Scaling on Street Charging Infrastructure

D2.7 Maps of target areas (Ms2)

Acronym:	**SOSCI**
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1. Introduction

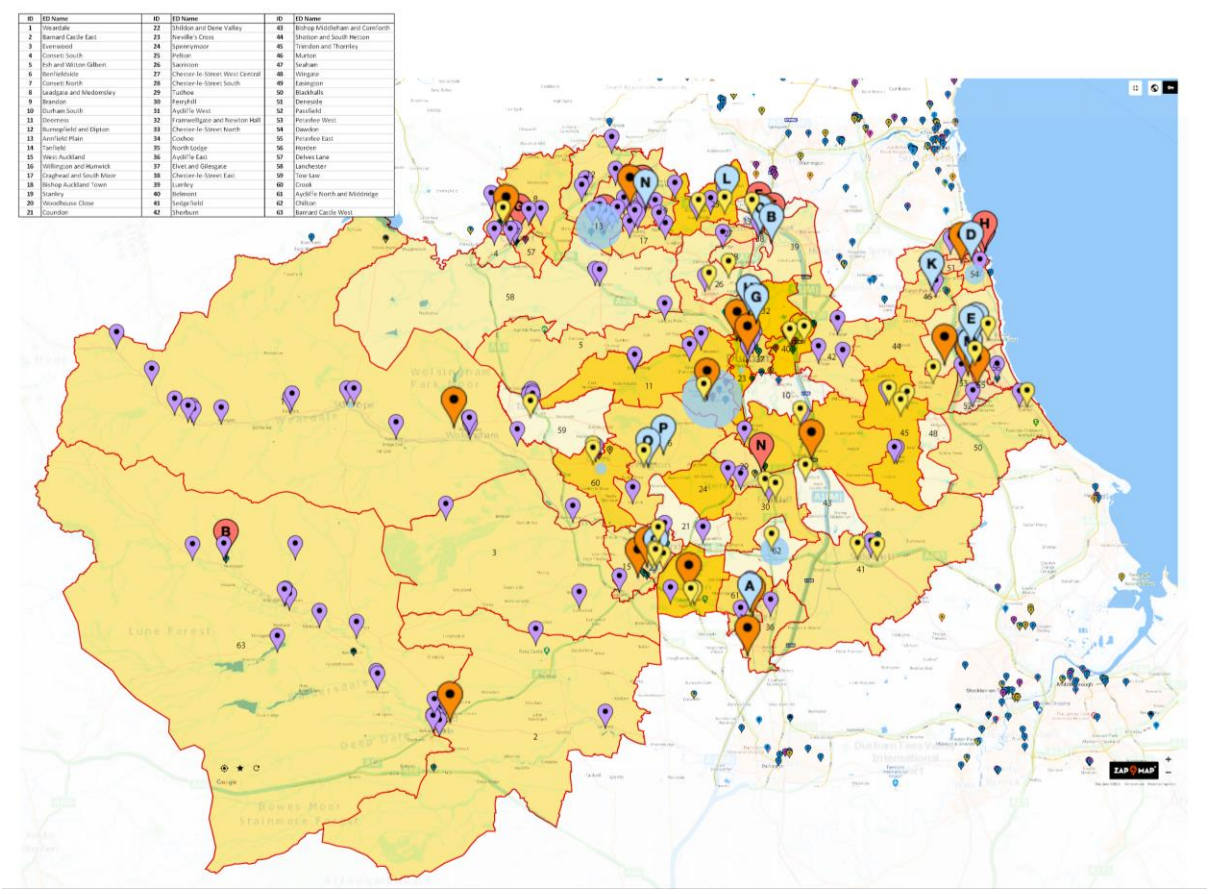
The SOSCI project has used maps extensively to show the spread of potential sites across the target areas, engage people to understand where EV chargepoints go within their communities and track the progress of completed EV chargepoint sites.

Maps stimulate conversations as residents, politicians and businesses can all relate to how proposed EV charging infrastructure relates to them in their daily lives. In County Durham, some councillors questioned why there were no chargepoints planned in their area having seen the maps produced by the project. In Cumbria and Lancashire, residents could see proposed sites which they could invest in.

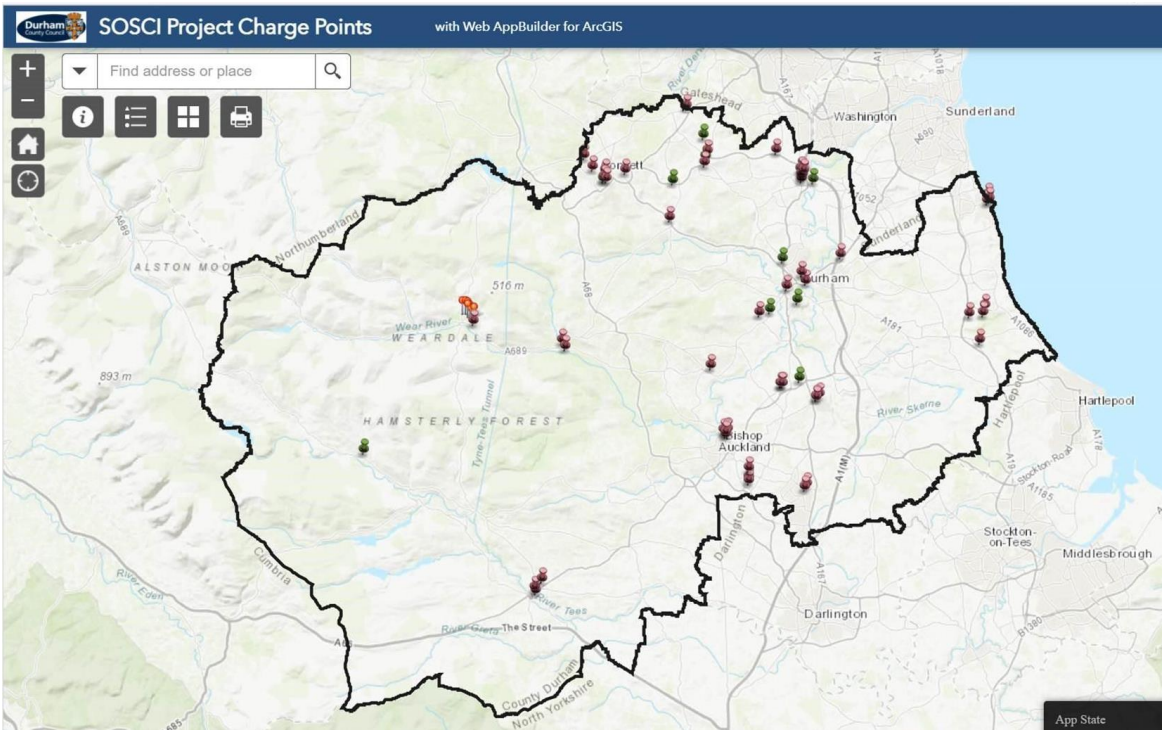
Maps make charging infrastructure real – and are a really important part of engaging with communities as zero carbon policies are implemented.

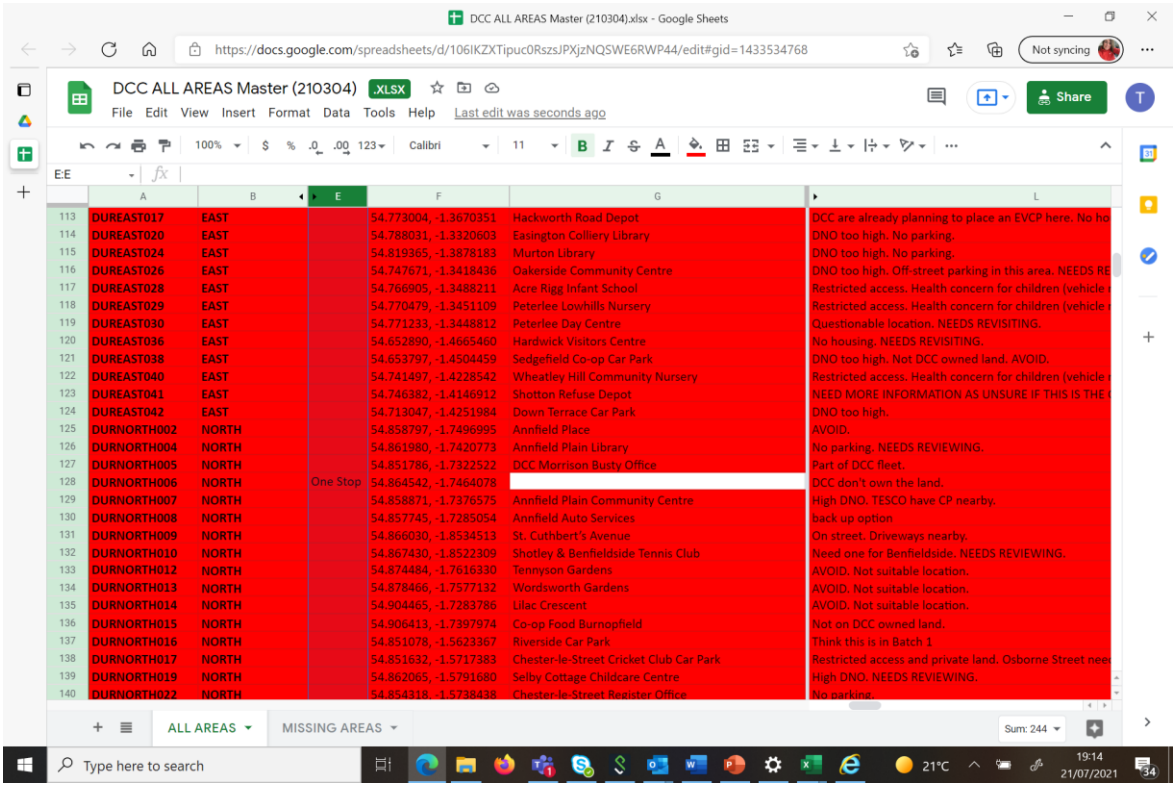
2. Durham Maps

In order to get a wide spread of EVCP around Durham and in particular, the rural areas, we have used a mapping system to plot EVCPs which enables us to foresee the gaps and areas where EVCPs are needed. At the outset of the project a full, layered map was created to gain an overview of County Durham as a whole. Below is a version with all layers showing: Wards, Population, existing chargepoints as shown on ZapMap, Population, DCC assets, DCC fleet, with proposed Batch 1 & 3. Each layer can be switched on/off as needed



The map below shows Batch 1A (in green) these EVCPs have been installed and are in operation. Red are current batches 2-5 which are proposed EVCPs for installation. Batch 6 and 7 are currently waiting to be added to the map. We expect 227 sockets of EVCP to be installed through SOSCI project. The red/orange pinpoints are those on the WEVA project. This webpage is posted on our Durham insight SOSCI webpage to allow comments from residents and potential users.





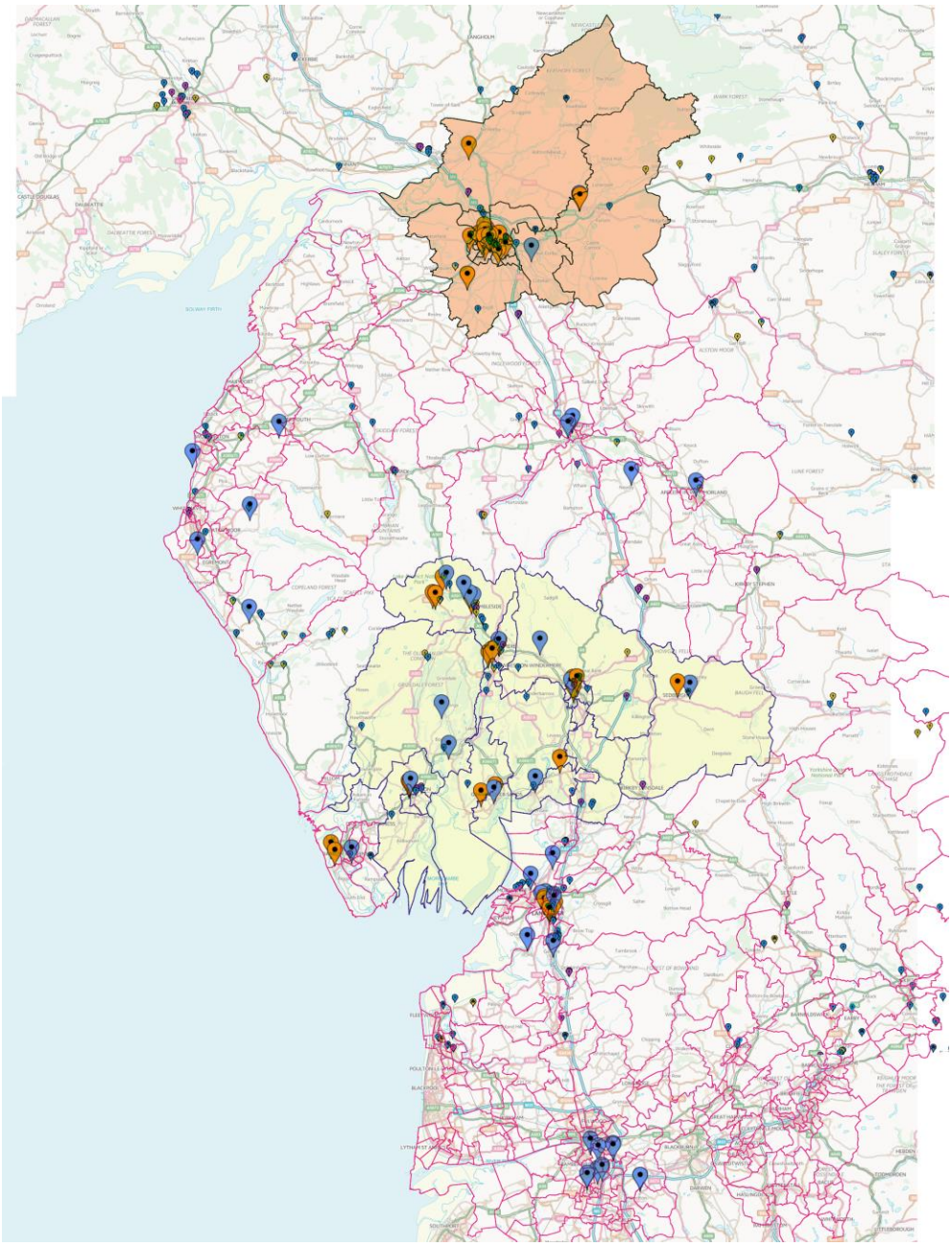
	A	B	E	F	G	L
113	DUREAST017	EAST		54.773004, -1.3670351	Hackworth Road Depot	DCC are already planning to place an EVCP here. No ho
114	DUREAST020	EAST		54.788031, -1.3320603	Easington Colliery Library	DNO too high. No parking.
115	DUREAST024	EAST		54.819365, -1.3878183	Murton Library	DNO too high. No parking.
116	DUREAST026	EAST		54.747671, -1.3418436	Oakerside Community Centre	DNO too high. Off-street parking in this area. NEEDS RE
117	DUREAST028	EAST		54.766905, -1.3488211	Acre Rigg Infant School	Restricted access. Health concern for children (vehicle
118	DUREAST029	EAST		54.770479, -1.3451109	Peterlee Lowhills Nursery	Restricted access. Health concern for children (vehicle
119	DUREAST030	EAST		54.771233, -1.3448812	Peterlee Day Centre	Questionable location. NEEDS REVISITING.
120	DUREAST036	EAST		54.652890, -1.4665460	Hardwick Visitors Centre	No housing. NEEDS REVISITING.
121	DUREAST038	EAST		54.653797, -1.4504459	Sedgefield Co-op Car Park	DNO too high. Not DCC owned land. AVOID.
122	DUREAST040	EAST		54.741497, -1.4228542	Wheatley Hill Community Nursery	Restricted access. Health concern for children (vehicle
123	DUREAST041	EAST		54.746382, -1.4146912	Shotton Refuse Depot	NEED MORE INFORMATION AS UNSURE IF THIS IS THE
124	DUREAST042	EAST		54.713047, -1.4251984	Down Terrace Car Park	DNO too high.
125	DURNORTH002	NORTH		54.858797, -1.7496995	Annfield Place	AVOID.
126	DURNORTH004	NORTH		54.861980, -1.7420773	Annfield Plain Library	No parking. NEEDS REVIEWING.
127	DURNORTH005	NORTH		54.851786, -1.7322522	DCC Morrison Busty Office	Part of DCC fleet.
128	DURNORTH006	NORTH	One Stop	54.864542, -1.7464078		DCC don't own the land.
129	DURNORTH007	NORTH		54.858871, -1.7376575	Annfield Plain Community Centre	High DNO. TESCO have CP nearby.
130	DURNORTH008	NORTH		54.857745, -1.7285054	Annfield Auto Services	back up option
131	DURNORTH009	NORTH		54.866030, -1.8534513	St. Cuthbert's Avenue	On street. Driveways nearby.
132	DURNORTH010	NORTH		54.867430, -1.8522309	Shotley & Benfieldside Tennis Club	Need one for Benfieldside. NEEDS REVIEWING.
133	DURNORTH012	NORTH		54.874484, -1.7616330	Tennyson Gardens	AVOID. Not suitable location.
134	DURNORTH013	NORTH		54.878466, -1.7577132	Wordsworth Gardens	AVOID. Not suitable location.
135	DURNORTH014	NORTH		54.904465, -1.7283786	Lilac Crescent	AVOID. Not suitable location.
136	DURNORTH015	NORTH		54.906413, -1.7397974	Co-op Food Burnopfield	Not on DCC owned land.
137	DURNORTH016	NORTH		54.851078, -1.5623367	Riverside Car Park	Think this is in Batch 1
138	DURNORTH017	NORTH		54.851632, -1.5717383	Chester-le-Street Cricket Club Car Park	Restricted access and private land. Osborne Street nee
139	DURNORTH019	NORTH		54.862065, -1.5791680	Selby Cottage Childcare Centre	High DNO. NEEDS REVIEWING.
140	DURNORTH022	NORTH		54.854318, -1.5738438	Chester-le-Street Register Office	No parking.

Above are rejected sites that we have been unable to install EVCPs. The reasons are: DNO costs are too high, restricted access, not DCC owned land etc. Some sites have been revisited and alternative approaches, such as connecting to the building electric supply have been tested out. It is hoped these can be connected in the future when the DNO improves the network in these areas.

3. Charge My Street Maps

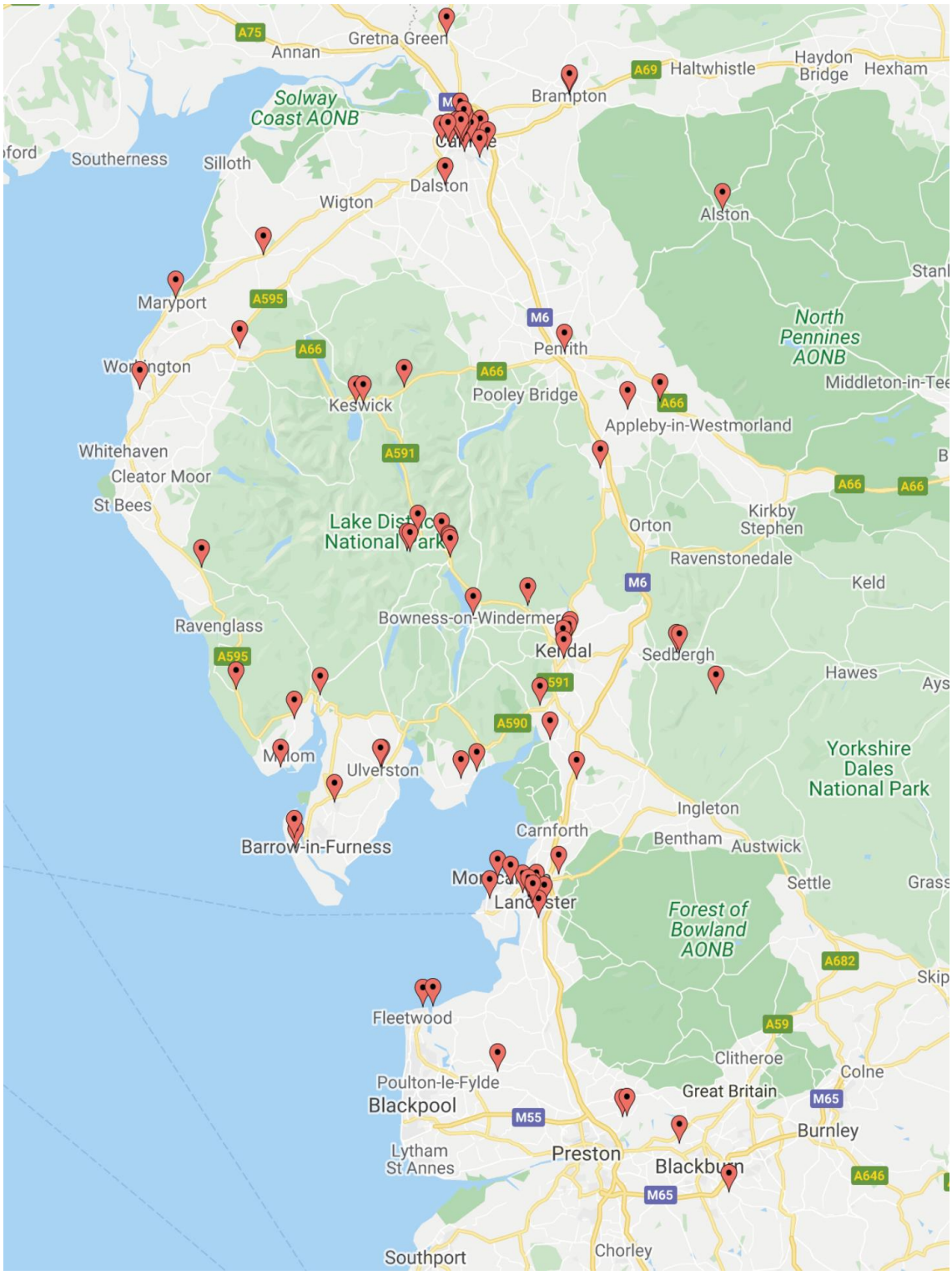
Cumbria and Lancashire Maps

A similar multi-layered map was created for our main target areas of Cumbria and North Lancashire. In this case it was to create more of a 'soft' overview as, apart from Carlise CC and SLDC, there were no considerations of LA property ownership and wards.

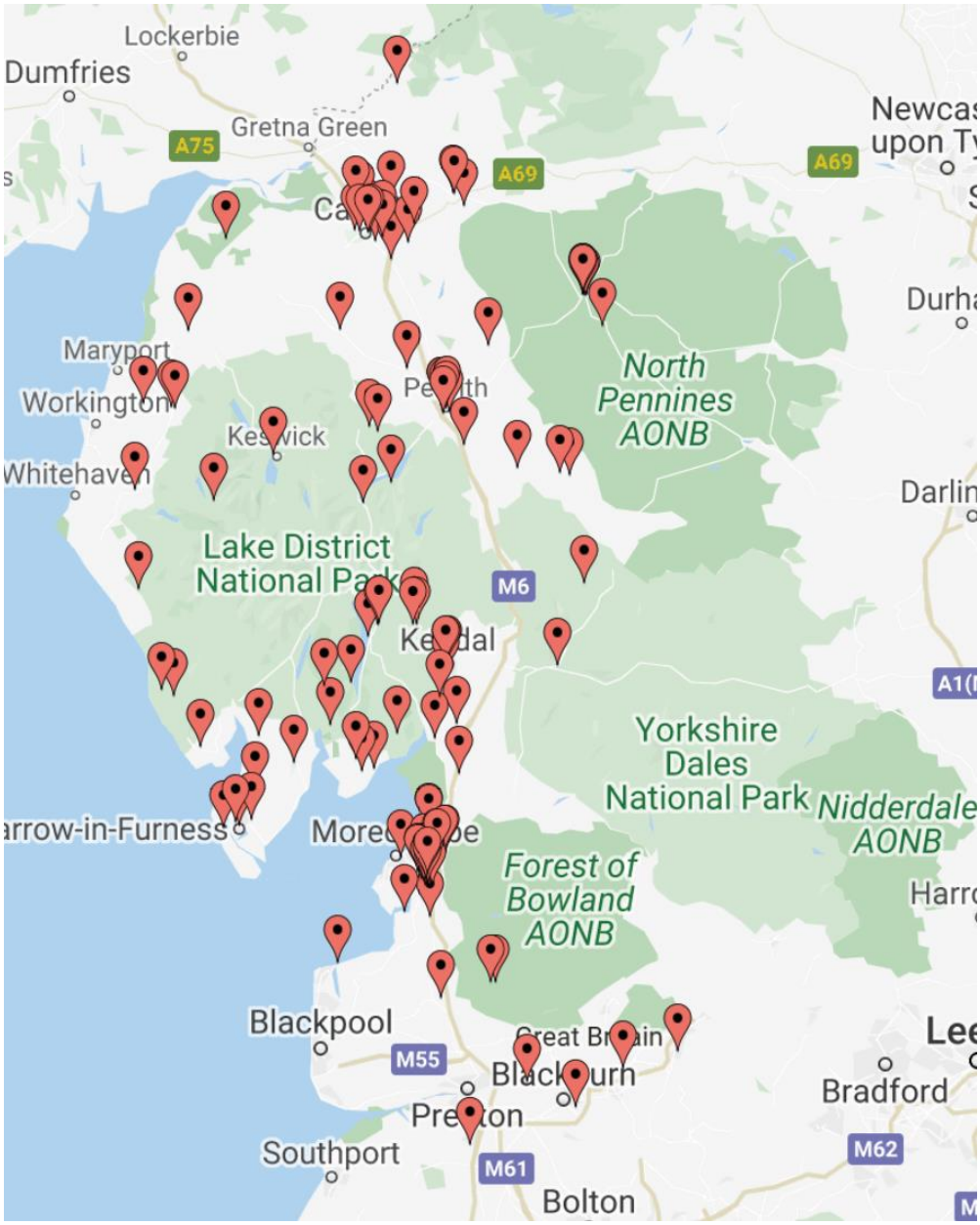


Planned & Installed SOSCI chargepoints

The map in the previous section was created in April 2020. This map is from July 2021 and shows where the Charge My Street network is/will be by project end. While a number of sites have dropped off, it demonstrates that the overview that informed our initial approaches has, by and large, been realised in terms of chargepoints in the ground. Even though our choices have been driven, in a large part, by what was available to us that was off the highway, there is a strong correlation with our original 'soft' strategy.



Rejected sites



At first glance it appears that we have had a large number of rejected sites - which is true, some 180 - but this map tells other stories. Outside of the LA-owned property, the sites have been suggested to us by local residents indicating, to great extent, of the buy-in of the local community. Comparing this with the previous two maps, not only does it show that we were looking in the right places, it demonstrates that as awareness increased, so did suggestions in those areas. In the areas with most suggestions this allowed us to compare sites and choose the ones that fitted the SOSCI objectives and Charge My Street's future viability the best.

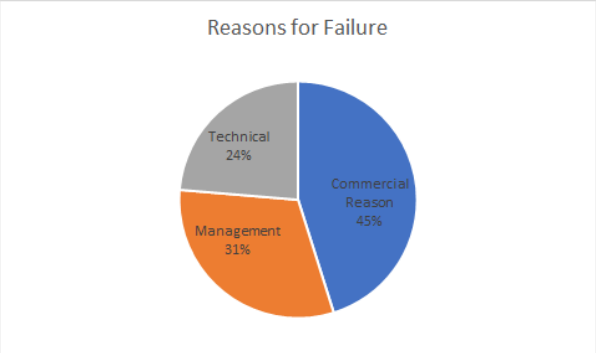
4. Rest of the UK Maps

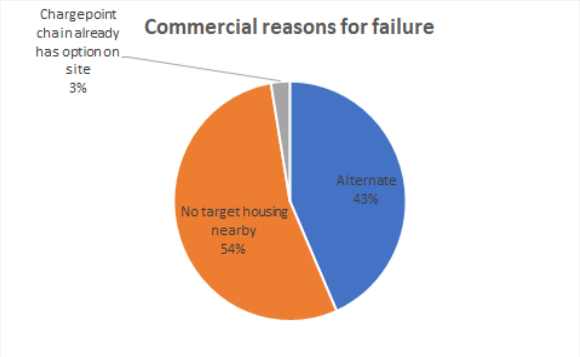
Planned & Installed SOSCI chargepoints

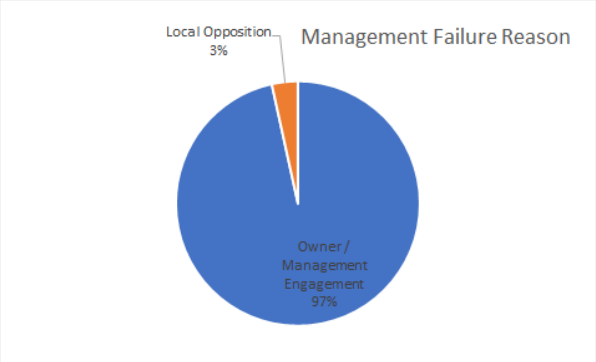
Rejected sites

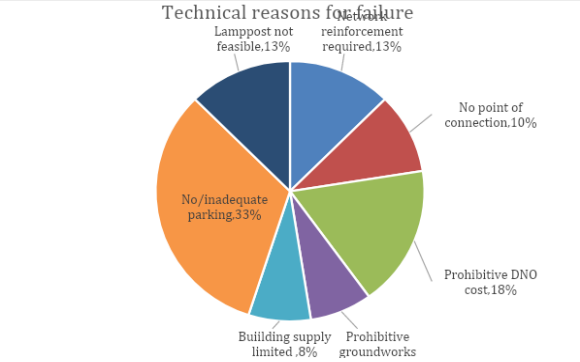
While we have installed at one location out of our area, and will do at several more, with our limited resources it has meant that we haven't been able to fully commit to many more. National awareness has grown of Charge My Street's community model which has led to many suggestions from all over the country. The map on the right shows merely those that were rejected - we have a number of other sites that, in time, we may be able to revisit.

An overview of all WOP rejected sites:



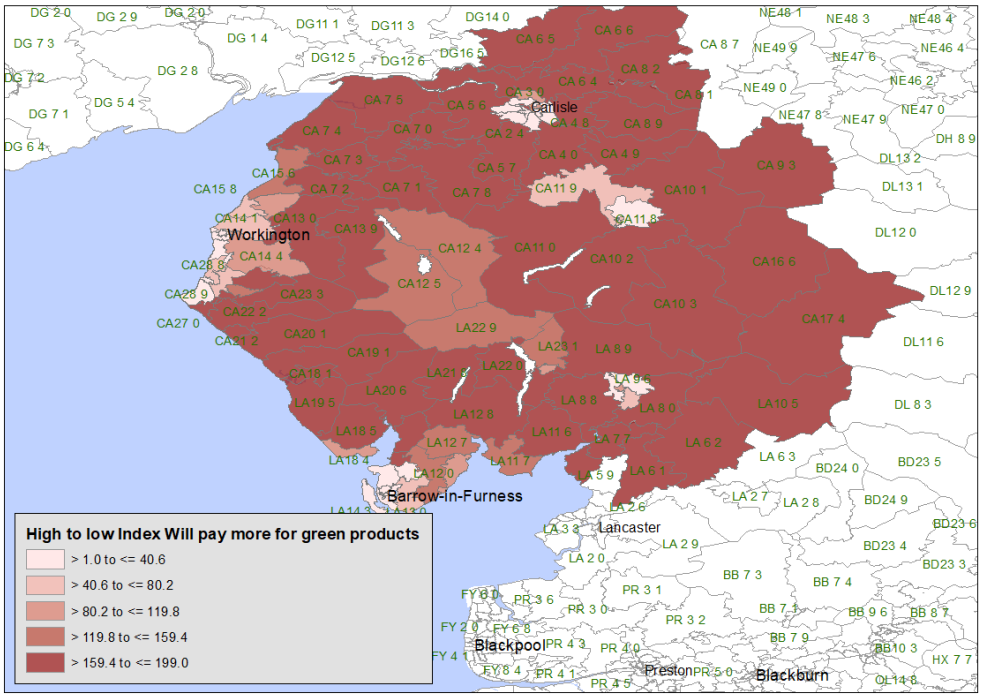






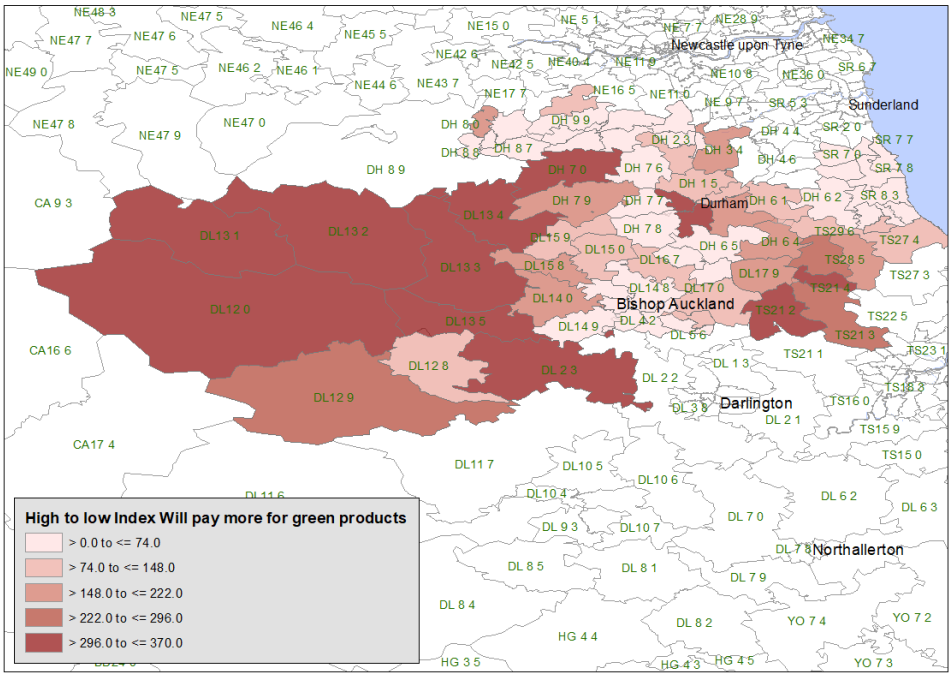
Site assessments

When assessing locations for potential chargepoints across the north of England, we have used data gathered regarding residents' interest in owning green technology, such as an electric vehicle. The two maps below of Cumbria and County Durham show residents who are willing to pay a premium for green technology.



Map of Cumbria

Interestingly, areas in the centre of the Lake District National park are most densely populated with residents more likely to pay for premium green products, in comparison to areas such as the centre of Carlisle and towns such as Barrow-In-Furness.

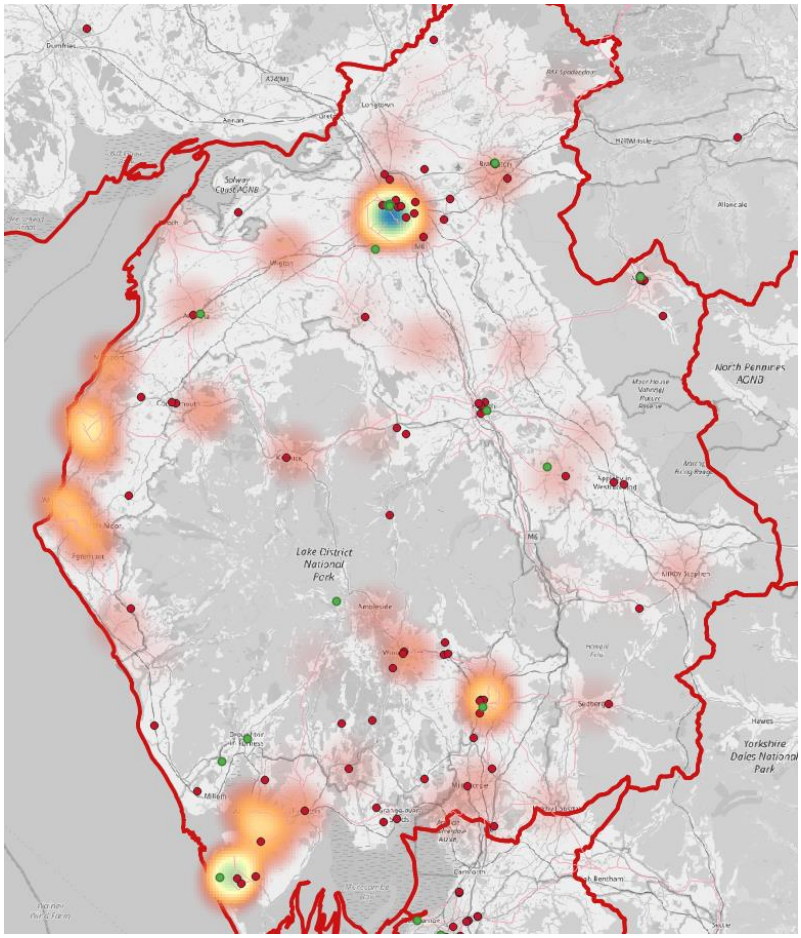


Map of County Durham

Rural areas of County Durham are more likely to spend more on green products, in comparison to the centre of Durham. However, this does not mean these residents are likely to have access to off-street parking so installations of chargepoints are essential for the adoption of electric vehicles in those areas.

ENWL EV projections

The heat map is based on ENWL projections for EV usage in 2023 which is part of a national analysis carried out by DNOs. These are centred around their primary substations but it indicates which primary substation they are expecting is going to be drawing a high demand.



5. Conclusions

The maps have supported the project team to manage the delivery of the project equitably – helping ensure that chargepoints are distributed evenly across the area. The use of maps has enabled two different approaches between East and West. In the East, where DCC ownership of land is established, strategy can be informed by population and geopolitical factors - the top-down approach. Ideally in the future DNO connection access and cost could be mapped with this to locate the best locations. This has been challenging because the source data from the NPG AutoDesign tool is “not up to it” as highlighted by the regular disparity between the AutoDesign results and the result of actual network surveys.

In Durham, we have used the 70 council wards and tried to give each council ward an EVCP. To support the infrastructure, we have won funding from OZEV to install 50 additional EV charge points to provide more parishes with a charge point.

In the West, mapping has confirmed that we have been looking in the right areas, driven by community suggestions - the bottom-up approach, but mixed with some sites chosen by the Local Authorities. Largely speaking, Charge My Street has to take what sites are available, but where there are options then informed choices can be made. As to which of the two approaches works best, one suspects a mixture, but this will be borne out by the actual usage data of the chargepoints over the coming years.