Economy and Place Policy and Scrutiny Committee **30 January 2023**

Public Electric Vehicle Charging Network

Summary

1. City of York Council ("the Council") was a pioneer in providing public Electric Vehicle (EV) charging infrastructure, with the first chargepoints installed in 2013.

2. In 2020 the Council was one of the first to adopt a Public EV Charging Strategy ("the Strategy") which set out the Council's plans up to 2025. This once again positioned York as a forerunner in the provision of public charging infrastructure.

3. The Strategy is supported by a confirmed budget with external funding providing £3,150,000 and a Council contribution of £1,000,000. This is enabling the delivery of brand new facilities in strategic locations with facilities including Fast, Rapid, and Ultra Rapid chargers.

4. The Strategy considers a number of user groups, with a focus on residents without off-street parking. In line with Government guidance we aim to provide Fast chargepoints within a 10 minute walk (stretch target of 20 minutes) of significant areas of residential properties without off-street parking. We also aim to provide Rapid and Ultra Rapid charging facilities within a 10 minute drive. As shown is Annex A current and planned sites provide total coverage of residential areas within the outer ring road/A1237.

5. The combination of ten years of experience, significant success in attracting external funding, the early publication of a Strategy and the track record of having delivered significant quantities of Fast, Rapid and award winning Ultra Rapid facilities, has positioned York as an exemplar in this field with regular requests for support from other local authorities interested in following the Council's approach.

6. The Councils pioneering work has been recognised by Energy Saving Trust, Cenex, the LEVI Support Body and OZEV with the Council being an active member of OZEV working groups.

7. The focus of this report is the Council's public EV Network (York EV Network), however members will be aware of recent press conjecture regarding the Council's Fleet electrification programme. The creation of a dedicated Fleet charging facility at Hazel Court is nearing competition. In the meantime early deployment of EV vans has been achieved by utilising the York EV Network since late 2022. Short term plans to allow EV vans without the ability to Rapid charge are in place. As a result EV vans have, and are, being brought into service where appropriate ahead of the dedicated Fleet charging facility being brought on line.

8. Our ambitious EV strategy has delivered 38 new electric vehicles to the Council's fleet vehicle stock including two electric waste vehicles. Sixteen of these are already in operational use by the services and the rest are either in the process of being deployed or are awaiting fitting with racking for Building Services trades. This has unfortunately been delayed due to difficulties with supply chains.

9. It is important to note that the cost and demand for electric vehicles is rising so quickly that should we have waited for the infrastructure the inflation would have driven the cost significantly higher, indeed the vehicles in storage are already more valuable now than when we purchased them.

10. If the Council had waited for the infrastructure before ordering the vehicles then the anticipated delay would be around a year for vehicles to arrive, such is the lead in time for EV Commercial vehicles. As a result, the decision to order vehicles ahead of time has ensured that they are ready to deploy as soon as possible and avoided excessive costs.

Recommendations

11. The Economy and Place Scrutiny Committee is asked to:

- Note the work undertaken to provide public EV charging facilities.

12. Reasons:

- Paper requested by Economy and Place Scrutiny Committee.

Background

13. The Council first provided public EV charging faculties in 2013. Since then the EV market has developed significantly. In recognition of this, in 2019 the Council developed one of the first Public EV Charging Strategies with support from the Energy Saving Trust. The Strategy was adopted in March 2020 and runs to 2025.

14. The adoption of a near term, delivery focussed Strategy has enabled the Council to maintain and strengthen its leading position in this field. It has also proved crucial in both the efficient delivery of infrastructure and the ability to attract external funding. This has led to over 75% of all funding being from external sources. This represents exceptional value for the Council and reflects first mover advantage.

15. As set out in the Strategy, day to day running costs of the Network are covered by users via a user tariff. York's 'own and operate' model enables 100% of revenue to be retained by the Council and provides complete control over tariff setting. This approach provides a fair balance which ensures that the costs of running the Network are borne by users whilst keeping tariffs as low as possible.

16. The York EV Network provides three complementary tiers of charging offer; 1. Fast chargepoints (7kW) equivalent to a domestic chargepoint; intended for long dwell times including overnight charging 2. Distributed Rapid chargers (50kW) with a maximum stay of 90 minutes 3. HyperHubs, dedicated charging hubs with Rapid and Ultra Rapid chargers (175kW) with a maximum stay of 90 minutes.

17. The Network is designed to support multiple user groups, including commuters, visitors, through traffic, residents, and residents without off-street parking.

18. For residents without off-street parking the focus is significant areas of terraced housing streets. We aim to provide Fast chargepoints within a 10 minute walk of these areas, with a stretch target of 20 minutes. We aim to provide Rapid chargers within a 10 minute drive, and aim to provide a HyperHub within a 10 minute drive. The delivery of the 2020 – 2025 Strategy is delivering against these aims.

19. When choosing to use overnight Fast chargepoints, residents can apply for the Minster Badge which for EV users allows free overnight parking

whilst charging. This means that residents who prefer to Fast charge overnight do not face additional parking fees that would not apply if they could charge at home.

20. The Strategy has a focus on residents without off-street parking, as it is not possible to charge their EV(s) at home. It has been a longstanding requirement of Government subsidy for residential chargepoints, that off-street parking is present. Without off-street parking reputable chargepoint installers will not install, and no Government subsidy can be applied for by the EV owner.

21. Further to this, the Council (as local highway authority for York) does not allow charging cables to cross Highway land where the cable crosses the footway or enters the running lane of the roadway. Where space is available to avoid crossing footway and where dedicated charging bays can be created that do not sit within the running lane, designs will be considered.

22. Independent advice has been sought from the Energy Saving Trust, and we have received confirmation that where off-street parking is not available, public charging infrastructure is the most appropriate form of EV charging infrastructure provision.

23. Due to the nature of the built environment in York, it is not possible to provide public charging infrastructure on terraced streets, but it is possible to provide facilities within 10 – 20 minutes walk, meeting Government guidance.

24. As part of the review of public provision we have investigated lamp post charging options. Unfortunately in many cases the target streets have no street lamp columns. In any event even if street lamp columns were available, in common with all charging options there would still be no space to create charging bays that do not sit within the running lane of the roadway, and therefore no cable management within the roadway. As a result this is not an option.

Consultation

25. The development of the Public EV Charging Strategy (2020 – 2025) was supported by the independent expert body the Energy Saving Trust (EST). EST provided independent guidance on the approach taken drawn from its extensive experience of EV charging solutions across

the UK. The Council's Strategy was the first to include EST's logo in recognition of this process.

Committee areas of interest

26. Committee has requested additional information on the following:

- Summary of what we know about how many York residents are now using electric / hybrid vehicles, any supporting data showing growth/decrease over the last 5/10 years.

27. UK data shows that the has been an increase in plug-in car ownership over the past 5 years. In 2018 around 0.2% of cars in circulation in the UK were either BEV (pure electric) or PHEV (plug-in hybrid). In 2019 this increased to 0.8%, in 2020 it became 1.3%, in 2021 it was 2.15% and by the end of 2022 the figure was 3.2%. We believe that York broadly follows the national UK trend, with an estimate of 3% – 4% of cars in York being plug-in (either BEV or PHEV).

28. Over the same period, the split of new BEV to PHEV has changed significantly. In 2018 PHEV sales made up 74% of the new plug-in market. The following year the PHEV share had fallen to 48%, and this trend has continued with 2022 data showing PHEV sales taking a 28% share with BEV achieving 72%, a near total reversal within 5 years. This is in line with market expectations which expect BEV to dominate plug-in sales going forward.

- What provision there currently is for EV charging across York currently covering on-street, off-street, hyper hubs, the lot, and its performance covering, but not limited to:

- How many EV charging points have been installed?

29. To date we have installed 84 Fast sockets, 12 Rapid and 8 Ultra Rapid chargers. We also have 6 legacy Fast sockets and 1 legacy Rapid charger which will be replaced.

- What percentage are actually working at any given time?

30. All of the infrastructure installed since 2020 regularly meets 99% uptime requirements. The legacy chargepoints (6 sockets) and charger (1 Rapid) have significant reliability issues, and have already been identified for replacement. The replacement of all legacy infrastructure is a key priority within the Strategy.

- How many vehicles use the charging points per day / per week?

31. In December 2022 the number of individual charging sessions was 3,826. This equates to 123 sessions a day / 863 sessions a week.

- Who is using the charging points?

32. We do not hold this information currently. However anecdotally we do know that residents without off-street parking are using the Network successfully. Generally these customers are preferentially using Rapid and HyperHub sites. We also know that a wide range of customers use the Network, including visitors, commuters, residents and through traffic.

- Are Hyperhub rapid charging points used more than standard charging points?

33. Yes. Customers show a clear preference for the award-winning HyperHub facilities. In December 2022, just over 72% of all charging sessions took place at the two HyperHub sites. Furthermore customers show a clear preference for Rapid charging in general, with all Rapid charging sites accounting for 76% of all charging sessions.

- What is the total carbon emission saving of the EV charging points over the past six months, and what is the projected carbon saving from car vehicles in across York for the next 1 /2 /3 years?

34. Using BEIS Greenhous gas reporting conversation factors (2022) the quantity of CO_2e saved compared to an average ICE car can be estimated. On this basis, the assumption is that average UK grid electricity is consumed, whereas the Council's electricity contract requires green electricity. Therefore these figures understate the actual CO_2e saving. In addition via HyperHubs, the Council also generates electricity through the onsite PV arrays and offers grid services via onsite battery storage, both of which have a CO_2 benefit not considered here.

35. Past 6 months (June to December 2022); approximately 575 Tonnes of CO_2e were saved. [this assumes that 104 Tonnes were emitted through grid electricity supplied]

36. 1 year forecast (2023); approximately 1,341 Tonnes of CO_2e may be saved. [this assumes that 243 Tonnes of CO2e are emitted through grid electricity supplied]

37. Year 2 forecast (2024) 1,475 Tonnes of CO2e may be saved.

38. Year 3 forecast (2025) 1,623 Tonnes of CO2e may be saved.

- What is the total number of kWh charged across all the EV charging points in York every day?

39. The daily average for December 2022 was 3,099 kWh. This equates to approximately 9,684 to 12,912 miles of charge a day. On a monthly basis this equates to approximately 300,215 to 400,287 miles of charge a month.

- What is the profile of usage across the day/ week?

40. The profile varies from site to site. In general HyperHubs have strong usage throughout the week but are busiest on Fridays and Saturdays. Approximately 98% of sessions start between 04:00 and 23:00 with the busiest times (2/3rd of sessions) between 10:00 and 17:00.

41. Fast chargepoint sites are generally busiest on Saturdays with Fridays and Mondays being next busiest. Approximately 17% of sessions start between 18:00 – 00:00 across all sites, with this increasing to 20% at the most popular site. This time period correlates with the free parking whilst charging offer, aimed at residents via the EV Minster Badge.

- The challenges faced in introducing on street EV charging (installation logistics, financial, ongoing maintenance/management etc)

42. There are many challenges involved in the installation of on-street infrastructure.

43. On residential streets this starts with consultation, placing infrastructure outside a property whose occupant may not be a plug-in vehicle owner is often controversial. Equally a resident who initially owns a plug-in vehicle may change the vehicle or move house. The perceived loss of a parking space (for ICE) is a common compliant. The TRO process can also be long and difficult as a result. The consultation process can therefore significantly delay rollout and can ultimately stop delivery. For this reason LA's will commonly try to identify sites that are not fronted by residential properties.

44. The consultation issue makes planning rollout difficult as it places significant uncertainty over delivery.

45. On-street EV charging generally requires very long business cases. This is why OZEV has focussed on supporting this sector of the market. As a result the 'concession contract' model is used to deploy on-street

EV charging infrastructure provision. (The Council currently uses the 'own and operate' model rather than the 'concession' model). In York many of the areas of interest are Residents Parking (ResPark) zones which significantly limits the user catchment area, further weakening the commercial case.

46. The concession arrangement is complicated by the uncertainty over deployment. The concession holder will base their proposals on certain rollout rates and will have preferred areas to deploy in, the Local Authority (LA) will want deployment to meet local requirements which is likely to include deployment in areas with weaker business case. The uncertainty of deliverability can lead to tension between the concession holder and the LA as a result.

47. In terms of installation, physical space can be a significant issue, as it is important that minimum footway widths are maintained. Placing chargepoints in the roadway is an alternative but again is dependent on space being available and will lead to a reduction in 'parking spaces'. In addition existing services, utilities, and structures must be avoided, which can be challenging and may determine where infrastructure can be deployed. Finally electrical supply is a critical factor. Supply will generally determine the position of a chargepoint (nearest to supply point) and is by far the biggest variable in the cost of delivery. Securing a new supply point will frequently make individual streets unviable, leading to a 'postcode lottery'.

48. Maintenance of the chargepoint will be provided by the concession holder. This would be a contractual obligation. As such maintenance in broad context should not be an issue. In detail, concession holders should be monitored closely to ensure that maintenance obligations are adhered to as they can be challenging whilst chargepoints are not generating significant returns for a number of years (as is the assumption for on-street providers). This could lead providers to focus repair and maintenance on profitable sites and deprioritise underutilised locations. Consideration should also be given to responsibilities in the event of the concession holder going into liquidation as the combination of long contract durations, weak commercial case, and the relatively recent development of providers in this space combine to make acquisitions, mergers and failures more likely.

49. Financial implications are significant. Firstly, as on-street locations are generally not commercially viable, initial rollout is dependent on subsidy. Concession contracts of over 20 years have been required in

some areas to provide a business case for bidders. This illustrates that there will be significant challenges in rolling out future infrastructure within the next 5 – 10 years with continuous funding required for new sites. This could create significant issues for LA's who are able to start rollout, build resident expectations, and then face significant issues in meeting additional demand.

50. Secondly any revenue/profit share that flows back to the LA will be very limited. This can cause challenges for the LA, as the concession holder will be responsible for installing and maintaining chargepoints but it is the LA that would be responsible for planning where chargepoints are needed, consultations with residents, implementing TRO's, bay management/enforcement, contract management, maintaining footway and highway and managing resident disputes.

51. Thirdly the cost for users can be an issue. As the least commercially viable charging option, on-street charging will generally be more expensive than would be possible in more viable settings. Additionally, through the concession model, it is strongly advised to have more than one provider, but it is not possible for the LA to control the user tariff. As a result the different providers can charge different user tariffs. This will cause confusion for residents as the cost of charging will vary from street to street, or even within one street and could lead to different user experiences.

- The potential opportunities realised by introducing more on street EV charging.

52. As outlined above there are significant disadvantages to the LA and to the user of rolling out on-street provision with long concession contracts, in residential areas with property frontages, with limited physical space, limited electrical connections, and ResPark restrictions. However there are LA areas which do not have these restrictions, and in these settings on-street benefits from providing chargepoints as close as possible to residential areas, and is a highly visible option.

- What leading Local Authorities (in this area) are doing/trialling elsewhere for on street EV charging, and their successes/failures.

53. The success of leading LA's (including City of York Council) lies with tailoring provision to local circumstances. This has led to a wide variety of delivery options. In general where LA plans have required improvement, the LA has failed to understand local need (proportion of on-street vs off-street, failure to identify user groups such as tourists, visitors, commuter, resident, through traffic etc) and/or has failed to

consider financial viability, future rollout obligations, ability to define user tariff, and scalability of chosen options. Failure to recognise wider transport objectives and the travel hierarchy can lead to EV actions that undermine or counteract wider transport policy, particularly as actions aimed at privately owned EV's should consider their position at the bottom of the travel hierarchy.

54. We are aware of potential legal action being considered by LA's where their relationship with concession holders has broken down and they remain tied into long running contracts (commonly 15 – 20+ years). This is more likely to occur when the LA has failed to consider the above.

55. There is a consensus view of the leading LA's that any residential charging options for areas with on-street parking/without off-street parking has to be public provision, i.e. residents are not allowed to provide a connection from their own property and run cables across Highway land. As a result LA's are focused on the most appropriate form of public provision.

- What plans CYC have to increase this provision, even if through pilots. If no current plans in place then a invite ideas from Officers on places for possible pilots, with timescales/costs attached, for particular streets and/or communal non-commercial residential parking areas.

56. Ordnance Lane – a new design for on-street delivery where space is available to avoid cables crossing footway and providing a charging bay outside of the running lane. If successful, new developments/areas where space is available can benefit from this design.

57. Nunthorpe area; known resident demand and currently not well served by existing provision. To develop an on-street design that meets criteria on a nearby non-residential setting to serve residential area. This would test delivery in a new setting to understand any issues.

58. Monitoring success of infrastructure delivered through planning obligations at Lowfield Green and Marjorie Waite Court. Such developments can help to provide 'infill' provision in hard to deploy areas.

59. Public estate; to investigate areas of land within public ownership that could serve nearby residential areas.

Council Plan

60. Getting around sustainably

The provision of public charging supports the adoption of plug-in vehicles.

61. A greener and cleaner city

The provision of public charging supports the adoption of plug-in vehicles which support these objectives. Whilst noting that private vehicles are at the bottom of the travel hierarchy, the York Public EV Charging Strategy has been developed to respect wider transport objectives and avoid counter productive measures.

Implications

62. **Financial**

There are no Financial implications.

63. **Human Resources (HR)**

There are no Human Resources implications.

64. **One Planet Council / Equalities**

65. The Council needs to take into account the Public Sector Equality Duty under Section 149 of the Equality Act 2010 (to have due regard to the need to eliminate discrimination, harassment, victimisation and any other prohibited conduct; advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it and foster good relations between persons who share a relevant protected characteristic and persons who do not share it in the exercise of a public authority's functions).

66. Equalities Impact Assessments will be carried out as and when appropriate.

67. **Legal**

68. Property

69. Where the Council wants to install new or additional EV charging infrastructure on land that is not owned by the Council, or is leased by the Council to a tenant, then the Council will need to obtain permission

from the landowner or tenant. (For example all of the Park and Ride sites serving York are leased to First York (Ltd). In addition of those Park and Ride sites, 3 (those at the Designer Outlet, Grimston Bar and Rawcliffe) are not owned freehold by the Council but are instead leased by the Council from the respective freehold landowners).

70. Procurement and Contract

71. The supply of goods and installation services will be procured in accordance with the provision of the Public Contracts Regulations 2015, the Concession Contracts Regulations 2016 and the Council's Contract Procedure Rules.

72. Funding Agreement(s)

73. Any external funding already awarded is likely to be predicated on the council proceeding with the project as described in its funding application(s). A change in scope may mean a change request may need to be drafted and submitted to the funding body to vary the existing application, if that was permitted.

74. Where any additional external funding is applied for and awarded, the funding agreements will be reviewed by Legal Services.

75. **Crime and Disorder**

There are no Crime and Disorder implications.

76. **Information Technology (IT)**

There are no IT implications.

77. **Property**

There are no Property implications.

78. **Transport**

There are no Transport implications.

Risk Management

79. There are no Risk Management issues.

Contact Details

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	Report Approved √ **Date** 20/01/2023

Specialist Implications Officer(s) List information for all

Corporate Finance Team
Legal Services

Wards Affected: List wards or tick box to indicate all **All** √

For further information please contact the author of the report

Background Papers:

Public EV Charging Strategy (2020 – 2025)
https://www.york.gov.uk/downloads/file/6264/city-of-york-public-ev-charging-strategy

Annexes

Annex A - Maps showing infrastructure delivered since 2020, future HyperHub sites, 10 minute walk/drive coverage and areas of significant terrace housing.

List of Abbreviations Used in this Report

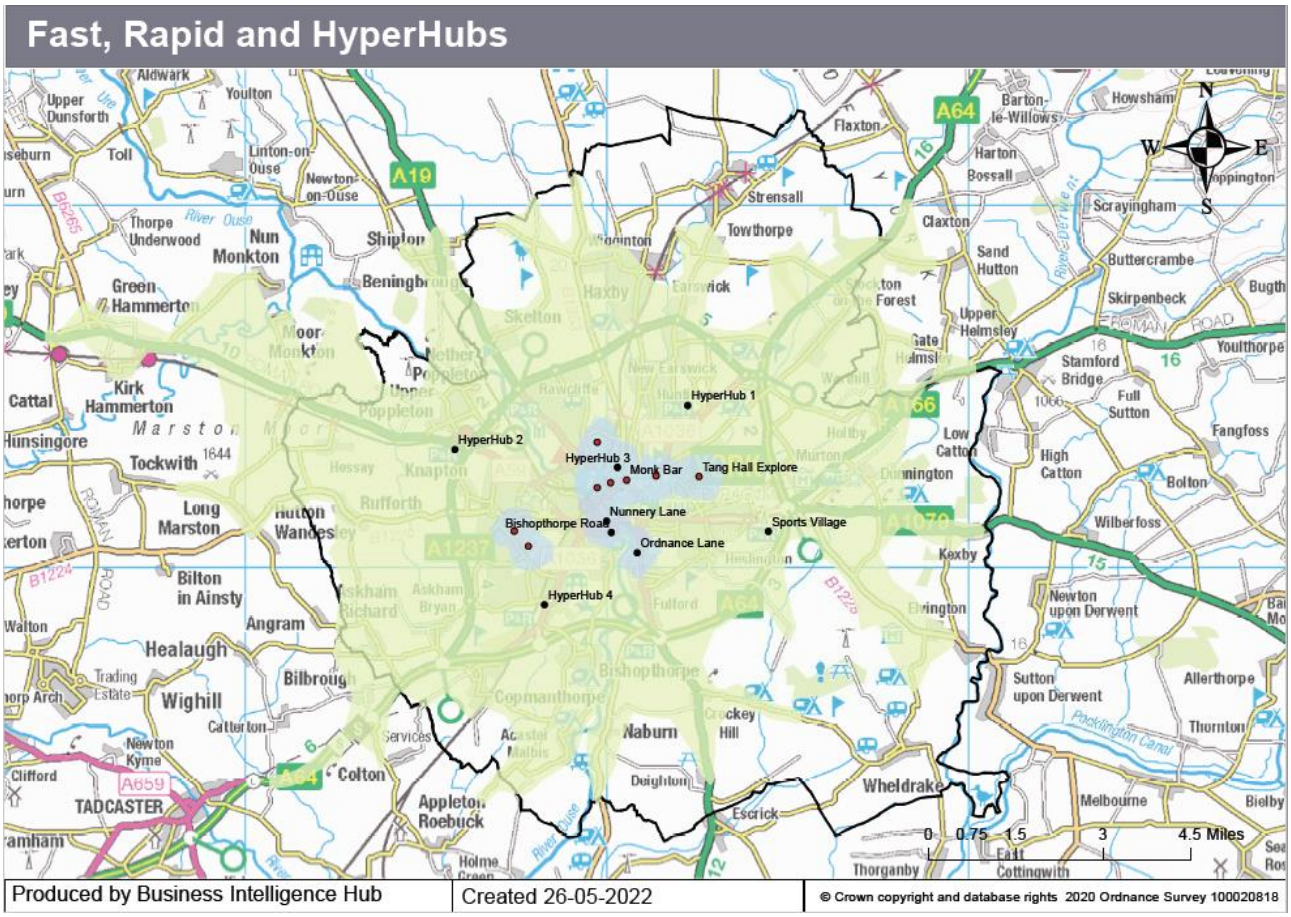
BEV – Battery Electric Vehicle (Pure Electric)
EV – Electric Vehicle
Fast chargepoint – AC charging at between 7kW – 22kW
ICE – Internal Combustions Engine
kW – Kilowatt

LEVI - Local Electric Vehicle Infrastructure
PHEV – Plug-in Hybrid Vehicle
Rapid charger – DC charging at up to 50 kW
TROs - Traffic Regulation Orders
Ultra Rapid charger – DC charging, commonly 150kW to 350kW
OZEV – Office for Zero Emission Vehicles

Annex A

10 minute walk (grey areas) from Fast chargepoints (red dots) and 10 minute drive (green area) from Rapid and HyperHub sites (black dots).

HyperHub 3 is fully funded but is subject to planning permission
HyperHub 4 is a future development that requires additional funding



All sites including Park and Ride

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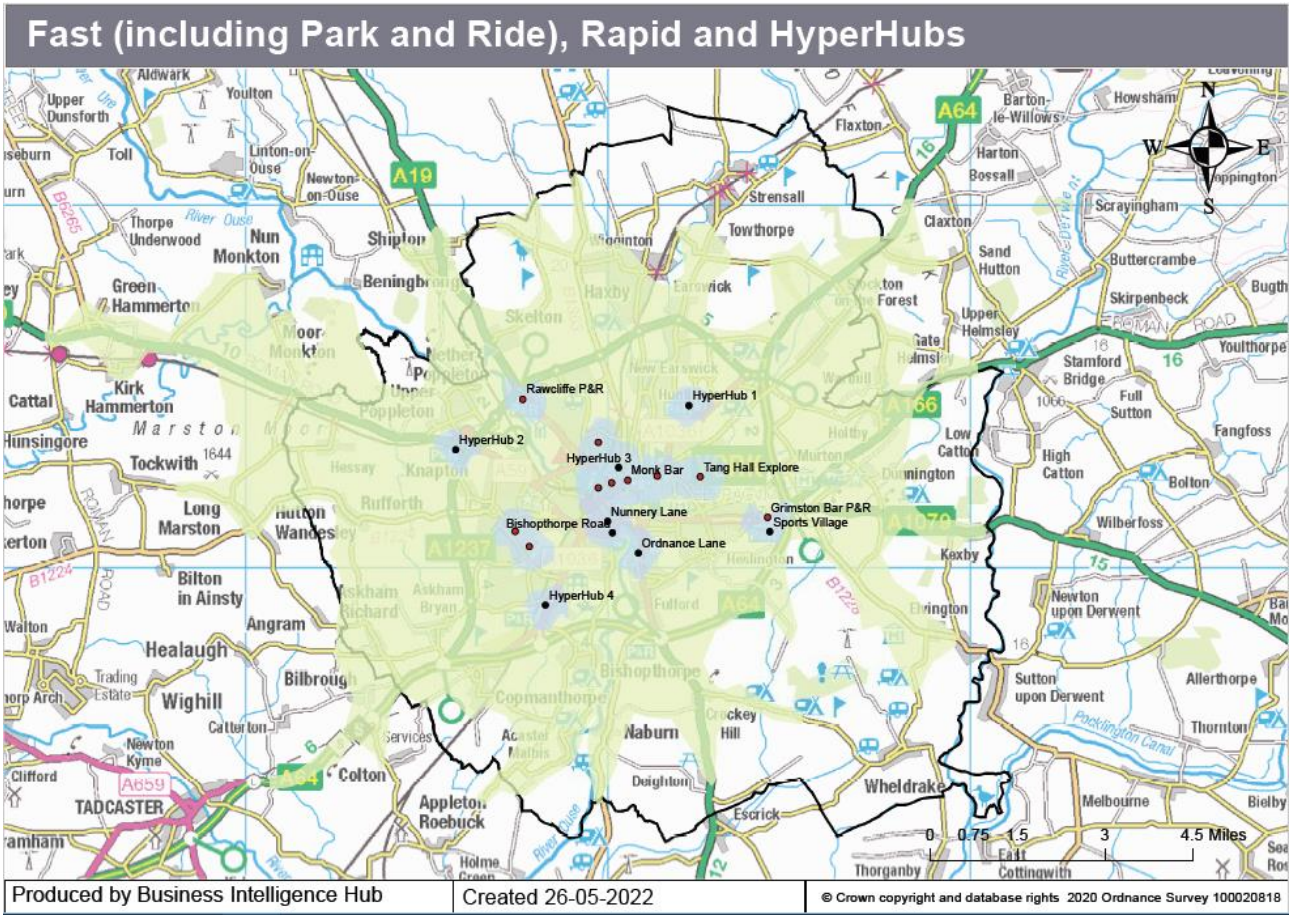
HyperHub 4 is a future development that requires additional funding



Areas of significant terrace housing