison.
- 1.1.4 We changed the methodology of the Unclassified (U) road condition indicator in 2019-20. It now uses the same method as the classified road network. This will enable improved comparison across the various classes of our roads. Unfortunately, the Covid emergency prevented the completion of a full network survey and our result of 7.44% represents approximately 40% of the network.
- 1.1.5 This result is comparable with last year's result of 11.6% and the 2018/19 result of 10% using Coarse Visual Survey method over the whole network.
- 1.1.6 We adopted 11.60% as our new service level last year, and as a result there is no backlog.
- 1.1.7 For 2020-21 we have a backlog on our 'A' roads. Backlogs are shown in Appendix 1;
- 1.1.8 National Statistics 2018-19 provide the most recent comparative data. Our A roads were average, our 'B', 'C' and 'U' roads better than average and 'U' average. The 2019-20 national statistics have been delayed until October 2021 due to the Covid emergency.

1.2 Bridges

- 1.2.1 The Bridges scores showed marginal change, from 2019-20 to 2020-21. The Bridge Condition Index Scores were 89.01 and 90.67 on the HGV and non-HGV networks respectively. These scores are currently (April 2021) 89.04 and 90.42.

- 1.2.2 For 2020-21 we have a backlog on our HGV network of £13.1m which remains the same
- 1.2.3 The culvert stock condition indicator is currently 94.2 which is 0.84 below the service level of 95.04 set on 1 April 2012. Consequently, there is a small backlog which is estimated to be less than £0.25m.
- 1.2.4 One bridge still requires attention in our strengthening programme and represents a backlog of £0.305m. This is Rungays Bridge and is in the forward programme.

1.3 Traffic Signals

- 1.3.1 During 2020/21 a total of 18 installations were replaced, consisting of 11 like-for-like replacements and 7 installations replaced as part of improvement schemes.
- 1.3.2 The resultant backlog at the end of 2020/21 is 11 installations, representing a budget of £0.925m.

1.4 Footways

- 1.4.1 Our 2020-21 footway survey results showed a marginal decline which was expected.

1.4.2

Footway Hierarchy	Frequency	Service Level	Condition Level 4 (structurally unsound)	
			2019-20	2020-21
Cat 1	2-year data	12.5%	11.5%	12.3%
Cat 2		25%	30.6%	35.4%
Cat 3	4-year data	30%	29%	30.6%
Cat 4		30%	30.5%	31.5%

- 1.4.3 There is a backlog against our service level for our lower categories' footway totaling £3.572m; an increase from £1.202m

1.5 Drainage

- 1.5.1 There are no formal condition surveys of highway drains. Overall condition is assessed from regular road inspections. The identified schemes are a mixture of small-scale local interventions and larger "catchment wide" projects. The Greater Norwich Surface Water Drainage Scheme was completed in 2017-18. There is £4,162,758 of identified need remaining in the 'fringe' parishes of Hellesdon, Old Catton, and Thorpe St Andrew. A scheme has been completed at Freethorpe and those in Norwich reviewed. Inflation has been applied at 2.62% on 1st April 2021. The improvement drainage backlog has reduced by £668,843 as a result.

1.6 Park & Ride Sites and Norwich Bus Station

- 1.6.1 The service level on these sites is to fully fund any urgent, essential or necessary structural maintenance works identified by an annual inspection. There is no backlog for 2020/21.

1.7 **Vehicular Restraint Systems (VRS)**

- 1.7.1 Our service level uses information from structural integrity surveys carried out on the whole stock over a 5-year period. We have adopted a service measure whereby if those sites assessed as priority 1 through risk assessment were not to be funded then they would represent a backlog.

Asset Management Strategy Performance Measures

Theme		Indicator Description	18-19	19-20	Context	20-21		Context
						Target	Actual	
Serviceability	Roads	Condition of Principal roads	2.08%	2.56%	National Average for 2017-18 was 3%	2.18%	3.86%	
		Condition of classified non-Principal roads	6.09%	5.40%	National Average for 2017-18 was 6%	6.77%	5.58%	
		Condition of Unclassified roads	10.10%	11.60%		11.50%	7.44%	2nd year SCANNER
	Footways	Condition of Footways 1 - Footway Network Survey (FNS) level 4	12.10%	11.50%		12.70%	12.30%	
		Condition of Footways 2 - FNS level 4	25.70%	30.60%		27.10%	35.40%	
		Condition of Footways 3 - FNS level 4	28.70%	29.00%		31.30%	30.60%	
		Condition of Footways 4 - FNS level 4	30.50%	30.5%		31.50%	31.50%	
	Structures	Bridge Condition Index Score HGV	90.14%	89.01		89.84	89.04	
		Bridge Condition Index Score Non-HGV	90.95%	90.67		90.51	90.42	
		Bridge Strengthening number of bridges requiring strengthening	1	5		1	1	
Traffic Signals	Traffic Signals controller age no more than 20 years	5	15		17	11		
Street Lighting	% Street Lighting working as planned (lights in light)	99.43%	99.33%		99%	99.60%		
Customer Satisfaction	NHT Overall	KBI 01 - Overall (local)	53	56	1st (Was 3rd) best County	53	56	1st (Was 1st) best County
	NHT Walking & Cycling	KBI 11 - Pavements & Footpaths	55	60	2nd (was 9th) best County	55	59	4th (was 2nd) best County
		KBI 13 - Cycle routes and facilities	51	53	2nd (was 10th) best County	51	50	2nd (was 10th) best County
		KBI 15 - Rights of Way	54	58	4th (was 25th) best County	54	56	17th (was 4th) best County
	NHT Highway Maintenance & Enforcement	KBI 23 - Condition of highways	33	45	1st (Was 6th) best County	33	42	3rd (Was 1st) best County
		KBI 24 - Highway maintenance	51	56	1st (Was 8th) best County	51	52	3rd (Was 1st) best County
		KBI 25 - Street lighting	60	64	2nd equal (was 17th) best County	60	59	20th (was 2nd) best County
Safety		Number of people killed and seriously injured on Norfolk's roads	456	524	Member Working Group looking at Road Safety Strategy and future performance measures. Public Health	N/A	tbc	
		Repudiation Rate of Highway Insurance Claims	71%	78%		81	86.09%	
		Winter gritting - % of actions completed within 3 hours	82%	86.25%		80	91.27%	
		Highway Safety Inspection carried out on time	95.30%	98.61%		98	98.29%	
		% Priority A defects attended within response timescale (2 hours)	89.62%	99.95%		96	99.86%	
		% Priority B defects attended within response timescale (Up to 4 days)	91%	95.11%		98	96.65%	
Sustainability (Economic & Environment)		Street lighting – CO2 reduction (tonnes) (Annual emissions)	6154	5614		5790	4663	

Network Management Performance

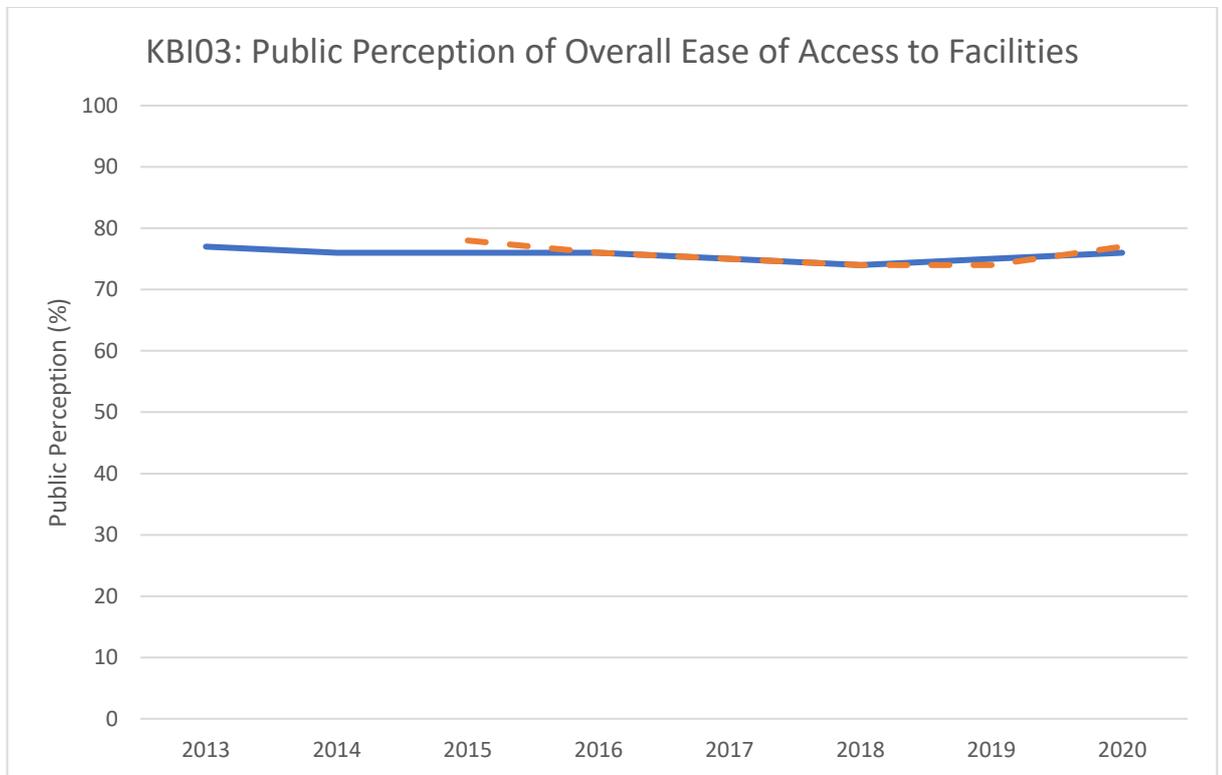
1. Public Perception

1.1. In September 2020, Members requested that Ease of Access was also reported as a network performance indicator. This is derived from the annual National Highways & Transport Network (NHT) survey; a public perception questionnaire which is distributed randomly to residents across many local authorities, including Norfolk.

1.2. The Council have participated in the survey annually since 2013, with the Ease of Access question set featuring in every questionnaire over this period. The questions in this section seek public opinion on how easy it is to access a range of destinations, including hospitals, workplace and friends/family.

1.3. In 2020, Norfolk County Council achieved a satisfaction score of 76%, which is consistent with the score achieved in every annual survey completed. The average score amongst county councils participating in the survey (approx. 30 per year) is 77%.

1.4.



1.5. Raw data results were purchased for the first time in 2020, providing a more detailed insight into survey responses.

1.6. The Ease of Access indicator consists of several questions that respondents are asked to score. The percentage agreeing that it was either very easy or easy to access (by any mode of transport) the following facilities;

1.7.

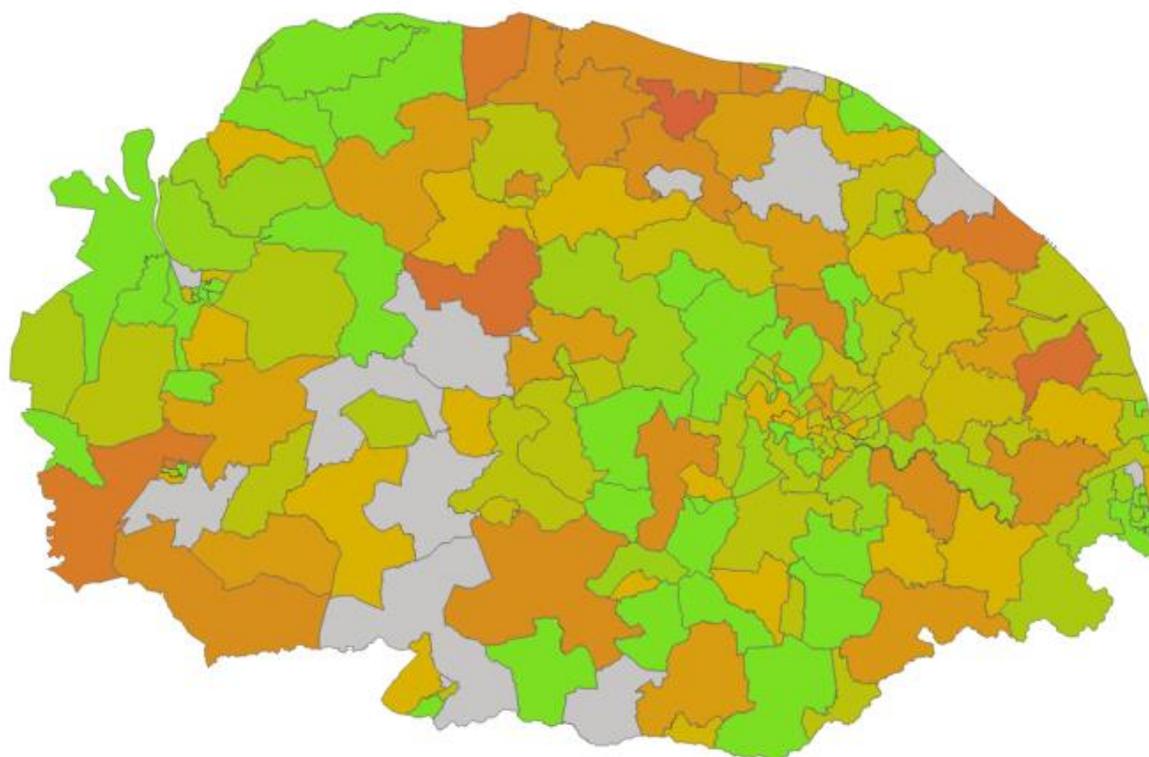
Facility	% Agreeing Very Easy/Easy
Work	78%
Friends and Family	75%
School/college	77%

Post office/banks	74%
Local shops/supermarkets	84%
Leisure facilities	76%
Hospital	65%
Doctors and health facilities	83%

1.8. 89% of respondents had access to a car within their household. Ease of access perception was lower for those without access to a car (67% v.s. 78% for those with).

1.9. Access to hospitals was the poorest rated question within this set, with scores particularly low amongst respondents aged 45+. Responses also varied in different regions of Norfolk, with higher scores in west Norfolk, west of Norwich and south of Great Yarmouth, corresponding with proximity to the region's three main hospitals. Holt recorded the worst score with an average of 17%.

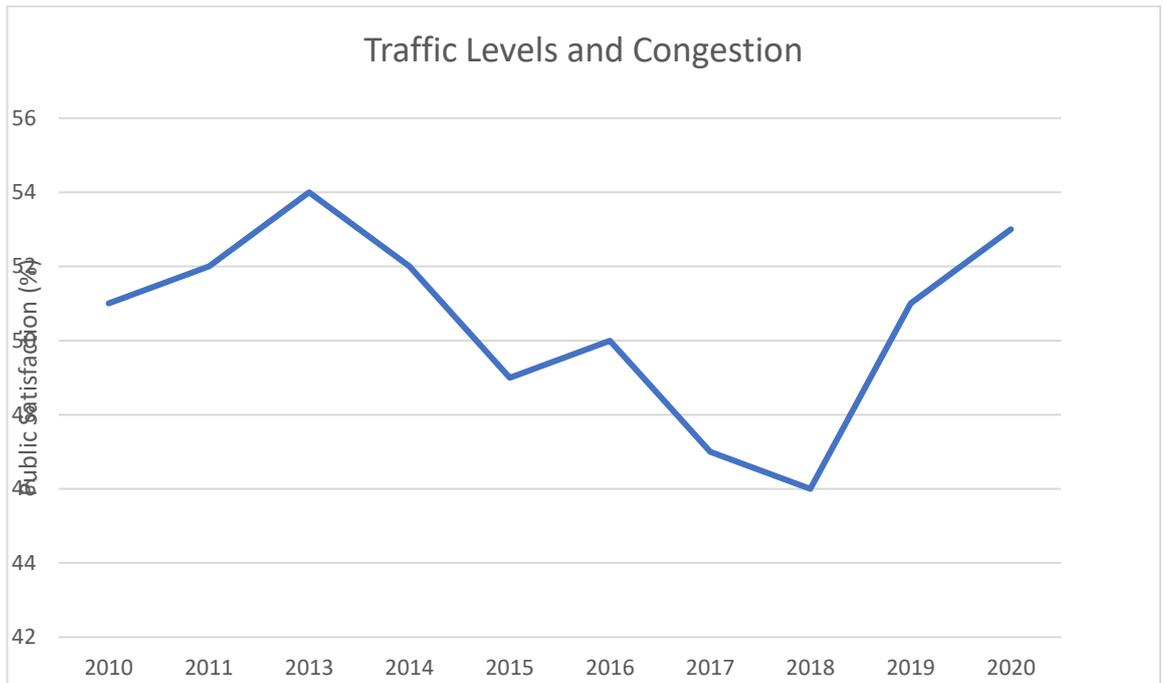
1.10.



1.11. *Figure 1: Public Perception: Ease of Access to Hospitals*

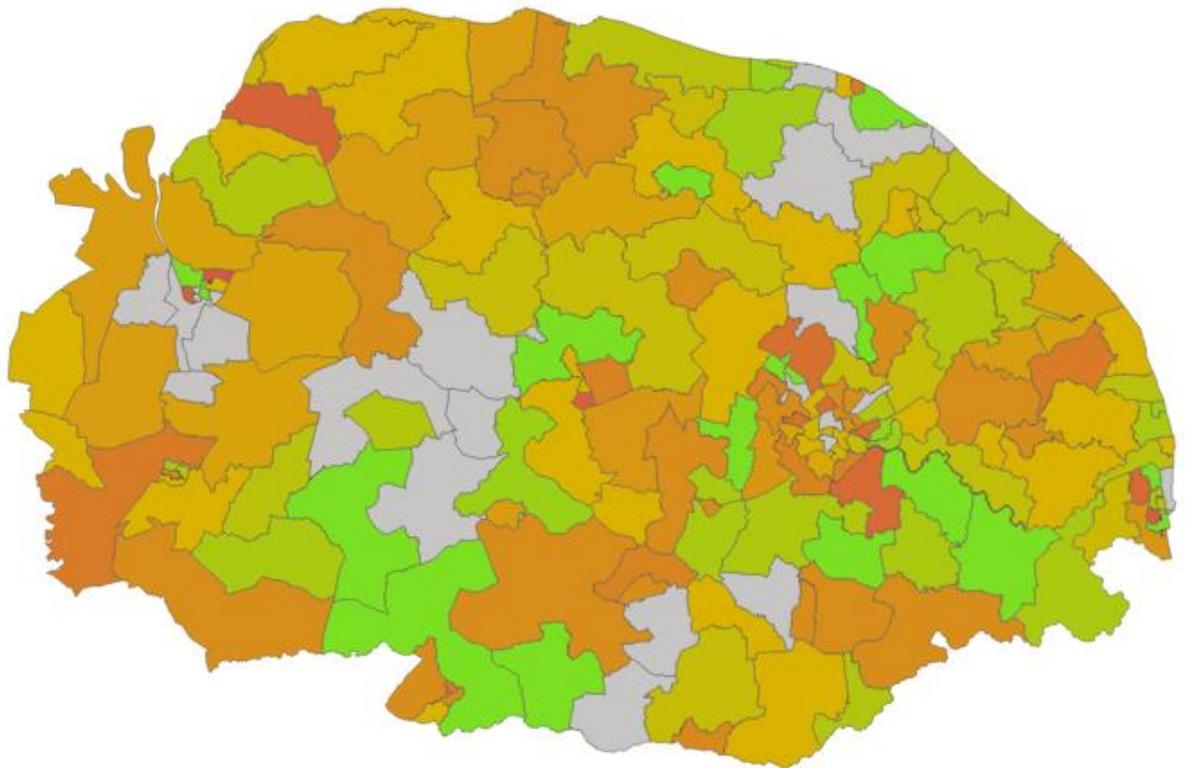
1.12. The survey also asked respondents for their perception on traffic levels and congestion via a series of questions. The overall score for this indicator was 53%, above the average of 46% across participating county councils and an improvement on last year's score of 51%. A promising general upward trend has been observed since 2018, bucking the earlier downward trend in the preceding 5 years.

1.13.



1.14. The survey also asked respondents what their perception was of congestion locally. The percentage of satisfaction was 46% and was consistent across all age groups. The worst area for perception was Gaywood.

1.15.



1.16. *Figure 2: Public Perception: Local Congestion*

Infrastructure and Development Select Committee

Item No. 11

Report title: Forward Plan

Date of meeting: 15 September 2021

Responsible Cabinet Member: N/A

**Responsible Director: Tom McCabe (Executive Director,
Community and Environmental Services)**

Executive Summary

This report sets out the Forward Work Programme for the Committee to enable the Committee to review and shape it.

Actions required

- 1. To review and agree the Forward Work Programme for the Select Committee set out in Appendix A.**
- 2. To agree the Terms of Reference for the Member Task and Finish Group as set out in Appendix B.**

1. Background and Purpose

- 1.1. This report sets out the Forward Work Programme for the Committee to enable the Committee to review and shape it.

2. Proposals

2.1. Forward Plan

- 2.1.1 The current Forward Work Programme for the Select Committee is set out in Appendix A, for the Committee to use to shape future meeting agendas and items for consideration.

2.2 Member Task and Finish Groups

- 2.2.1 At the meeting in May 2019, the Select Committee agreed that, to help ensure a manageable workload, there will be no more than two Member Task and Finish Groups operating at any one time.
- 2.2.2 At the last meeting, the Committee agreed to establish a new Task and Finish Group to consider the public transport elements of the Implementation Plan for the Local Transport Plan. The proposed Terms of Reference for this group are set out in Appendix B.

3. Impact of the Proposal

- 3.1. The Forward Plan enables the Committee to shape agendas for future meetings so that they contain items which the Committee considers are the most important for them to examine.

4. Financial Implications

- 4.1. None.

5. Resource Implications

- 5.1. **Staff:** None.
5.2. **Property:** None.
5.3. **IT:** None.

6. Other Implications

6.1. Legal Implications

None.

6.2. Human Rights implications

None.

6.3. Equality Impact Assessment

N/A

6.4. Data Protection Impact Assessments (DPIA)

N/A

6.7. Any other implications

None.

7. Actions required

- 7.1. **1. To review and agree the Forward Work Programme for the Select Committee**
2. To agree the Terms of Reference for the Member Task and Finish Group as set out in Appendix A

8. Background Papers

- 8.1. None.

Officer Contact

If you have any questions about matters contained in this paper, please get in touch with:

Officer name: Sarah Rhoden
Tel no.: 01603 222867

Email address: sarah.rhoden@norfolk.gov.uk



If you need this report in large print, audio, braille, alternative format or in a different language please contact 0344 800 8020 or 0344 800 8011 (textphone) and we will do our best to help.

Appendix A

Forward Work Programme – Infrastructure and Development Select Committee

Draft agendas for next three meetings:-

Report title	Reason for report
17 November 2021 meeting	
Norfolk Rural Economic Strategy	To review the proposed Norfolk Rural Economic Strategy 2021-24
CES Enforcement Policy – Annual review	To review any proposed changes to the policy.
Transport Asset Management Plan (TAMP)	To consider proposed amendments/updates for the TAMP
Waste Service update	To consider the Waste Services work programme.
Transport for Norwich Strategy	To review the proposed strategy
Active Norfolk Strategy	To inform Members about the new strategy
Forward Work Programme	To review and agree the Forward Work Programme for the Select Committee.
19 January 2022 meeting	
Bus Back Better	To review the proposed bus service improvement plan
Adult Learning annual plan	To review the annual plan
Forward Work Programme	To review and agree the Forward Work Programme for the Select Committee
16 March 2022 meeting	
Winter Service Policy Review	To review the proposed policy review
Norfolk Access Improvement Plan and Action Plan for 2022/23	To provide an update on plan delivery and how the Norfolk Local Access Forum contribute to this
Forward Work Programme	To review and agree the Forward Work Programme for the Select Committee

Regular programmed reports

Regular items	Frequency	Requested committee action (if known)
Policy and Strategy Framework – annual report	Annually - May	To enable the Select Committee to understand the relevant Policies and Strategies for the relevant services.
Highway and Transport Network Performance	Annually - May	To consider the performance of the network and identify any priorities to be considered as part of the annual review of the Transport Asset Management Plan (TAMP) in the light of this performance.
Performance of key highways contracts	Annually - May	To review the performance of key contracts for the highways service, including customer service.
Transport Asset Management Plan (TAMP)	Annually - November	To consider proposed amendments/updates for the TAMP
Forward Work Programme	Every meeting	To review and agree the Forward Work Programme for the Select Committee.
CES Enforcement Policy – Annual review	Annually – September/ November	To review any proposed changes to the policy.
Trading Standards Service Plan	Annually – March	To review and consider the policy elements of the service plan.
Adult Learning annual plan	Annually – January	To review the service plan/strategy

Proposed Terms of Reference for Member Task and Finish Group

Public Transport in the Local Transport Plan Implementation Plan

Objectives and remit

To consider public transport issues relevant to the development of the Local Transport Plan (LTP) Implementation Plan.

The role of the Task and Finish Group is to inform development of the county council's LTP Implementation Plan. The Group will make recommendations on actions to be included in the LTP Implementation Plan for consideration by Select Committee. (Agreement and final adoption of the LTP Implementation Plan will be by Cabinet.) In doing this, the Group will:

- Review data and information
- Consider and identify actions the council could include in the LTP Implementation Plan to meet the agreed strategy and policy objectives of the LTP and support wider objectives of the authority

Outcomes

A report to Infrastructure and Development Select Committee setting out proposed actions for the council to implement, and which would be included in the LTP Implementation Plan.

Membership

The Group will comprise 5 Members from the Infrastructure and Development Select Committee:

- 3 x Conservative
- 1 x Labour
- 1 x Liberal Democrat

The Chair of the Select Committee will nominate a chairperson. The group will be supported by officers from Highways and Waste (rural public transport lead) and Growth and Development (LTP Implementation Plan lead).

Frequency of Meetings

The Task and Finish Group will have one meeting, which will be scheduled for November. This will align with key milestones in the development of the Implementation Plan and enables recommendations to be brought to Select Committee in January 2022 alongside the draft Implementation Plan. Officers will liaise with the appointed chairperson and compile the relevant data and information for circulation to the Group in advance of the meeting.