

EQUALITY IMPACT ASSESSMENT AND ANALYSIS (EqIAA)

Electric Vehicle (EV) Charging Strategy

SECTION 1 - INTRODUCTION

South Gloucestershire Council's Climate Emergency Strategy¹ provides a road map to achieving carbon neutrality by 2030. One of the key areas of focus is the decarbonisation of our transport sector, switching from the use of fossil fuels to carbon-free and renewable energy sources as quickly as possible. It is essential to cut down on greenhouse gas emissions such as carbon dioxide (CO₂) to stem the advance of climate change.

Our overall transport vision for South Gloucestershire is based on sustainable transport. There are multiple benefits of sustainable transport to individuals, places, and the environment; we want to support reduced car use across our area in favour of public transport and active travel. However, we also understand that for certain activities and individuals, cars and vans remain the most viable mode of transport. Moving these vehicles from petrol and diesel to ultra-low emission vehicles (ULEVs) is critical to reducing the impact of those journeys and help us achieve our air quality ambitions as part of our Climate Emergency Strategy.

This strategy focuses on the role of electric vehicles (EVs) to deliver this vision, and the interventions we will be taking to support residents' transition to electric. As EVs and EV charging are very much emerging technologies it is important for us to be able to adapt to changes and ensure a flexible approach to delivery of the strategy.

The Purpose of the Strategy:

The draft EV Charging Strategy establishes the role of South Gloucestershire Council in ensuring that our residents and visitors, who need to drive cars (where cycling, walking or public transport is not practicable), are supported to do so in zero emitting vehicles.

We recognise that reliable and accessible charging infrastructure is essential to encourage EV ownership. By adopting the EV Charging Strategy, South Gloucestershire Council demonstrates our commitment to supporting our residents and their journey towards a zero-carbon² future.

Our key strategic focus is to ensure the vast majority³ of households in South Gloucestershire are within one mile of reliable and accessible charging infrastructure.

Our strategy seeks to complement the growth in EV charging provision in the private sector and help to fill gaps in the existing network. These gaps define the role of South Gloucestershire Council in supporting the distribution of charging infrastructure

¹ <https://www.southglos.gov.uk/environment/climate-change/climate-emergency/>

² Causing or resulting in no net release of carbon dioxide into the atmosphere.

³ Majority refers to 92% of households within 1 mile of a council-owned charge point. Current baseline suggests that 62% of households are within 1 mile. Analysis suggests that 92% of households could be brought into the 1-mile catchment with an additional 24 sites provided (*On-street Residential Charging Scheme – 8, Climate Emergency Scheme – 5, 11 Community Hub Scheme*)

The draft EV Charging Strategy document seeks to complement other strategies developed by South Gloucestershire Council to support the decarbonisation of the transport sector. The actions within the strategy focus on the short and medium term and will be reviewed regularly to ensure adaptability to changes in technology, trends in mobility and financial considerations.

The Objectives of the Strategy are as follows:

Through engagement with stakeholders and review of relevant data, strategies, and policies the following objectives of the EV strategy have been defined:

1. Enhance social equity and inclusion: If left to the market, EV charging infrastructure is unlikely to be fairly or evenly distributed. South Gloucestershire Council has a key role to intervene to support rural locations and offer affordable charging solutions in lower income residential areas.
2. Improve air quality: Support the replacement of ICE vehicles with EVs to help reduce local air pollution.
3. Tackle the Climate Emergency: Despite the challenges associated with the carbon cost of producing EVs, it is generally accepted that because of their much higher energy efficiency and the decarbonisation of grid electricity they provide a better long-term solution than ICE vehicles. They help drive the decarbonisation of the transport sector and will contribute to our goal to achieve carbon neutrality by 2030. Over time we also expect the energy stored in EV batteries to help smooth out the peaks and troughs in electricity supply and demand as more and more of our electricity is generated renewably.
4. Support sustainable economic development: The growth of EVs could unlock numerous economic benefits both directly and indirectly, including by helping make our electricity system more flexible, efficient, and cheaper to build and operate.
5. Lead by example: To inform residents and lead by example by using EV technology to reduce the environmental impact of our day-to-day operations.
6. Improve accessibility, safety, and reliability: Ensure that EV charging infrastructure meets the needs of a wide range of people through the provision of accessible, safe and reliable charging infrastructure.

It should be noted that this EqIAA is focused on the provision of charging points, not electrical vehicles themselves.

SECTION 2 - RESEARCH, ENGAGEMENT AND CONSULTATION

A 12-week consultation was held from the 11 July 2022 to 3 Oct 2022⁴.

All details about the strategy, including the strategy document, Equalities Impact Assessment and Easy Read version, were held on our consultation webpage - [Electric Vehicles Charging - Draft Strategy Consultation - South Gloucestershire Online Consultations \(southglos.gov.uk\)](https://southglos.gov.uk/electric-vehicles-charging-draft-strategy-consultation)

We hosted an online survey via our consultation website where downloadable printed copies were also available on request. Copies of the survey were also made available at libraries and One-Stop shops.

To support our commitment to involve everyone in our communities, particularly those with protected characteristics, we also held online and face-to-face events where members and the general public were invited to learn more about the strategy, provide their feedback and ask questions. In addition to this, we also visited The Equalities Voice Group, The Over 50's forum and The Southwest EV Owners Group.

Overall, we received a total of 128 responses from the general public, 1 from a voluntary, community sector organisation, 7 from a Parish/Town Council or local councillor, and 4 'other'.

There was a 39%/52% female/male split. Nearly half of all respondents (55%) were over the age of 55. 25% were aged 35 to 54. There were no responses from those aged under 24. Of those who stated their ethnicity, 113 (83%) were white British and 4 (3.6%) people from a black, Asian or minority ethnic background. 30 people (11%) stated they were disabled.

Online Survey Results

Note:

Areas highlighted **GREEN** are those where the proportion of people with this characteristic is 10% or more above the proportion of all respondents.

Areas highlighted **RED** are those where the proportion of people with this characteristic is 10% or more below the proportion of all respondents.

Q1. To what extent do you agree or disagree with this vision?

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
<i>Base</i>	630	35	61	35	51	69	23	103	5	112	118	1	2	1
AGREE	69%	83%	67%	60%	75%	65%	69%	71%	80%	70%	70%	100%	100%	100%
DISAGREE	21%	12%	24%	26%	18%	25%	18%	22%	20%	20%	20%	0%	0%	0%

⁴ Due to the 10 day period of national mourning following the death of Queen Elizabeth II, submissions from stakeholders were accepted after this date.

Q3.To what extent do you agree or disagree with the principle of SGC providing EV chargers at Community Hubs?

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	630	35	61	35	52	68	23	103	5	112	118	1	2	1
AGREE	77%	95%	74%	63%	77%	76%	74%	78%	80%	79%	77%	100%	100%	100%
DISAGREE	15%	6%	13%	28%	18%	15%	13%	16%	20%	13%	14%	0%	0%	0%

Q5. If you own, or intend to own, an EV, how important are each of the following factors in determining whether or not you would use a community charging hub?

Speed of charge available (i.e. rapid or fast)

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	606	34	60	32	48	68	22	99	5	107	113	1	2	1
IMPORTANT	90%	83%	94%	87%	92%	88%	91%	91%	100%	90%	90%	100%	100%	0%
NOT IMPORTANT	3%	9%	2%	3%	2%	4%	0%	4%	0%	3%	3%	0%	0%	100%

Guaranteed availability of charging point

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	611	34	60	33	49	68	22	100	5	108	115	1	2	1
IMPORTANT	93%	88%	95%	91%	96%	91%	96%	93%	100%	94%	94%	100%	100%	0%
NOT IMPORTANT	1%	0%	2%	6%	0%	1%	0%	2%	0%	0%	1%	0%	0%	0%

Distance from home

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	602	34	60	31	49	66	22	98	5	107	113	1	2	1
IMPORTANT	82%	74%	82%	83%	80%	83%	82%	84%	80%	84%	83%	0%	100%	0%
NOT IMPORTANT	7%	9%	7%	6%	4%	9%	5%	7%	20%	7%	5%	100%	0%	100%

Cost of session

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	607	34	60	32	49	67	22	99	5	108	114	1	2	1
IMPORTANT	86%	85%	89%	79%	85%	88%	86%	87%	80%	87%	87%	0%	100%	100%
NOT IMPORTANT	2%	0%	2%	6%	2%	0%	5%	2%	0%	3%	3%	0%	0%	0%

Security

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	595	34	58	31	49	66	22	96	5	106	112	1	2	1
IMPORTANT	85%	73%	89%	90%	92%	81%	82%	87%	80%	86%	87%	0%	100%	0%
NOT IMPORTANT	3%	9%	0%	3%	0%	5%	9%	2%	0%	3%	3%	0%	0%	0%

Q10. What is your biggest concern in switching to an EV? Tick one box only.

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
<i>Base</i>	328	15	25	26	31	31	15	52	3	59	61	1	1	-
Purchase cost	44%	40%	56%	42%	48%	39%	67%	37%	33%	44%	44%	100%	-	-
Running and maintenance cost	5%	-	4%	8%	3%	6%	-	6%	-	5%	5%	-	-	-
Vehicle range	22%	13%	16%	31%	13%	32%	20%	23%	-	24%	23%	-	100%	-
Access to charger at home	10%	20%	8%	4%	10%	10%	7%	12%	-	10%	10%	-	-	-
Access to charger at your main trip destination	8%	13%	8%	4%	13%	3%	-	12%	67%	5%	8%	-	-	-
Other	11%	13%	8%	12%	13%	10%	7%	12%	-	12%	10%	-	-	-

Q13. Please rate you likelihood of using the following charging locations to charge an EV should you have access to one now or in the future?

Home charging

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
<i>Base</i>	620	35	60	34	51	67	23	101	5	110	117	1	2	1
LIKELY	90%	83%	93%	88%	88%	91%	96%	88%	80%	92%	90%	100%	100%	100%
UNLIKELY	9%	17%	5%	9%	12%	6%	4%	10%	20%	7%	9%	0%	0%	0%

Fast charging at supermarkets, leisure facilities etc.

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
<i>Base</i>	620	35	61	33	51	67	23	101	5	110	117	1	2	1
LIKELY	77%	86%	77%	64%	84%	73%	73%	79%	100%	80%	77%	100%	100%	100%
UNLIKELY	21%	15%	20%	33%	14%	25%	22%	20%	0%	20%	20%	0%	0%	0%

Charging at the workplace

	Total	Age			Sex		Disability		Ethnicity			UK Armed Forces		
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
<i>Base</i>	610	35	60	32	51	65	23	99	5	108	115	1	2	1
LIKELY	51%	86%	56%	3%	49%	51%	34%	53%	60%	50%	53%	0%	0%	100%
UNLIKELY	31%	6%	28%	62%	41%	25%	39%	30%	20%	31%	31%	0%	0%	0%

On-street charging

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
<i>Base</i>	607	34	60	32	51	65	23	98	5	108	115	1	2	1
LIKELY	38%	59%	37%	16%	47%	31%	44%	36%	60%	37%	39%	0%	0%	0%
UNLIKELY	55%	35%	60%	69%	48%	61%	48%	56%	40%	57%	53%	100%	100%	100%

Charging at visitor attractions of destinations

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	610	35	59	33	51	65	23	99	5	108	115	1	2	1
LIKELY	75%	94%	78%	48%	78%	73%	69%	76%	100%	76%	76%	100%	100%	100%
UNLIKELY	22%	6%	20%	42%	20%	25%	22%	21%	0%	22%	21%	0%	0%	0%

Council-owned car parks

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	620	35	61	33	51	67	23	101	5	110	117	1	2	1
LIKELY	64%	74%	64%	45%	70%	55%	70%	64%	60%	67%	62%	100%	100%	100%
UNLIKELY	31%	26%	29%	42%	26%	37%	22%	31%	40%	29%	31%	0%	0%	0%

Park and Ride

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	620	35	61	33	51	67	23	101	5	110	117	1	2	1
LIKELY	45%	57%	43%	36%	53%	37%	52%	45%	60%	45%	46%	100%	0%	0%
UNLIKELY	49%	43%	49%	54%	42%	56%	39%	50%	40%	49%	48%	0%	100%	100%

Community Hubs

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	620	35	61	33	51	67	23	101	5	110	117	1	2	1
LIKELY	57%	68%	62%	36%	58%	53%	60%	57%	60%	59%	57%	100%	100%	100%
UNLIKELY	37%	29%	31%	54%	38%	40%	30%	39%	40%	37%	38%	0%	0%	0%

Rapid Charging Hubs

	Total	Age			Sex		Disability		Ethnicity		UK Armed Forces			
		18 to 44	45 to 64	65 and over	Female	Male	Disabled	Non-disabled	Minority ethnic groups	White British	No	Yes - currently serving	Yes - previously served in Regular Armed Forces	Yes - previously served in Reserve Armed Forces
Base	620	35	61	33	51	67	23	101	5	110	117	1	2	1
LIKELY	77%	85%	77%	63%	72%	80%	74%	78%	80%	79%	77%	100%	100%	100%
UNLIKELY	19%	15%	15%	30%	22%	14%	22%	17%	20%	17%	17%	0%	0%	0%

Key Feedback

Following the outcome of the survey, there were a number of key equalities concerns highlighted by respondents.

- Inadequate parking designs inhibiting access to EV charging points for disabled users
- Removal of Blue Badge parking bays
- Personal Safety
- High purchase cost of electric vehicles
- Trip Hazards
- Rural Isolation
- Accessibility of charging infrastructure -especially for disabled people and older people

South Gloucestershire Equalities Voice

To prepare the EV Charging Strategy we attended a meeting with the South Gloucestershire Equalities Voice group on the 13 July 2022 to specifically discuss any equalities implications arising from our proposals. Findings from the group showed that there were numerous equality challenges and opportunities associated with electric vehicles and the associated charging infrastructure.

Challenges

- Over reliance on private cars for blue badge holders and disabled users, as this may be the only viable mode of transport.
- High purchase cost and limited range of wheelchair accessible electric vehicles limiting the ability for many consumers to transition.
- Accessibility of the associated charging infrastructure notably, the prevalence of obstacles such as the lack of dropped curbs, heavy and stiff cables and overly technical/unclear instructions, all of which creates significant barriers to usage for disabled drivers.

Opportunities

- Introduction of electric vehicle car club bays to enhance social inclusion.
- Provision of accessible charging bays for wheelchair users.
- Improved communication of accessible charging points.
- Improvements to local air quality.
- Consider innovative approaches to improving the physical accessibility of the charging infrastructure.

Overall, the discussions demonstrated that the proposals captured in the EV Charging Strategy presented opportunities to improve the accessibility of public charging points for all residents in South Gloucestershire. However, for some particular people with disabilities and people from Black, Asian and Minority Ethnic communities, there are likely to be further barriers which we need to understand and respond to. There will need to be further engagement to explore what we do not currently know and going forward a commitment to diverse and continued engagement on individual implementation projects as they progress.

The Key points raised throughout these discussions are covered in the Actions section of this EqIAA.

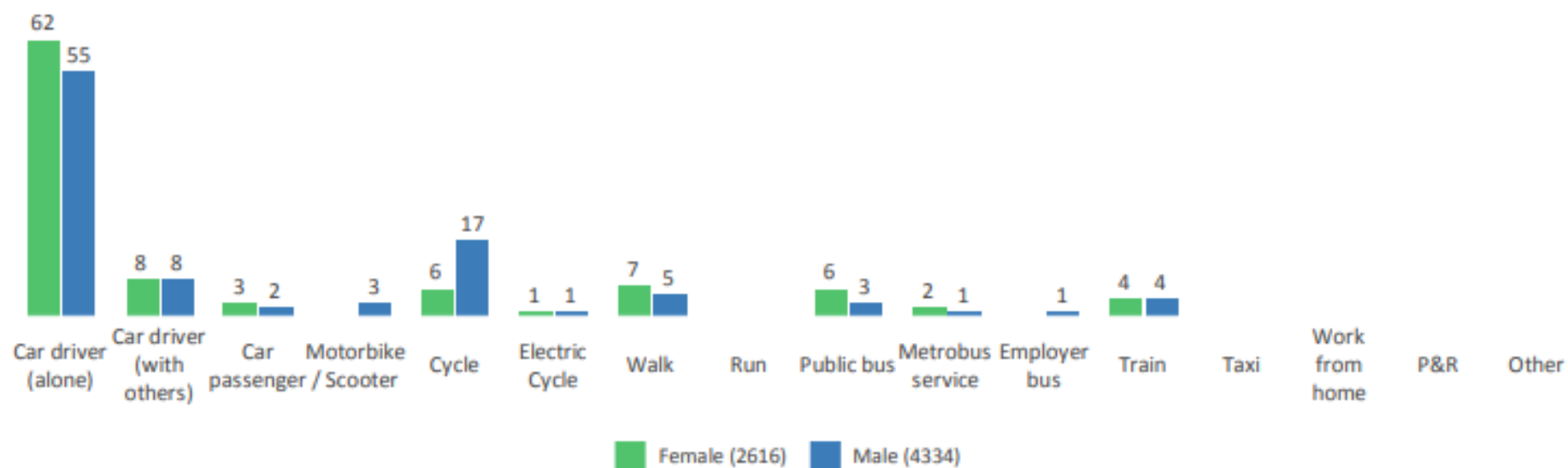
Research

The Strategy explores several issues around EV charging and the ongoing transport challenges with South Gloucestershire. Multiple sources of data and information have been used to inform the development of our approach to implementing EV charging infrastructure. The Department for Transport (DfT) provides numerous statistical datasets, many available at national, regional and local authority level. The council have also sought further expertise from industry specialists such as WSP and Energy Savings Trust.

To explore the challenges affecting groups with protected characteristics we have also utilised data from the TravelWest Travel to Work survey. This survey, carried out annually across the West of England, provides valuable information about journey characteristics across the region.

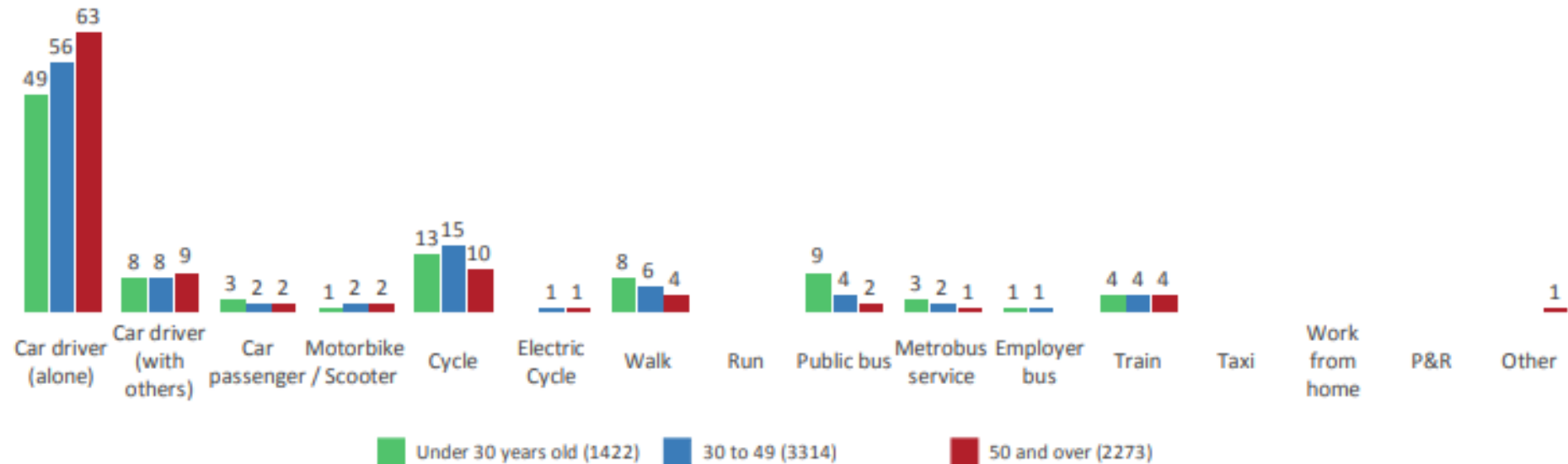
Following the 2020 survey, the below graphs capture the main modes of travel across South Gloucestershire by groups with protected characteristics:

Figure 1: Main Mode of Travel across South Gloucestershire disaggregated according to Sex (%)



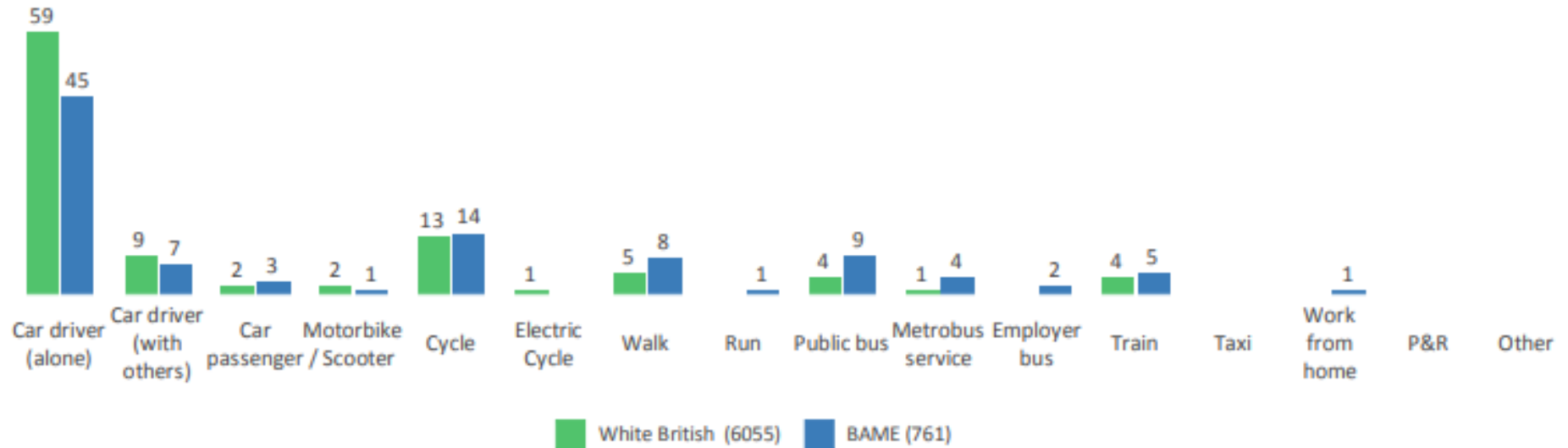
	Car driver (alone)	Car driver (with others)	Car passenger	Motorbike / Scooter	Cycle	Electric Cycle	Walk	Run	Public bus	Metrobus service	Employer bus	Train	Taxi	Work from home	P&R	Other
Female (2616)	1621 62%	220 8%	86 3%	3 0%	156 6%	16 1%	177 7%	2 0%	154 6%	55 2%	9 0%	93 4%	2 0%	7 0%	4 0%	11 0%
Male (4334)	2367 55%	353 8%	68 2%	110 3%	739 17%	28 1%	227 5%	10 0%	142 3%	51 1%	23 1%	175 4%	4 0%	20 0%	2 0%	15 0%

Figure 2: Main Mode of Travel across South Gloucestershire disaggregated according to age group (%)



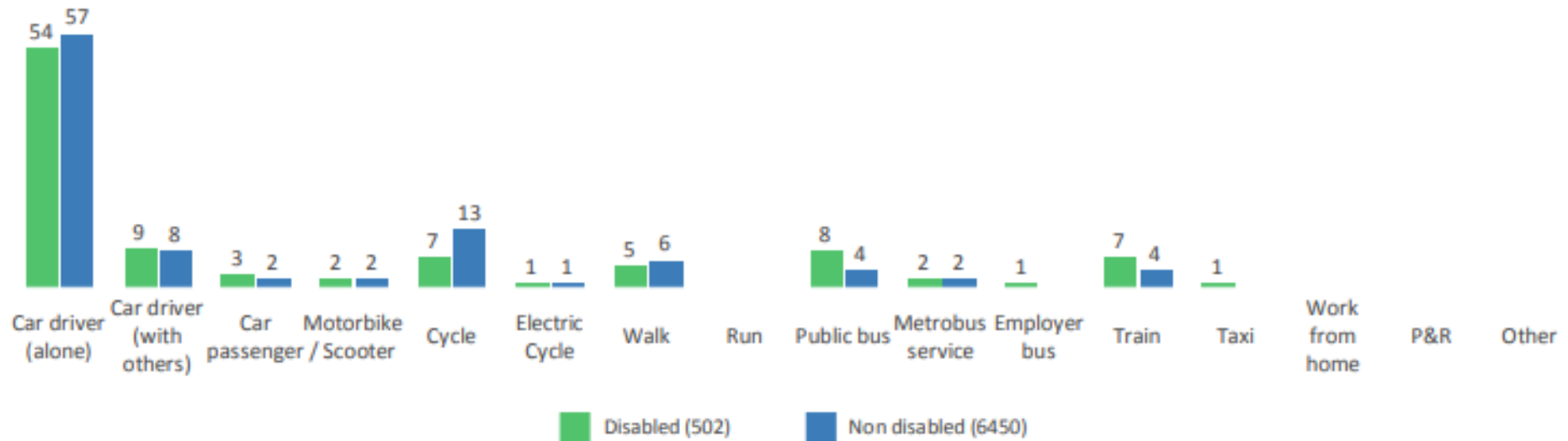
	Car driver (alone)	Car driver (with others)	Car passenger	Motorbike / Scooter	Cycle	Electric Cycle	Walk	Run	Public bus	Metrobus service	Employer bus	Train	Taxi	Work from home	P&R	Other
Under 30 years old (1422)	691 49%	116 8%	46 3%	19 1%	183 13%	1 0%	115 8%	1 0%	132 9%	42 3%	14 1%	58 4%	- -	1 0%	2 0%	1 0%
30 to 49 (3314)	1870 56%	261 8%	69 2%	52 2%	491 15%	26 1%	201 6%	9 0%	120 4%	52 2%	17 1%	120 4%	1 0%	13 0%	3 0%	9 0%
50 and over (2273)	1443 63%	209 9%	36 2%	46 2%	237 10%	18 1%	89 4%	3 0%	46 2%	15 1%	3 0%	95 4%	5 0%	11 0%	1 0%	16 1%

Figure 3: Main Mode of Travel across South Gloucestershire disaggregated according to ethnicity (%)



	Car driver (alone)	Car driver (with others)	Car passenger	Motorbike / Scooter	Cycle	Electric Cycle	Walk	Run	Public bus	Metrobus service	Employer bus	Train	Taxi	Work from home	P&R	Other
White British (6055)	3564 59%	516 9%	131 2%	105 2%	766 13%	42 1%	333 5%	9 0%	221 4%	74 1%	18 0%	223 4%	3 0%	22 0%	6 0%	22 0%
BAME (761)	345 45%	57 7%	20 3%	7 1%	105 14%	3 0%	61 8%	4 1%	68 9%	29 4%	16 2%	38 5%	2 0%	4 1%	-	2 0%

Figure 4: Main Mode of Travel across South Gloucestershire disaggregated according to disability (%)



	Car driver (alone)	Car driver (with others)	Car passenger	Motorbike / Scooter	Cycle	Electric Cycle	Walk	Run	Public bus	Metrobus service	Employer bus	Train	Taxi	Work from home	P&R	Other
Disabled (502)	270 54%	44 9%	17 3%	11 2%	34 7%	4 1%	25 5%	- -	38 8%	11 2%	6 1%	33 7%	6 1%	2 0%	- -	1 0%
Non disabled (6450)	3705 57%	531 8%	132 2%	104 2%	868 13%	39 1%	380 6%	13 0%	259 4%	99 2%	28 0%	237 4%	1 0%	24 0%	6 0%	24 0%

These surveys identify some key differences in the mode of travel between the different groups. Notably, participants from minority ethnic groups and disabled participants were more likely to use public transport.

The overall transport vision for South Gloucestershire is to prioritise sustainable transport options. As such, the council remains committed to reducing car use overall across the district in favour of active travel and public transport options. However, it is recognised that in rural areas with limited public transport services, EVs have an important role to play in the decarbonisation of transport. Therefore, when trips need to be made by private vehicle, we want them to be made by EV.

Access to Charging

A key focus of the strategy is to ensure equality of access to charging for all residents within South Gloucestershire. Therefore, we have sought to ensure the vast majority of households in South Gloucestershire are within one mile of reliable and accessible charging infrastructure.

It is recognised that in rural areas, most properties will have access to their own off-street parking facilities and are less likely to be reliant on public charging infrastructure. However, it is also acknowledged that rural communities can become isolated if there is limited public transport and/or access to charging facilities. As such, the council will aim to work with communities to ensure that less-populated rural areas are not excluded from EV use due to lack of infrastructure and will seek to identify funding sources for charge points in more remote areas where the private sector may be less likely to install.

Building on our successes through the Revive network⁵, we plan to adopt a cautious approach to investing our limited capital funds by plugging the gaps not met by the private sector with a specific focus of the strategy on rural areas. Given the potential lower reliance on public charging infrastructure in rural areas, the Council will monitor the usage statistics of charge points and use this in informing future decisions and strategy. In addition to monitoring the usage statistics, we will also meet with our equalities partners (in particular the South Gloucestershire Disability Equality Network and the South Gloucestershire Over 50s Forum) in order to obtain feedback in relation to issues arising, such as accessibility of infrastructure.

This strategy commits the council to promoting access to affordable and fair EV charging infrastructure which will support the alleviation of poverty and deprivation by improving access to employment opportunities and skills whilst creating healthier communities. Over the past few years, we have installed charging infrastructure in our public car parks in areas with lower income households. Our aim is to ensure equal access to charging facilities, no matter background or circumstance.

⁵ This is a network of EV charging points which are managed and operated by the West of England authorities (Bristol City Council, Bath & North East Somerset Council, North Somerset Council and South Gloucestershire Council)

Impact of Proposed Interventions

The tables below shows consideration of the impacts of proposed interventions on Protected Characteristic groups.

Table 1: Assessment of impact on protected groups due to install of charging infrastructure

Protected Group	Summary of Impact
Age	<p>There is potential for negative impact arising from difficulties, especially for older people, around plugging in cables regarding dexterity and strength.</p> <p>There is potential for negative impact resulting from on-street electric vehicle charge points as trailing cables can pose a trip hazard (relevant to all age groups).</p> <p>Advances in technology can be less accessible for some and it is identified that related difficulties in activities such as setting up user accounts, using charging points themselves, have the potential to result in negative impacts.</p>
Disability	<p>There are potential benefits for those with conditions that affect breathing as air quality is improved with switch from ICE (Internal combustion engine) to BEV (Battery electric vehicle).</p> <p>Increased electric vehicles will mean less noise pollution making things more ambiently pleasant but problematic for those who use sound for safety.</p> <p>There is potential for negative impact resulting from on-street electric vehicle charge points as trailing cables can pose a trip hazard and/or a barrier to many disabled people (this includes for people with a wide range of disabilities such as people with physical impairments, people who are blind/have low vision, people who may have a carer with them). Areas where there are restricted widths and uneven road surfaces can contribute to exacerbating issues experienced by people with a wide range of impairment types by increasing barriers to accessibility.</p> <p>As well as the potential for trip hazards and for reducing space resulting in barriers to many disabled people, it has been identified that there is potential for negative impact regarding safety for wheelchair and mobility scooter users as, even with installation of such features as cable protectors, surfaces will be uneven, potentially resulting in unsafe practices such as manoeuvring around these potential obstacles into traffic flow areas.</p> <p>Advances in technology can be less accessible for some and it is identified that related difficulties in activities such as setting up user accounts, using charging points themselves have the potential to result in negative impacts, for example, for people with learning disabilities.</p> <p>There is potential for negative impact arising from difficulties, especially for people with a range of disabilities (e.g. upper mobility, dexterity etc.) around plugging in cables.</p>

	<p>The council is committed to removing barriers to accessibility and are acutely aware of the challenges faced by disabled people. As part of our efforts to promote access for disabled users, we have sought to ensure that the EV charging bays are wide enough to accommodate blue badge holders and families (parent/child). In most circumstances, there will be two EV charging bays across a minimum of three standard parking bays making them the same size as a standard disabled parking.</p>
Gender Reassignment	<p>At this stage, impacts in respect of this Protected Characteristic are identified as being 'neutral' as none have been identified which have the potential to disproportionately affect people within this 'group'.</p>
Marriage & Civil Partnership	<p>At this stage, impacts in respect of this Protected Characteristic are identified as being 'neutral' as none have been identified which have the potential to disproportionately affect people within this 'group'.</p>
Pregnancy & Maternity	<p>There is potential for negative impact resulting from on-street electric vehicle charge points as trailing cables can pose a trip hazard and/or a barrier to people with a pram/pushchair. Areas where there are restricted widths and uneven road surfaces can contribute to exacerbating issues experienced by people with a pram/pushchair. In addition, it has been identified that there is potential for negative impact regarding safety for people with a pram/pushchair as, even with installation of such features as cable protectors, surfaces will be uneven, potentially resulting in unsafe practices such as manoeuvring around these potential obstacles into traffic flow areas. These issues also relate to those who are pregnant and who may experience less mobility as a result of pregnancy.</p>
Race	<p>At this stage, impacts in respect of this Protected Characteristic are identified as being 'neutral' as none have been identified which have the potential to disproportionately affect people within this 'group'.</p>
Religion or Belief	<p>At this stage, impacts in respect of this Protected Characteristic are identified as being 'neutral' as none have been identified which have the potential to disproportionately affect people within this 'group'.</p>
Sex	<p>At this stage, impacts in respect of this Protected Characteristic are identified as being 'neutral' as none have been identified which have the potential to disproportionately affect people within this 'group'.</p>
Sexual Orientation	<p>At this stage, impacts in respect of this Protected Characteristic are identified as being 'neutral' as none have been identified which have the potential to disproportionately affect people within this 'group'.</p>
Socio-economic group	<p>Households with a car but without a private driveway on which it can be charged will be the biggest beneficiaries of the strategy. Typically, these will be flats, Houses of Multiple Occupation and houses in our older and more urban areas. Many will be located in Priority Neighbourhoods and areas of lower incomes. The introduction of EV charging hubs will make it easier for residents to adopt the technology and provide a more accessible charging solution. This indirectly benefits those who may be more likely to experience lower incomes which disproportionately affects disabled people, people from many BAME backgrounds, females and people in younger age groups.</p>

Table 2: Assessment of impact on protected groups in respect of proposed interventions

Proposed Intervention	Summary of Impact
<p>Expansion of Public Charging Infrastructure</p> <ul style="list-style-type: none"> - Public car parks - Council-owned leisure centres - Libraries and our Civic Centre - Our park and ride sites - Local high streets - On-street residential (where appropriate) - Tourist attractions - Community centres and village halls 	<p>It is hoped that delivery of the proposed interventions within the EV Charging Strategy will lead to wide-spread uptake of EVs across the district, which will help to mitigate the effect and risk of climate change on all the protected groups. Specifically, it is envisaged that the adoption of the strategy will lead to the implementation of our ‘Community Hub’ scheme which will work to provide charging points to support the needs of residents without access to charging infrastructure and to ensure rural communities are supported on their transition towards low emission vehicles.</p> <p>Given the focus on rural areas, we will also be supporting those living in areas who ‘may be left behind’ by the private sector.</p> <p>Given the outcomes of the above ‘assessment of impact on protected groups due to install of charging infrastructure’ shown at table 1, it will be important that the negative impacts identified are mitigated on a case-by-case basis. It is recommended that a set of criteria is drawn up based on impacts identified in table 1 and is used to inform accessible design for each individual proposed installation of charging infrastructure (see action plan at section 4 of this EqIAA).</p>
<p>Supporting E-mobility (including EV car-clubs)</p>	<p>The Council will engage with Car Club operators to introduce EV car club schemes in existing communities. The potential implementation of such schemes can result in clear positive socio-economic benefits, as it will increase access to electric vehicles for those that cannot commit to the expense of owning an electric vehicle.</p> <p>E-bikes potentially open a route for greater levels of active travel from older age groups, up to a point, dependent upon individual access requirements. Encouragement of electric modes of transport such as e-bikes and e-scooters have posed risks to people with disabilities and other groups. Notably, there are concerns for trip hazards and access barriers for people with visual impairments. It should be noted that the focus of the strategy is to support the creation of e-mobility hubs through the provision of public charging infrastructure to support car club schemes. It is unlikely the public charging infrastructure will be relevant to e-bikes.</p> <p>As above, it is recommended that a set of criteria is drawn up and is used to inform accessible design for each individual proposed installation of charging infrastructure. Additionally, it is recommended that information for car club members includes good practice in terms of ensuring usage does not decrease, but maintains and advances accessibility, especially for disabled people, older people and people with prams/pushchairs (see action plan at section 4 of this EqIAA).</p>
<p>Fleet conversion and workplace charging</p>	<p>The council intends to lead by example by converting our fleet vehicles to low emission vehicles to help reduce the environmental impact of our day-to-day operations. We will also seek to encourage employers to provide EV charging facilities at workplaces. This</p>

	improved access to charging infrastructure could support most groups by contributing towards access to employment opportunities.
Promoting EV's and infrastructure	<p>Encouraging the proliferation of EV's within the district will lead to numerous benefits such as improved air quality and less noise pollution. It is anticipated that this intervention will have a positive impact on all groups.</p> <p>Demonstrator facilities and a test drive facility bring the potential to address numerous of the negative impacts identified in the above 'assessment of impact on protected groups due to install of charging infrastructure' shown at table 1 such as demonstrating technology and accessibility features of vehicles (for example, EVs can provide enhanced accessibility for disabled people due to greater interior space). As such, it is recommended that targeted promotion be delivered (see action plan at section 4 of this EqlAA).</p>
Local Planning	<p>Through the provision of minimum standards for EV charging in new developments, this will ensure that all infrastructure is designed to support the current and future needs of protected groups.</p> <p>In addition, it is recommended that the developed minimum standards for developers incorporate accessible design principles (see action plan at section 4 of this EqlAA).</p>
Revive Charging Network	<p>The Revive Network established by the West of England Authorities brings opportunity to share experience and keep up to date with market developments.</p> <p>It is recommended that equity of charging distribution and accessibility of infrastructure are incorporated into the ongoing agenda of this network in order that these issues are continuously monitored on both local and regional levels.</p>
Climate Emergency	<p>Steps to address the climate emergency include provision of EVCPs in the following locations:</p> <ul style="list-style-type: none"> • Marshfield Community Centre – one fast charging point • Lower Stone Close – one fast charging point • Kingswood Civic Centre – one fast charging point • Thornbury Leisure Centre – one rapid and one fast charging point <p>We are also exploring the introduction of EV car club bays in Filton, Staple Hill and Yate.</p> <p>These areas have been chosen as they specifically contribute to the EV Charging Strategy objective of:</p> <p><i>Enhance social equity: If left to the market, EV charging infrastructure is unlikely to be fairly or evenly distributed. South Gloucestershire Council has a key role to intervene to support rural locations and offer affordable charging solutions in lower income residential areas.</i></p>
On-street Residential Charging Scheme (ORCS)	<p>The council has applied for ORCS funding to implement 14 fast (22kW) charging points in eight residential locations. The planned locations for these charging bays are:</p> <ul style="list-style-type: none"> • Hawkesley Drive, Bradley Stoke • Derwent Close car park, Patchway

<p>Provides funding from the Office for Zero Emission Vehicles (OZEV) to increase the availability of plug-in vehicle charging infrastructure for those who do not have access to off-street parking</p>	<ul style="list-style-type: none"> • Boulton Road car park, Kingswood • Marlborough Drive, Frenchay • Perry Close, Winterbourne • Abbotswood car park, Yate • Bevan Court, Filton • Rock Street car park, Thornbury <p>The scheme is intended to satisfy the current or future demand of residents which are unable to charge at home due to a lack of off-street parking or other difficulties with installing home charging facilities (eg. Radburn homes). The provision on-street charging infrastructure will help enhance social inclusion and support lower income households.</p>
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SECTION 3 - IDENTIFICATION OF DISPARITIES, IMPACTS AND ISSUES

As part of our EV Charging strategy, improving accessibility, as well as equitability, of EV charging infrastructure forms the basis of our key strategic focus.

To achieve this vision, the consultation has supported with the identification of emerging issues as detailed in the table below.

Key Issues Emerging	Response
Inadequate parking designs inhibiting access to EV charging points for disabled users	To ensure accessibility, the parking bays for off-street parking will be wider than a standard bay which will aid access in and out of the vehicle. Our schemes will ensure that parking designs incorporate best practice guidance from national guidance.
Removal of Blue Badge parking bays	There will be no removal of Blue Badge parking bays within our public car parks rather we will be ensuring all Blue Badge users are able to access our charging bays through accessible design measures.
Personal Safety	We will ensure that EV charging bays will be located in well-lit areas and in most cases existing parking provision are already in place nearby.
High purchase cost of electric vehicles	It should be noted that this EqIAA is focussed on the charge points, not the vehicles themselves so does not address the potential inequality of affordability of car ownership. However, our transport vision is to reduce car ownership overall, in favour of active travel, public transport and shared vehicles. As such, we are also committed to introducing EV Car Club charging bays which will offer a pay as you go service to users to reduce the need for EV ownership.
Trip Hazards	We acknowledge the risk of trailing cables which creates trip hazards within the public highway. At present the strategy has mitigated this risk by not permitting residents to lay a cable across the footway and by ensuring that any on-street charge points are installed at the front of the footway. We will follow the Gul-E trials in Oxfordshire to see if similar system can safely be rolled out to South Gloucestershire
Rural Isolation	The strategy will seek to implement an equitable distribution of charge points across the district to help ensure residents and visitors in rural locations have access to public charging facilities.
Accessibility of charging infrastructure (i.e weight of charging cables, height of the units or the force required to attach the connectors)	There remain concerns surrounding the accessibility of the charging infrastructure for numerous groups which have protected characteristics. In October 2022, with the support of the Government, BSI (British Standards Institution) launched PAS 1899:2022, which provides accessibility standards for charge points. We will work to incorporate these standards into future procurement strategies to help improve accessibility for all user groups.

The increase in numbers of electrical vehicles across South Gloucestershire is now guaranteed given government decision to ban production of new internal combustion engines from 2030, and hybrids from 2035.

As vehicle manufacturers respond by increasing the number of EV's in their range and offering lower cost vehicles, an increasing number of EV's will become available to consumers including on the second-hand market. This will accelerate the geographical take-up of EV's across all areas in South Gloucestershire.

This spread in uptake will highlight the more challenging issues regarding EV infrastructure such as the need to provide on-street charging options for those that don't have access to off road parking and supporting our rural communities that may have limited private sector investment.

Residents with off-street parking will be able to install their own charging point(s) and pay for this via their usual electricity bill. It is expected that this will be the most economical way of charging EV's with users able to avail of off-peak/night-time electricity tariffs.

For those residents without access to off-street parking or with difficulties introducing home charging facilities (eg. Radburn style housing), the proposed strategy will seek to provide accessible public charging points that will support the switch to EV. In doing so, the council will have to balance its desire to ensure wide-spread adoption of EV technology across all areas of South Gloucestershire with its own budgetary constraints, the needs of other road users whilst also taking account of rapidly evolving private sector EV infrastructure provision.

Wide-spread provision of on-street charging facilities are not envisaged by the Strategy; there are a number of reasons for this including:

- the additional street clutter being a significant hindrance to other road and footpath users – especially for older, younger, and disabled people, as well as people with prams/pushchairs;
- for the region to achieve its target of carbon neutrality by 2030 we will need to achieve a significant mode shift away from private vehicles to active modes (walking, cycling, wheeling) and public transport modes. Providing a relatively small network of closely located charging points rather than dispersed on-street charging points fits in with the desire to reduce the attractiveness of using private vehicles for journeys.
- As a result of rapid technical development, any council funded infrastructure could rapidly become obsolete or a drain on scarce resources.

Our strategy seeks to promote equality of access to charging infrastructure for all regardless of their background or circumstances. It is clear that this EqIAA has highlighted potential for negative impacts for some, in particular, older people, disabled people, people with prams/pushchairs and people from lower socio-economic groups which disproportionately includes disabled people, people from many minority ethnic groups, females and people in younger age groups. Actions to mitigate these impacts are shown in Section 4 of this EqIAA below.

It is important to note the following:

Though this EqIAA is focussed on the provision of charging infrastructure, not the vehicles themselves, it is important to acknowledge the concerns surrounding the environmental and social impacts of EV's.

Providing more publicly available electric vehicle charge points will support greater EV ownership, which in turn will reduce emissions and improve air quality, positively impacting on health for the population.

Despite the benefits associated with electric vehicles emitting no CO2 emissions into the atmosphere, these vehicles still require electricity to charge the batteries. Therefore, it is important that the council seeks to power this electricity using renewable energy sources (where possible) rather than relying on fossil fuels.

There are other issues associated with the manufacturing of electric cars, particularly lithium-ion batteries which can be an energy-intensive process and have had numerous ethical concerns raised surrounding its production. As such, the council recognises that for electric vehicles to maximise their environmental impact, the manufacturing processes, as well as battery recycling and efficiency, must all improve.

Even with the challenges highlighted, electric vehicles continue to present a significant opportunity to decarbonise the transport sector. The Government has carried out a relative assessment, in terms of air pollutants and greenhouse gas emissions, of different fuel and powertrain options based on outputs from the Transport Energy Model, which was published alongside the Road to Zero strategy in 2018. The modelling makes clear that, even with the current electricity grid emissions, battery electric vehicles are estimated to have greenhouse gas emissions 66% lower than a petrol car and 60% lower than a diesel car. Furthermore, between now and 2050, the government has projected that grid emissions will fall by around 90%, with total emissions from electric vehicles falling in parallel. The 2018 report concludes that battery electric vehicles (BEVs) *'have substantially lower greenhouse gas emissions than conventional vehicles, even when taking into account the electricity source and the electricity used for battery production.'*

Another major challenge associated with the adoption of EV's are the initial purchase costs. The current costs of purchasing or leasing EVs are significantly more expensive than traditional internal combustion engine (ICE) vehicles, meaning that lower income households are the least likely to be able to find the resources to make the transition and may miss out on the benefits associated with EV adoption. Over time, the initial purchase and leasing costs are likely to become more aligned and potentially cheaper than ICE vehicles, and as such this is likely a temporary impact. There is also a growing availability of second-hand EV's which will also improve accessibility though evidence suggests that these vehicles are likely to have greater charging needs with a recent DfT research into Electric vehicle charging indicating that 27% were likely to need to charge overnight compared to an average of 18% which could lead to further disadvantages. However, EV's promise cheaper running costs than ICE vehicles, which may, in time, be particularly positive to low-income households.

The council acknowledges that sustainable transport options must be accessible for all and this strategy seeks to introduce EV car club bays which will provide some support towards reducing the need to purchase and own electric vehicles which will have a positive impact to all protected groups whilst tackling the ongoing climate crisis.

SECTION 4 - ACTIONS TO BE TAKEN

1. We will continue to monitor ongoing feedback from residents and keep abreast of any issues arising.
2. Whilst we anticipate that the private sector will provide the majority of EVCP in our region, the council will seek to make targeted, and specific interventions where there is evidence of market failure and benefit to be gained by our residents. This evidence will be kept under continuous review.
3. A set of criteria will be drawn up based on table 1 in this EqIAA to inform accessible design for each individual proposed installation of charging infrastructure. As part of this measure, we will also seek to incorporate the recently launched PAS 1899:2022 into future procurement strategies to help improve accessibility for all user groups.
4. Information for car club members will include good practice in terms of ensuring usage does not decrease, but maintains and advances accessibility, especially for disabled people, older people and people with prams/pushchairs.
5. Demonstrator facilities and any test drive facility will deliver targeted promotion, in particular ensuring that older and disabled people are included and receive information relevant to their needs.
6. Minimum standards for developers will be developed to incorporate accessible design principles in order that infrastructure and associated works are planned effectively and do not create barriers to access.
7. Equity of charging distribution and accessibility of infrastructure will be incorporated into the ongoing agenda of the Revive Network in order that these issues are continuously monitored on both local and regional levels. This will include monitoring of the impact of innovative trials by other local authorities and will specifically include accessibility issues.
8. We have bolstered our strategic objectives to ensure improvements are made to the accessibility, safety and reliability of any implemented charging infrastructure schemes.

SECTION 5 - EqIAA OUTCOME

Outcome	Response	Reason(s) and Justification
Outcome 1: No major change required.	<input type="checkbox"/>	
Outcome 2: Adjustments to remove barriers or to better promote equality have been identified.	<input checked="" type="checkbox"/>	As a result of its development and consultation conducted, the strategy has identified a number of key issues which have the potential to differentially impact on protected characteristic 'groups'. Following this, a set of actions have been developed as set out in section 4 of the EqIAA which are intended to mitigate negative impacts and which will maximise accessibility to all residents to our publicly available EV charging infrastructure in the future. Continual resident feedback will be proactively monitored on an ongoing basis.
Outcome 3: Continue despite having identified potential for adverse impact or missed opportunities to promote equality.	<input type="checkbox"/>	
Outcome 4: Stop and rethink.	<input type="checkbox"/>	

SECTION 6 - SOURCES OF EVIDENCE INFORMING THIS EqIAA

- South Gloucestershire Council EV Charging Strategy Consultation Feedback Report and results, November 2022
- [Transport decarbonisation plan – \(July 2021\)](#)
- [The Road to Zero \(Department for Transport, July 2018\)](#)
- [Automated and Electric Vehicles Act](#)
- [The Transport Energy Model](#)
- [Decarbonising Transport, Setting the Challenge \(2020\)](#)
- [Clean Air Strategy, Department for Environment, Food and Rural Affairs \(2019\)](#)
- [Future of Mobility Urban Strategy \(2019\)](#)
- [UK electric vehicle infrastructure strategy \(2022\)](#)
- [West of England Joint Local Transport Plan – West of England Partnership \(2020\): The West of England Joint Local Transport Plan 4 2020- 2036 \(JLTP4\)](#)
- [WECA Climate Emergency Action Plan \(Post Covid-19 Recovery\) \(2020\)](#)
- [West of England Joint Spatial Plan - West of England Partnership \(2017\)](#)
- [Local Plan Core Strategy](#)
- [South Gloucestershire Climate Change Strategy](#)
- [South Gloucestershire Climate Emergency Action Plan](#)
- [South Gloucestershire Air Quality Annual Status Report \(2019\)](#)
- [Green Infrastructure Strategy](#)
- [Motability EV Charging FINAL.pdf \(mobilitygroup.eu\)](#)
- [Electric Vehicle Charging Research. Survey with electric vehicle drivers. Research report. \(publishing.service.gov.uk\)](#)
- <https://www.bsigroup.com/en-GB/standards/pas-1899/>