Commission on Travel Demand: Shared Mobility Inquiry

Response from CoMoUK

Contents

Introduction & Scope

CoMoUK is the charity playing a leading role in the UK's transition to integrated mobility solutions designed for the public good. CoMoUK supports the development of shared modes: car clubs; bike share; 2+ ride share; plus emerging modes such as on-demand buses and scooter sharing – all to enable mobility lifestyles which present an alternative to private car ownership. This is achieved through advocacy, research and development.

CoMoUK welcomes the opportunity to contribute to the Commission on Travel Demand Shared Mobility Inquiry. This document contains two elements:

- An overview of CoMoUK evidence and the latest UK and overseas intelligence;
- A commentary on the questions posed by the inquiry brief; sector trends, good practice, success factors, and barriers.

Please note that CoMoUK was named Carplus Bikeplus prior to June 2018. This document will refer to CoMoUK however some linked research will have previous branding.

Summary

Shared mobility schemes have been proven to contribute to reductions in energy demand and harmful emissions as well as providing tools to reduce congestion, improve public realm and contribute to fairer mobility. Switching the relationship of transport from ownership to service triggers user of car clubs and bike share to reduce levels of private car ownership and use, changing their travel behaviour to further embrace sustainable and active modes.

Mobility modes based upon sharing must be recognised as a vital part of sustainable and fair mobility strategy. In a time of advances in vehicular technology, data science, mobile technology and artificial intelligence there is a recognition that such innovation alone won't deliver the urban transport system that reduces congestion, improves air quality and makes our cities liveable for years to come. In short, not all new mobility provides "good mobility". It is encouraging to see the recent Department for Transport Future of Mobility Urban Strategy1 highlighting the need for the sharing of modes and trips. There are references within the nine key principles underpinning the report. Point 6 states "Mobility innovation must help to reduce congestion through more efficient use of limited road space. "and point 8: "New mobility services must be designed to operate as part of an integrated transport system combining public, private and multiple modes for transport users" highlighting the value of converting modes which were previously private, to public services to allow for greater strategic management.

It is clear that there are a number of factors affecting the take up of shared mobility services – from policy support to investment from public and private sources; from the role of advocacy bodies to shared mobility's inclusion in new developments. However, the policy and economics of travel currently locks-in the predominance of unfettered private car ownership and use. Nudges to change behaviour are valuable, but only part of the answer. There are currently opportunities for locking out inefficient mobility based on private ownership and use and locking-in more efficient mobility – for example pay-as-you-go access to shared cars and bikes.

In this document, we highlight:

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[1] https://www.gov.uk/government/publications/future-of-mobility-urban-strategy

- What we think are priority interventions for maximising decarbonisation from shared transport;
- Limits to the existing evidence base in terms of its ability to answer the questions.

Definitions and contexts

What does "shared" mean?

We acknowledge that shared transport is part of a continuum between private and public transport. Some parts of shared transport involve private modes (e.g. ridesharing), whereas others are part of the public transport system (e.g. London's docking bike share system currently sponsored by Santander).
We think it is useful to consider "shared" as meaning:

1. Shared **vehicl**es / 3rd party assets: vehicles are dedicated to sharing (car clubs; bike share)
2. Shared **trips** / Filling empty capacity:
   - seats in cars already making a journey (e.g. Liftshare etc);
   - peer-to-peer car rental (e.g. HiyaCar)

We also acknowledge the various critiques of the sharing economy, including the evolution from the more principled motivations for sharing to a more commercialised and global industry (e.g. Slee (2017)[2]).

Categorisation of shared transport

There are three main current components of shared transport, each with different models[3].

Cars

- o Back to base e.g. Co-Wheels: cars are picked up from & returned to the same reserved station, or geo-fenced permit area. Peer-to-peer car rental (e.g. HiyaCar) is mainly the same operational model, but the operator is a broker between private car owners and users rather than owning and supplying the cars.
- o Station-based one-way e.g. Blue City: cars are picked up from one station but can be returned to another designated station/charging station.
- o Floating/one-way e.g. DriveNow: cars can be picked up and dropped off in parking bays anywhere within a designated area

CoMoUK have had input to a Belgium-led H2020 study that attempts to create a more comprehensive categorisation of shared car services. The final report[4] is not yet available, but summary slides have been released[5].

There are two further models that could be considered to involve shared cars, but about which little is known on scale or impact:

- o Informal/car borrowing: people lending cars out to their friends, family or neighbours after naming drivers on the owner's insurance, often for a limited time or for a one-off period. We are not aware

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[2] Slee, T. (2017) *What's Yours is Mine: against the sharing economy*, Scribe, Melbourne, 240pp.

[3] https://como.org.uk/shared-mobility/shared-cars/what/

[4] Matthijs, J. (2019) *Car sharing in Europe: a multidimensional classification and inventory*, report for Horizon 2020 project "Shared mobility opportunities and challenges for European cities".

[5] :https://share-north.eu/2019/03/catch-up-on-webinar-the-impact-of-different-car-sharing-variations-on-urban-mobility/

of information on the scale or impacts of this model. It is of interest and potentially significant scale; and the wider evidence tells us that reducing car ownership results in significant reductions in car use. Better understanding car borrowing (in terms of impacts and how to maximise impacts) could lead to useful avenues for strategic reductions on car ownership and hence emissions.
We know there are barriers to people doing this, such as the flexibility of insurance policies and the practical ease or otherwise of adding or deleting named drivers from policies.

- o Fractional ownership: cars are bought or leased by a group of individual users from a supplier. Pilots by Ford, Audi and Mini have had mixed success here[6].

We also acknowledge that car rental could be seen as fitting within the scope of shared mobility, which is an important part of the non-ownership mobility mix. We generally exclude it as the vehicles are generally not available locally, lack self-service app or card based access, and are only available for set periods of time – so don't satisfy the on-demand sense of shared transport.
We exclude ride hailing from shared transport for the same reasons as excluding taxis as these trips are not ones which would happen anyway. We do however recognise they play a key role in the sustainable transport mix and help to support reductions in car ownership.

We recognise and are tracking the early steps occurring, blurring lines between operational models within shared car services. To illustrate:
- o Zipcar operates both back-to-base and floating one-way car sharing services
- o Enterprise are trialling "automatic rental" – where in-car telematics allows for 24/7 pick-up of rental cars (though currently from rental depots rather than more conveniently located bays)
- o HiyaCar are piloting telematics-enabled peer-to-peer rental

Bikes

CoMoUK consider there to be three mainstream models of public bike share[7]:
- o Docked bike share: also known as station-based bike-share, this system makes use of on-street infrastructure for parking and accessing the bikes. Users need to retrieve and park the bikes at these stations across city-wide network.
- o Dockless bike share (also known as free-floating: this station-less system relies on internal locks on the rear wheel to secure the bike. Users must use a smart phone to access and secure the bikes at the start and end of their trip. Bikes can be parked anywhere across the locale.
- o Hybrid schemes: this is the 'best-of-both-worlds' system which has docking station but users can also park out-of-hub using a rear wheel lock.

In addition, bikes are made available to users through
- o Workplace bike pools: these operate in a closed system open to discrete number of people through their affiliation or membership to an organisation such as a workplace.
- o Bike libraries/bike loans: these models rely upon the vast second-hand market in bicycles. These operate in communities where outright bike ownership is barrier to use on cost grounds. Therefore, people can get a bike loan of a second-hand bike for either no cost or minimal cost.
- o Peer-to-peer sharing of private bikes: this is the short-term renting of private bikes between members of the public. This is often a more bespoke offering than conventional shared bikes.

Rides

CoMoUK consider there to be three elements of ride sharing within shared mobility[8]:

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[6] https://nordic9.com/news/audi-closes-down-its-stockholm-based-pilot-project-for-carpooling-news5528109642/
[7] https://como.org.uk/shared-mobility/shared-bikes/what/
[8] https://como.org.uk/shared-mobility/shared-rides-and-the-rest/what

- o 2+ ride sharing – or variously "car sharing", "carpooling", "lift sharing";
  These are peer-to-peer services whereby a private citizen offers to share a trip with one or more passengers. They offer spare capacity (seats in cars) to be matched with people needing a lift. They are either organised via a broker/operator (such as Liftshare.com), but the majority are organised informally, the scale and impacts have not been published or independently reviewed assessed.
  These can be usefully split into two types of use cases:
    - Regular/commute – between friends, or via a lift-matching system within a closed (e.g. single employer) or semi-closed (e.g. commutes to cluster of different businesses);
    - One-off/occasional – e.g. to festivals or for weekend trips away; the social network is generally between strangers who have a shared interest.

- o Taxi-sharing – Apps such as Gett Together and CityMapper Smart Ride are replacing the conversations between people in taxi ranks; shared minicab services include UberPOOL and SplitCab.

- o Micro-transit/on-demand minibus services – where semi-flexibly, loosely-timetabled minibuses operate along commuter corridors and other busy routes. This effectively straddles a standard bus model with ride share, using real-time technology to create a dynamic responsive service that brings together the economies and efficiencies of scheduled public transport with the demand-responsiveness and personalisation of shared transport. Examples in the UK include Arrivaclick and GoAhead, others such as Chariot and Slide have run trials which have recently ended. Whilst not yet operating in the UK, Moia[9] takes this to the next level with the use of a purpose-designed vehicle.

Emerging

Other shared transport models exist and are emerging. The most active space is around micro-mobility with the development of different models of shared electric scooters[10]. Some operators offer traditional stand up scooters, others have seats added to light weight style models, a further group offer shared mopeds. There are also pilot projects deploying e-bikes with roofs like small cars[11] and plans for services using shared Light Electric Vehicles (LEV) which are still in development.

Responses to the Commission's seven questions

1. **What do data sources tell us about (a) how shared transport is today and (b) how that has changed?**

   UK data sources can be split into five types:

   a. Primary data dedicated to shared transport that attempts to be as impartial as possible,
   b. Data collected as part of research projects
   c. Primary data gathered about interventions in specific places
   d. Primary data collected by operators
   e. Secondary interpretation of other data

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[9] https://www.moia.io/en
[10] https://www.forbes.com/sites/johnfrazer1/2018/12/17/4-major-reasons-shared-electric-scooters-will-transform-our-cities/#7a0838e56d69
[11] https://www.velometro.com/

a. How shared transport is today

In summary, in terms of what these tell us about shared transport

- For car clubs and bike share:
    - We understand the scale, impacts and key markets of formal car clubs & bike share as far as the methodology can do so
    - For car clubs, we have robust evidence for about 10 years, bike share, for 3 years
    - Apart from a single CoMoUK project[12,13] looking at longitudinal issues regarding car clubs, there is little or no evidence on year-on-year changes. Scott Levine is currently undertaking further analysis on these data.

The following issues are broadly acknowledged, though generally based on sector intelligence rather than data and evidence:

- Shared transport services are both diversifying and blurring
- The sector is predominantly commercially led, mainly by global operators. This is in significant contrast to its origins in the community sector, and the reducing role of the public sector.

Audit of key data sources

Type of evidence	Scale, quality & issues	Examples	Type of evidence
Primary data dedicated to shared transport	Medium scale; robust; mainly mode (vs mobility) specific	CoMoUK surveys of car clubs and bike share www.como.org.uk https://como.org.uk/wp-content/uploads/2018/05/Shared-Electric-Bike-Programme-Final-Report.pdf	Primary data dedicated to shared transport
Data collected as part of research projects	Small-medium scale; illustrative; robust; mainly targeted on mode, user cohort, context	www.cycleboom.org	Data collected as part of research projects
Primary data gathered about interventions in specific places	Small scale; mode & place focussed; variable robustness	https://www.brighton.ac.uk/secp-archive/research-projects/smart-ebikes.aspx	Primary data gathered about interventions in specific places
Primary data collected by operators	Variable in quality & scale; sometimes opaque re sampling & methodology	*Lime One Year Report*, 2018 https://www.li.me/hubfs/Lime_Official_One_Year_Report.pdf NB – not UK data	Primary data collected by operators
Secondary interpretation of data	Large scale data, but shared transport often barely registers or is overlooked; high robustness	NTS, London Travel Demand Survey or ONS Household Surveys	Secondary interpretation of data

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12 Carplus (2016) (unpublished) *Carplus Annual Survey Longitudinal Analysis*, undertaken by Steer Davies Gleave
13 Carplus (2016) (unpublished) *Establishing evidence of long-term travel behaviour change*, undertaken by Systra

Evidence provided by CoMoUK surveys

Car clubs

A summary of recent CoMoUK surveys and reports is given in Annexe 1.

Metrics

CoMoUK has collected metrics on car clubs about quarterly since 2000. This involves gathering data from operators under NDAs. It includes:

- Number of members and vehicles by operator
- Locations (to settlement level) of all vehicles
- Type of vehicle fuelling (ICE, EV, Hybrid)

Some operators and locations provide a greater level of detail

Users and outcomes

The CoMoUK annual surveys of car clubs include more detailed surveying of a sample of users plus information from all operators on their fleet. This leads to analysis covering user types (Mosaic profiles), impacts of user behaviour, and environmental impacts of the services.

In recent years, separate surveys have been carried out for Scotland, London and England & Wales. Sometimes, these have not all been possible (due to funding issues), and since the split, we have not reported at UK scale.

To illustrate the scope of the surveys, the 2017/18 Scotland car club survey covers:

- Profile of car club users

- Impact of car clubs on car ownership
- Impact of car clubs on car purchasing
- Impact of car clubs on miles travelled
- Mileage prior to joining a car club
- Travel behaviour of longer-term members

- Use of other shared mobility
- How car club vehicles are used
- Why car club vehicles are used

- Circumstances when joining a car club
- The experience of joining a car club and satisfaction with car clubs

- Experiences of using electric vehicles
- Attitudes towards electric vehicles

To illustrate the reported findings, Annexe 2 shows the infographics from the 2016-17 survey for London.

There are differences between the findings of the London, Scotland and England & Wales surveys, suggesting that there are issues of geography that influence the uptake and (we assume) impacts of

shared transport. We have not looked at these formally, but there appear to be differences between the surveys in the types of people using services and the intensity of use.

This is probably due to various differences between large metropolitan areas (i.e. London) vs more mixed urban/rural locations, including

- Culture and social norms
- Different influences and relative dominance of commercial, public and community sectors
- Different mobility contexts in which the services are established and operate

Bike share

A summary of recent Bikeplus / CoMoUK bike share surveys is given in Annexe 3.

The bike share surveys report on

- Scale of the sector
- The demographics of bike share users
- The potential to attract new cyclists and the change in number of cycling trips
- Impacts on health
- Personal benefits of bike share
- Modal shift relating to the use of bike share
- Use of other co-mobility services

The infographic summaries from 2017-18 are presented in Annexe 4.

Rideshare

We made a concerted effort between 2016-18 to establish an evidence base relating to scale, users and impacts of the 2+ ride share sector. This was thwarted for a variety of reasons, though observations on the sector are provided in the final report[14] (not in public domain).

b.   "… how that has changed"

Car clubs

The key metrics for car clubs (number of cars, number of members) are reported annually as part of the CoMoUK annual surveys. Commentary on the figures is provided in the Forewords to the Annual Surveys. This usually highlights key changes year-on-year and may pick up on any emerging trends.

Trends relating to the car club sector are not produced routinely by CoMoUK but can be made available if required.

Bike share

Bike share has only been surveyed by Bikeplus CoMoUK since 2016 (Annexe 3). The second survey summarises changes in the sector compared to a year previously.

Rideshare and other shared transport

We have no data that illustrates changes in other aspects of shared transport over time.

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[14] Carplus (2018) *From Consumption to Service - Reframing the New Economics of Shared Transport*, Closing report to Joseph Rowntree Charitable Trust, June 2018.

What do data sources not *tell us?*

The current evidence base has gaps that limit intelligence about the sector:

- Rideshare and shared transport services apart from car clubs and bike share
  Scale of the sector, the types of people that do (and don't) use the services, their motivations, the types, frequency & length of journeys and the impacts of their use.
- Scale and impacts of shared transport options *together*, and how these fit with other transport (and lifestyle) choices to describe mobility lifestyles.
  Information on this is explicitly asked in the CoMoUK surveys, but this is not then looked at in terms of how combinations of services are used together by different types of people. This means that we could - but have not yet – looked explicitly at shared transport from the perspective of mobility lifestyles.
- Formal causality
  Are we measuring and characterising the travel behaviour of the types of people that are attracted to shared transport or are the shared transport services triggering that behaviour? It is likely to be a combination of both and separating these would be a challenge to methodology.
- Intelligence on why some people *don't* use and *aren't* motivated to start using shared transport.
  This is especially interesting with respect to any or all of (i) people with Mosaic profiles that would suggest that they would use shared transport (ii) in places where there are adequate or good options (iii) with lifestyles in which shared transport would fit.
  Comparisons between the car club surveys in different areas (e.g. London and Scotland) reveal a different set of Mosaic profiles of users. This suggests that geography, local context and culture are probably important influencers of the use of shared transport, though we have not yet explored this further.

More generally, there are issues related to the nature of the sector that create issues and uncertainties:
1. Scale of sector & impacts
   There are issues that make a basic definition of sector scale difficult. The basic framework for measuring some parts (e.g. ridesharing) is difficult to define:
   - Number of "units"
     Whilst it is relatively straightforward to quantify the scale of the parts of the sector that provide dedicated cars or bikes, and usage is logged (car club cars, bike share bikes etc), it is trickier when an existing resource is shared (rideshare, peer-to-peer). Put another way, how should we measure the available scale of the availability of lifts? If I make my car available on a peer-to-peer rental platform but no-one ever uses it, does that count as part of the scale of the sector?
   - Number of users & user intensity
     We are aware that a significant proportion of members signed up to shared transport services use the services infrequently. Once again, there is no framework for measuring "usage intensity" – how does one person sharing a short commute regularly compare to someone taking a lift to Glastonbury?
     There have been attempts to define different intensities of activity – frequent / occasional / dormant member / user, though these are not translated to meaningful metrics.

2. Measuring impact
   The CoMoUK evidence for car clubs and bike sharing is fairly good at trying to disentangle the impact of the shared transport service on individual travel behaviour in that questions are asked on
   - Whether and how journeys would have been made otherwise (i.e. journey-by-journey impact)

- Whether users have modified their lifestyles and mobility lifestyles as a result of starting to use shared transport.
  However, we are very much aware that we do not currently understand well the following:
- Trade-offs and rebound effects
  We are aware that trade-offs and rebound effects are bound to occur as people start using shared transport, but do not have evidence of such next-stage impacts.
  Both of these issues were identified as an explicit question in our 2016-18 JRCT project[14] though we were not able to adequately address it.
- Attribution of impacts to specific interventions, especially when either
  - The use of shared transport is associated with other significant life events (moving house or job)
  - The appearance of one of more shared transport services may be part of a broader initiative or set of interventions
- Intervention stickiness (c.f. Sally Cairns / STT interventions etc): we are aware that the methods used to gather our data are generally about use in the previous year rather than year-on-year "stickiness" of service use by individuals. Put another way, we do not clearly understand whether – if someone starts to use a service – they continue using it and embeds it into their lifestyle or whether they stop using it once they have tried it for a while, in which case they drop out of our sampling.

2. (a) Where is sharing happening most intensively across the UK

- **Cities**: dense, provides transport options that can be mixed into mobility lifestyles
  Operator-led mainly;
  Cars, bikes, microtransit
- **Workplaces**: closed systems where there is CSR, financial or corporate liability drivers
  Cars[15] rides; employer-led
- **Communities**: big focus & legacy, but (probably) small overall scale[16] (data on scale can be supplied if requested).
  The scale & impacts of a lot of informal sharing (rides, cars) is not known.

and (b) what is limiting its spread?

- Awareness among
  - (potential) implementing organisations (employers, policy makers, communities): of options & possibilities, outcomes & benefits, how to get there; cultural "corporate social norms" – changing?
  - People (users, individuals): "How might this work for me? Social norms; affirmation.
- Two further sets of issues are explored in more detail in response to questions 6 & 7 below:
  - Regulatory frameworks & licensing
  - Parking, access to EV charging & kerb space / street space agenda, TROs

Policy & economics of travel currently locks-in the predominance of unfettered private transport modes; nudge will only get so far.
There are currently opportunities for locking out "bad" mobility and locking-in "good" – which would probably include some form of PAYG access to cars plus bike share. A good example would be integrated approaches to tackling city centre air quality – where "bad" modes should be designed-

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[15] BVRLA / EST (2016) *Getting to Grips with Grey Fleet*, https://www.bvrla.co.uk/resource/insight-getting-to-grips-with-grey-fleet.html

[16] https://como.org.uk/shared-mobility/shared-cars/where/

out and "good" modes designed-in to city centre mobility master planning. The AQ framework provides a legible structure into which strategic shared transport could be designed-in to maximise the outcomes of AQ improvements.

3. Who is sharing and for what purposes?

The CoMoUK surveys explore this explicitly:

- The car club surveys undertake
  - mosaic profiling of users (Figure 2)
  - a summary of how car club vehicles are used (Figure 1)
  - frequency of use
  - motivations for joining a scheme

Type	% of London members	% of London population	Description
Metro High-Flyers	28%	10%	Young professionals in their 20 and 30s renting in inner London boroughs.
Uptown Elite	13%	8%	Established home owners living in accessible inner suburbs enjoying the attractions of city life.
Flexible Workforce	11%	9%	Self-starting young renters ready to move to follow worthwhile incomes in service sector.
Crowded Kaleidoscope	9%	9%	Multi-cultural households with children renting social flats in over-crowded conditions.
Inner City Stalwarts	8%	6%	Longer-term renters of inner city social flats who have witnessed many changes.
Penthouse Chic	8%	4%	Singletons living in flats in prestige central locations with high incomes and outgoings.
Cultural Comfort	6%	10%	Thriving families with good incomes in multi-cultural urban communities.
World-Class Wealth	4%	4%	Global high flyers and privileged families living luxurious lifestyles.
Community Elders	3%	8%	Established older households owning city homes in diverse neighbourhoods.

Figure 2: Example of Mosaic profiles of car club users (flexible car club users in London, 2016-17 from Carplus survey)
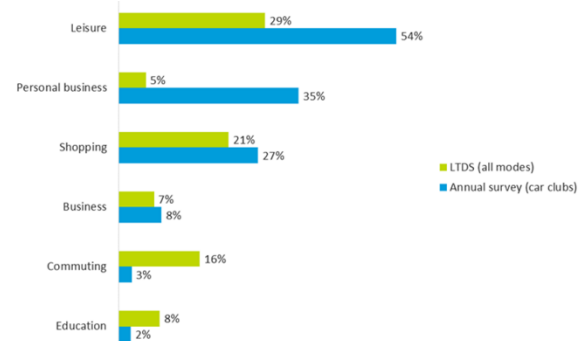
Figure 1: Example of use of car club vehicles (from Carplus 2016-17 car club survey for London)

- The bike share surveys cover
  - Demographics of bike share users (age, income, gender, employment ethnicity).
  - Mosaic profile of bike share users (report pending)
  - Personal benefits of using bike share (which covers reasons for use to a certain extent)

4. What is different about sharing a car or taxi to sharing on public transport and why?

We are not aware of insights from data on this question, and as such the evidence base is lacking. However, our understanding of the sector suggests that:

- Shared cars and bikes provide on-demand mobility – hence different to scheduled public transport. This possibly explains its popularity with people habituated to private car use, namely that it provides (i) independence from schedules and (ii) private personal space. The boom in popularity of bike share may be partly explained by the affordability of this independence.
- Shared rides are – in some ways – similar to public transport in that they need scheduling and involve sharing social space. However, they are probably different in that the social space is "curated" – users choose each other through various social filters; in some ways, it could be seen as a mobility version of social media.
- "shared transport" retains some sense of shared responsibility compared to other modes. For instance, the incidence of damage to car club cars and the need for cleaning is understood to be low. However, the highly publicised problems with flexible bike share bike clutter suggests that this

sense of "ownership" is not universal, though it is unclear whether vandalism and theft were carried out by members or other people.

- The approach that users take to the use of shared transport compared to other modes might be usefully separated through Cialdini's 6 principles[17]:
  - o "Social proof" and "liking" are probably important
  - o The sign-up process and whole membership model requires some form of "commitment"
  - o The use of "reciprocation" has often been a part of scheme development through the use of facilities to ask the operator to locate vehicles or services near to the users – a form of crowd sourcing of demand before the term was recognised
  - o "Authority" possibly helps to explain
    - The suppression of expected growth of the car club sector in London – due to TfL refusing to allow the TfL roundel on car club vehicles, and not entertaining the idea of the inclusion of car clubs into the Oyster system
    - The difference in stability between the TfL-led "Santander" bike scheme (and Local Authority led public bike share schemes elsewhere, such as by Nextbike) and those of other operators

5. What interventions have been effective at stimulating sharing?

It is difficult and would be simplistic to attribute the stimulation of sharing to single interventions or issues. However, the following may help to provide insights into the likely influences.

- Role (and attitude) of the public sector.
  The public sector has three main roles, and it has been clear that a positive approach to each has stimulated shared transport development and use:
  a. Policy support
     Ensuring services are included in associated policy (e.g. S106/S75[18])
     Being supportive of functional issues such as TRO processes for securing on-street parking bays
     More recently, lighter touch "policy" has involved licensing rather than more formal tendering (e.g. various London Boroughs[19]; Manchester bike share 2015-17)
  b. Corporate usage
     A key part of the CoMoUK *Developing Car Clubs in Scotland* programme[20] was for Public Sector bodies to become corporate users of car clubs. This provided stability and revenue in the early stages of scheme establishment.
     A cornerstone of ride sharing in the UK is the corporate usage of services by large employers, including many public sector organisations.
  c. Investment and funding
     Investment in support capacity has provided advocacy that has helped to raise awareness, nurture development opportunities, pre-empt and help avoid pitfalls and provide stability. This has underpinned most of CoMoUK programmes, key recent ones being:
     - o Developing Car Clubs in Scotland (TS, 2010-17[20]) and England (DfT, 2014-16[21])

[17] https://en.wikipedia.org/wiki/Robert_Cialdini

[18] Carplus, 2016 *Car clubs in new developments: a review of good practice in low car and car free developments (2003 – 2014)*,

[19] Flood, A. 2015 *Ten Years of Tendering*, presentation to Carplus/TfL London Officer Training event, November 2015.

[20] Carplus (2018) DCCS review by John Pinkard & Martin Higgitt. https://como.org.uk/project/developing-car-clubs-scotland-programme/

[21] Carplus DCCE review https://como.org.uk/project/developing-car-clubs-england-programme/

- o TfL support for CoMoUK to provide capacity for advocacy for car clubs in London (2008-2017)
  - o Shared Electric Bicycle Programme (DfT, 2015-17[22])

  Funding for services has usually been as grant programmes designed to pilot and demonstrate ideas and services. Whilst these definitely stimulate and accelerate sharing, they have a mixed record in delivering financially resilient services.

- Role of advocacy bodies
  Investment by public sector bodies has been mainly triggered by and channelled through advocacy bodies such as CoMoUK. Whilst it is theoretically difficult to know what would have happened without the deliberate advocacy, it is telling that where there are significant areas of shared transport activity, it is where there have been development programmes. Put another way, the places in the UK with little or no shared transport activity have generally not been covered by development programmes.
  The flurry in recent years of large-scale urban bike share has been mainly led through private sector operators, but stability and resilience of services have not been great.
- Role of operators
  A structural change in the sector has been the shift from the lead by public sector to private sector operators. Whilst this is most marked in terms of global bike share operators in UK cities since 2016, it is a wider trend which has also seen acquisitions of key UK car club operators by global operators: City Car Club by Enterprise, ECar club by Europcar. This provides greater resource for marketing and development as well as the ability for operators to take risks on expansions.

Social trends
There is an increasingly clear understanding of changing social norms relating to mobility and new cohorts of mobility consumers emerging[23]. We are very much aware of these broader changes in attitudes to consumption (from product to service etc) and of the questions relating to the extent to which they create the demand for shared transport services *vs* the trends being a result of the existence of the services, all overlain by the enabling influence of emerging technologies. Our view is that all of these are inter-connected and impossible to disentangle, but that informed and targeted interventions (i) ensure that the sector creates "good mobility" – where public good is a priority, (ii) trigger and accelerate shared transport availability and use and (iii) help to diversify and differentiate the sector.

It may also be useful to reflect on what interventions have *not* happened that we think would be effective at stimulating sharing:
1. Restricting private car use, especially in areas where it causes blight (dense residential areas; AQMAs)
2. An acknowledgment by Government in its emissions reduction strategies and funding that behaviour change is equally or more important than tech-based solutions. If the desired outcome of such programmes is emissions reduction (AQ, carbon), then shared transport leads to benefits not only from cleaner vehicles but from resultant behaviour change as well. What is needed to achieve this are:
   - Explicit Government innovation programmes (c.f. Innovate UK) to accelerate and stimulate innovation and diversification of the UK shared transport market; Innovate UK programmes

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[22] Bikeplus Shared ebike report https://como.org.uk/project/shared-electric-bike-programme/
[23] Marsden, G et.sl. 2018 *All Change….*

in the mobility sector exist in a culture of technology and product development rather than service development

- Explicit inclusion of shared transport services in Government ULEV and emissions reduction programmes:
  - ULEV vehicle grants to be available to car clubs
  - EV grants to be available to ebikes and shared ebike operators

3. Explicit strategic consideration of the role of shared transport in rural accessibility.
Informal ride sharing in private cars is understood to provide the majority of access to people in households without a car in rural Scotland (ref: David Gray), but this is not properly acknowledged or understood. The variety of existing and emerging shared transport options probably could play a key role in solving long standing issues of rural access and mobility and re-stimulate and balance rural communities.

6. What is the potential to accelerate decarbonisation through sharing?

Shared transport can lead to reduced carbon emissions in two ways:

1. Shared transport vehicles are low(er) carbon than the UK fleet; bikes are effectively zero carbon

   Year-on-year evidence of this is available via the CoMoUK car club surveys:

   - Car club vehicles are lower emission than the national fleet
   - Their higher utilisation means that they reach end-of-life faster and so new (cleaner) technology is brought into the fleet faster than for private vehicles

   As a result:

   - *Government incentives for low carbon vehicles should be extended to car club operators*
   - *Government low carbon vehicle subsidies should be extended beyond cars (to ebikes)*
   - *Access to EV charge networks should be prioritised for car club vehicles*

2. Behaviour change

   The CoMoUK surveys provide evidence that car club and bike share users lead lower carbon intensity mobility lifestyles than non-users. This can be considered in three ways:

   - People who start using these services shift to lower carbon mobility lifestyles as a result
   - People who start using these services were in the process of changing their (mobility) lifestyles, so the existence of the services has enabled or assisted this to happen
   - The existence of shared transport services locally allows for people to reflect on whether or how it might work for them; they are increasingly likely to know people or see people using the services and so it is normalised for them, increasing the chances of them shifting to the shared-transport enabled lower carbon mobility lifestyle.

   We are aware of all of these but are not aware of robust evidence to support them.

   - People who might be considering buying a car start using car club services instead.

     This is well documented in CoMoUK car club annual surveys.

   As a result:

   - *Potential user markets who currently have high carbon intensity mobility lifestyles should be targeted.*

     Services and operators have emerged in recent years that have targeted the types of people who lead relatively high carbon lifestyles (Figure 2). This has been due partly to fortuitous co-incidence in that high carbon intensity lifestyle users are also lucrative

markets that have been targeted by new types of operators. This is illustrated well by the sorts of cars in DriveNow fleet (Minis, i3s; launched in the UK in 2015) and the marketing of services such as Mobike or Lime.

More generally, it may be useful to consider shared transport in the UK in the last 20 years as a comprehensive demonstration programme. In terms of maximising decarbonisation:

1. It is well understood who is attracted to shared transport and what their mobility lifestyles look like; it is fairly well understood what sort of people have relatively high carbon intensity mobility lifestyles *and* who have a propensity to use shared transport

2. It is well understood what sort of services work well in what sort of places

3. Use cases for shared transport are fairly well understood; we therefore have fairly good understanding of what sort of journeys could be shifted to shared transport. Analysis by TfL in 2014 identified 3.4 million trips that could be switched to car clubs[24].

4. It is fairly well understood what the modal split is for the mobility lifestyles of people who use shared transport services.

These could (and indeed, *should*) be combined into strategic interventions that go beyond nudging people to use the services *in order to maximise emissions reduction.*

This could be done in the following ways:

1. In places with air quality issues; AQMAs

   Combine packages of services locally (LEV/ZEV car clubs + bike share with PT & active travel) *with traffic restrictions or exclusions*.

2. Through a national "Green deal" or "Shared Mobility Pledge" programme

   Based on the *Green Deal* from Netherlands/Belgium[25] (rather than the UK programme of the same name), a programme that deliberately brings together local or regional partnerships that are responsible for the development of a vision of the application of shared transport at scale to deliver agreed outcomes, with pledges for action. CoMoUK is replicating this with the newly launched Shared Mobility Pledge programme.

   This helps to bridge sectors, create a clear strategic outcome and map a route to deliver outcomes.

3. Workplaces

   The closed and semi-closed contexts of workplaces (single employer, clusters of employers and business parks)

   - provide useful organisational contexts for mobility management & for appropriately curated services; the employer is often appropriately well organised as an intervention body (fleet, HR, accounts etc)

   - involve use cases for which shared transport often provides appropriate "good" mobility solutions

     o car clubs replacing pool cars;

     o (e)bike share for local journeys-for-work;

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[24] Blair, K 2014 Car Clubs – Switchable Trips and Focus Group Findings, presentation made by TfL to to Carplus/TfL meeting, 2 July 2014.

[25] https://www.taxistop.be/en/project-event/green-deal-shared-mobility/

- ○ ride share for journey-to-work and journeys-for-work)
  - ■ have a head start in terms of trusted social networks
  - ■ Involve contexts that generate a lot of travel, namely journey to & for work
  - ■ Provides opportunities for normalisation – i.e. shared transport services as a normal part of workplace mobility.

Focus on workplace would therefore be an effective target for decarbonisation through acceleration of shared transport.

There have long been calls within the sector for shared transport adoption to become a norm where appropriate in all Government fleets; the scale of such fleets mean that this would lead to significant potential emissions reductions.

4. New housing & workplace development

New developments provide the opportunity to design-out "bad" mobility and design-in appropriately designed shared transport services (alongside other transport services, and development components that help to reduce travel demand).

5. Existing neighbourhoods:

There has been a lot of focus on shared transport development for existing neighbourhoods. The effectiveness (on take-up or resultant travel behaviour change) is mixed, but we now understand well the sorts of neighbourhoods where shared transport has the potential for most impact.

6. In 2016, CoMoUK undertook some secondary research exploring the potential scale of near-market car club users[26]. This looked at potential scales using three separate methods, concluding:

Given supportive policy and reasonable funding for accelerating market penetration, the market **scale of users of car clubs for England and Wales in 2025 is likely to be about 3.3 million**.

This is based on separate methodologies based on market saturation and near-market scales.

Without supportive policy and funding,

it is likely that the UK market is unlikely to exceed 0.75 million by 2025.

It did not attempt to translate these to potential outcomes, e.g. emissions

7. Regulatory frameworks & licensing

[copied from above]
Regulation & licensing set up around 20th C sectors & modes, not around (shared) vehicles & desirable behaviours: e.g. MPV in a settlement could be a car club car, a taxi, a CT minibus & a volunteer driver vehicle; c.f. CfIT 2008[27]. See also
  - AK PPT "Good mobility needs good regulation. What are the prospects from shifting regulation from modes to mobility?" Connected Driver & Smart Mobility conference, Brussels, February 2018
  - AK Mobility Matters, LTT 715 (February 2017) "Could regulation deliver public good and trigger vitality in the new mobility sector?"

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[26] Carplus (2016) *UK car club member forecasting to 2025*, (unpublished)
[27]
https://webarchive.nationalarchives.gov.uk/20110304133403tf_/http://cfit.independent.gov.uk/pn/081127/index.htm

Both of these make the point that mobility could learn from approaches to changing regulation taken in other sectors that have undergone transformation, such as health and energy

7. **What are the implications of sharing for the future of parking? (e.g. increasing pick-up and drop-offs; charging shared electric vehicles; reducing parking for cars)**

Most shared transport relies on on-street (car club) or pavement (bike share) parking.

- Reservation of on-street parking requires lengthy TRO processes, even though it has now been carried out thousands of times for car clubs.
  A shift to zonal parking via licensing for flexible car clubs demonstrates a more rapid and responsive model that could accelerate car club deployment and post-implementation adjustment.
  The (tech-enabled) emergence of geo-fenced parking "bays" may help alleviate the fixed
- An issue intermittently emerges where Local Authorities attempt to levy business rates of car club operators. This has never been successful, but there has never been a consistent set of arguments applied to the issue.
- Access of car club vehicles to EV charge points is an enduring issue. CoMoUK have produced guidance (currently unpublished), though the problem is not yet resolved.
- Bike share (and scooter share) has been plagued by the reality and perception of pavement chaos. Regulation of bike/scooter parking and usage is emerging as the preferred option for clarity from the sector.

Issues of access to kerb space explored in LTT 741 Mobility Matters, February 2018 "Is it time to rethink what the kerbside is for?"

The explicit consideration of how shared transport services fit in to and require highway and street space requires a rethink of how they are managed and regulated. The emerging idea of mobility hubs[28,29]provides a relatively-easy-to-understand way of approaching this.

[28] https://como.org.uk/shared-mobility/co-mobility-themes/integration/
[29] https://northsearegion.eu/share-north/news/new-concept-in-flanders-mobihubs/

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Baptista, P., Meloa, S. & Rolima, C. (2014) *Energy, environmental and mobility impacts of car-sharing systems. Empirical results from Lisbon, Portugal*, Procedia - Social and Behavioral Sciences 111, 28 – 37

Le Vine, S., Polak, J. (2017) *The impact of free-floating carsharing on car ownership: Early-stage findings from London.* Transport Policy. http://dx.doi.org/10.1016/j.tranpol.2017.02.004

Zipcar (2018) *Zipcar: driving change in 2018: Our Social and Environmental Impact*

Schreier, H. *et al* (2018) *Analysis of the impacts of car-sharing in Bremen, Germany*, Final report for Interreg SHARENorth programme, prepared by Team Read (Berlin)

Jung, J. & Koo, Y. (2018) *Analyzing the Effects of Car Sharing Services on the Reduction of Greenhouse Gas (GHG) Emissions*, Sustainability, 10 (539)

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https://indianapublicmedia.org/news/electric-scooters-might-not-be-environmentally-friendly-after-all.php

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https://www.move-forward.com/impacts-of-shared-mobility-and-transportation-demand-management/

https://www.drive-now.com/gb/en/blog/news/flexible-car-sharing-london

http://business.liftshare.com/reduces-demand-for-parking/10-reason-car-sharing-can-benefit-business/

Contact details

Main text prepared by Alistair Kirkbride with input from other CoMoUK staff.

For CoMoUK

www.como.org.uk

Antonia Roberts

antonia@como.org.uk

07792274825

Annexe 1: Illustrative summaries of recent CoMoUK work on car clubs

Report	Year	Location	Scope	Link
Annual survey of car clubs: England & Wales, 2017-18 (Steer / CoMoUK)	In Prep		Car clubs Scale, markets, impacts	
CoMoUK annual survey of car clubs 2017/18, Scotland	March 2018	Scotland	Car clubs Scale, markets, impacts	https://como.org.uk/wp-content/uploads/2018/06/Carplus-Annual-Survey-2017-18-Scotland-Final.pdf
London Car Club Annual Survey 2017-18	March 2018	London	Car clubs Scale, markets, impacts	
2017 Low Car Neighbourhoods	July 2018	Scotland	Car clubs in new developments	
2017 Shared Car Services in the Scottish tourism sector	January 2018	Scotland	Scale and demand	
CoMoUK Annual survey of car clubs 2016/17 in Scotland	March 2018	Scotland	Car clubs Scale, markets, impacts	
Car Clubs in New Developments – best practice 2003-2014)	January 2016	UK	Car clubs Scale, markets, impacts	
Making Car Club Works. The social, environmental and financial case for car clubs.	October 2016 `	Scotland	Car clubs impacts, demand.	
CoMoUK Annual survey of car clubs 2015/16 in Scotland	March 2017	Scotland	Car clubs Scale, markets, impacts	
The benefits of EVs in Scotland	October 2015	Scotland	Benefits, impacts	
Developing Car Clubs in Scotland: The next five years	December 105	Scotland	Vison, strategy and Scale	
CoMoUK Annual survey of car clubs 2014/15 in Scotland	March 2016	Scotland	Car clubs	

			Scale, markets, impacts	
Carplus Annual survey of car clubs 2013/14 in Scotland	March 2015	Scotland	Car clubs Scale, markets, impacts	
The benefits of developing car clubs in Scotland	November 2013	Scotland	Benefits, impacts, scale and scope.	
Carplus Annual survey of car clubs 2012/13 in Scotland	March 2014	Scotland	Car clubs Scale, markets, impacts	
Developing car clubs in Scotland- Programme review	October 2012	Scotland	Impacts, vision and developments.	
Scotland Car Club Market Analysis	August 2011	Scotland	Market Analysis	

Car clubs: improving air quality in London

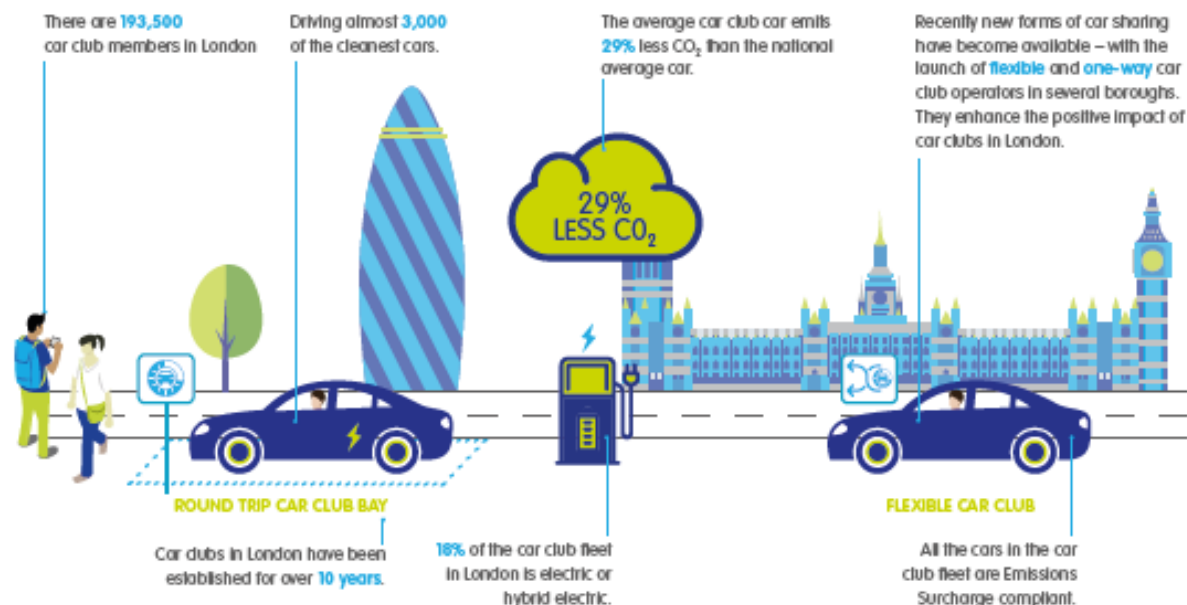**carplus bikeplus**
supporting shared transport

Carplus Bikeplus has been collating data on car club membership for 10 years. We have documented the growth in car club membership and the number of cars removed from the roads as a direct result. This ten year growth in car club use coincides with a **25% fall in Londoners' overall usage of cars.**
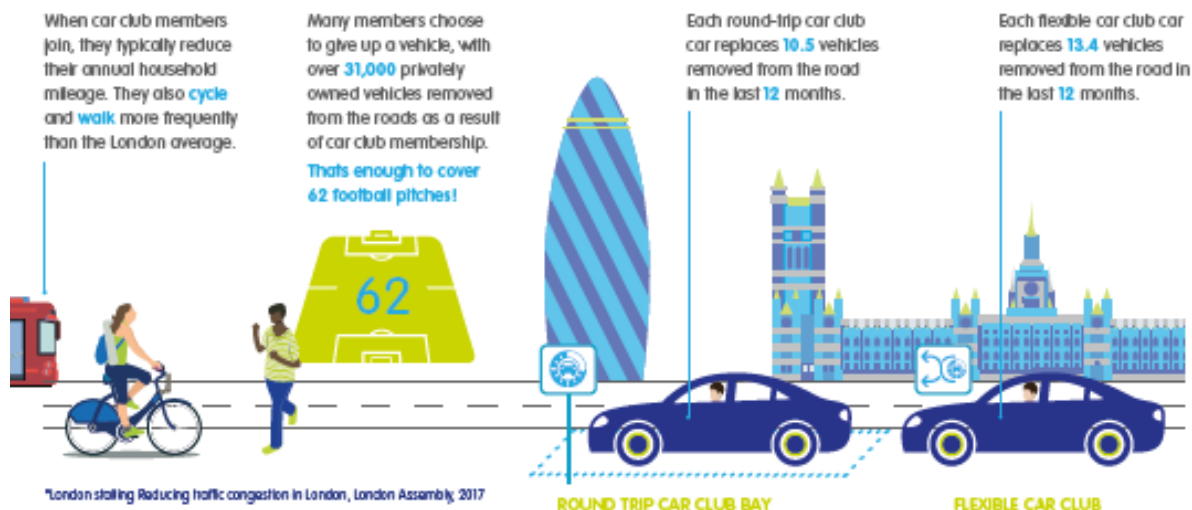
About the Carplus Annual Survey

The Carplus Annual Survey reports are the most comprehensive datasets collected across the car club sector. They have been collected on an annual basis for the past ten years. They provide a comprehensive, robust and impartial evidence base on which policy and funding priorities can be based. This year's report presents data and analysis on the usage and impacts of flexible car club operators in London as well as data from round-trip operators. The Carplus Annual Survey for London is available online at www.carplus.org.uk.

IMPROVING AIR QUALITY

There are **193,500** car club members in London

Driving almost **3,000** of the cleanest cars.

The average car club car emits **29%** less CO$_2$ than the national average car.

Recently new forms of car sharing have become available – with the launch of **flexible** and **one-way** car club operators in several boroughs. They enhance the positive impact of car clubs in London.

29% LESS CO$_2$

ROUND TRIP CAR CLUB BAY

FLEXIBLE CAR CLUB

Car clubs in London have been established for over **10 years.**

18% of the car club fleet in London is electric or hybrid electric.

All the cars in the car club fleet are Emissions Surcharge compliant.

REDUCING CAR OWNERSHIP

When car club members join, they typically reduce their annual household mileage. They also **cycle** and **walk** more frequently than the London average.

Many members choose to give up a vehicle, with over **31,000** privately owned vehicles removed from the roads as a result of car club membership.

Thats enough to cover 62 football pitches!

Each round-trip car club car replaces **10.5** vehicles removed from the road in the last **12** months.

Each flexible car club car replaces **13.4** vehicles removed from the road in the last **12** months.
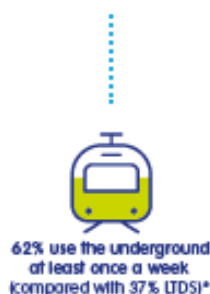
62

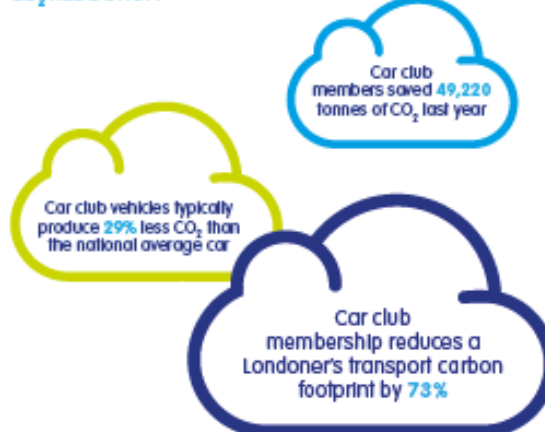**ROUND TRIP CAR CLUB BAY**

FLEXIBLE CAR CLUB

*London stalling Reducing traffic congestion in London, London Assembly, 2017

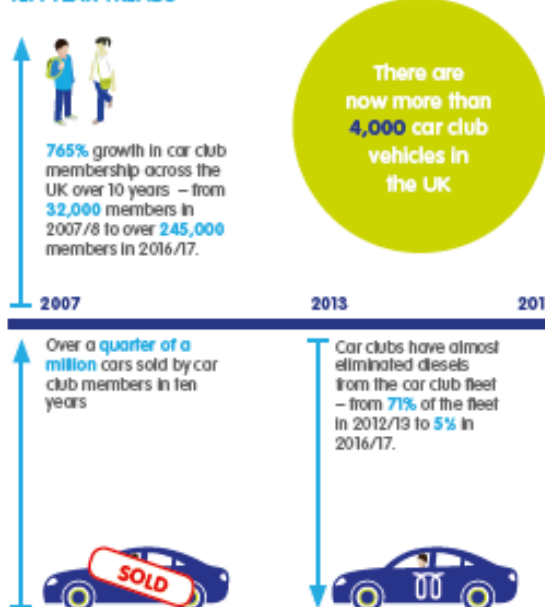# Car club members walk, cycle and use public transport more:

ROUND TRIP CAR CLUB MEMBERS

FLEXIBLE CAR CLUB MEMBERS

23% are regular cyclists (compared with 9% LTDS)*

32% are regular cyclists (compared with 9% LTDS)*

62% use the underground at least once a week (compared with 37% LTDS)*

58% use the underground at least once a week (compared with 37% LTDS)*

33% use the train at least once a week (compared with 16% LTDS)*

31% use the train at least once a week (compared with 16% LTDS)*

*London Travel Demand Survey

CO₂ REDUCTION

Car club members saved 49,220 tonnes of CO₂ last year

Car club vehicles typically produce 29% less CO₂ than the national average car

Car club membership reduces a Londoner's transport carbon footprint by 73%

TEN YEAR TRENDS

765% growth in car club membership across the UK over 10 years — from 32,000 members in 2007/8 to over 245,000 members in 2016/17.

There are now more than 4,000 car club vehicles in the UK

2007	2013	2017

Over a quarter of a million cars sold by car club members in ten years

Car clubs have almost eliminated diesels from the car club fleet — from 71% of the fleet in 2012/13 to 5% in 2016/17.

SOLD

Car clubs in the UK

- There are over 245,000 car club members with more than 4,000 vehicles in the UK.

- Car club members walk, cycle and use public transport more than the national average.

- Car clubs provide alternatives to car ownership, reducing the number of cars on the roads.

About Carplus Bikeplus

Carplus Bikeplus is an independent environmental transport charity working for accessible shared mobility, including car clubs, bike sharing and 2+ car sharing.

We work to change the way people travel to reduce the environmental impact of transport and improve access to transport for all. We support and encourage measures that promote shared mobility schemes which complement public transport, cycling and walking to provide affordable and flexible travel.

Carplus Bikeplus, Kings House, 1 King Street, Leeds
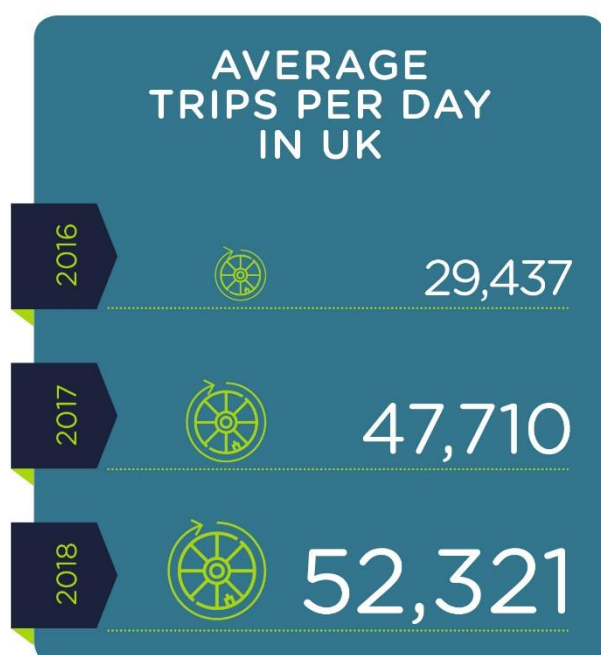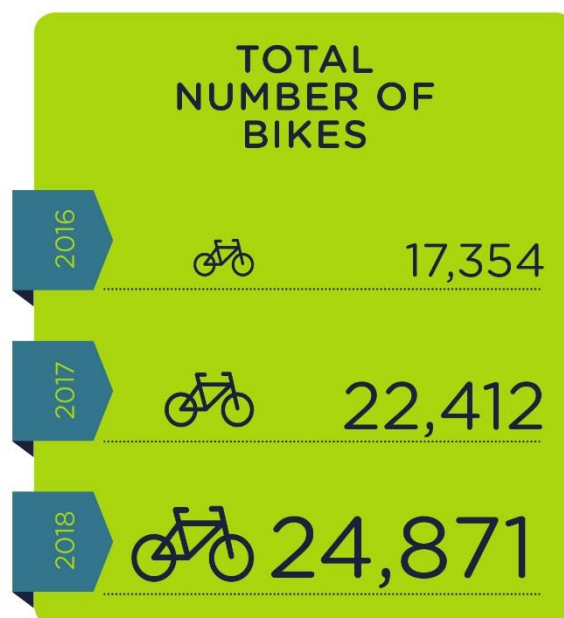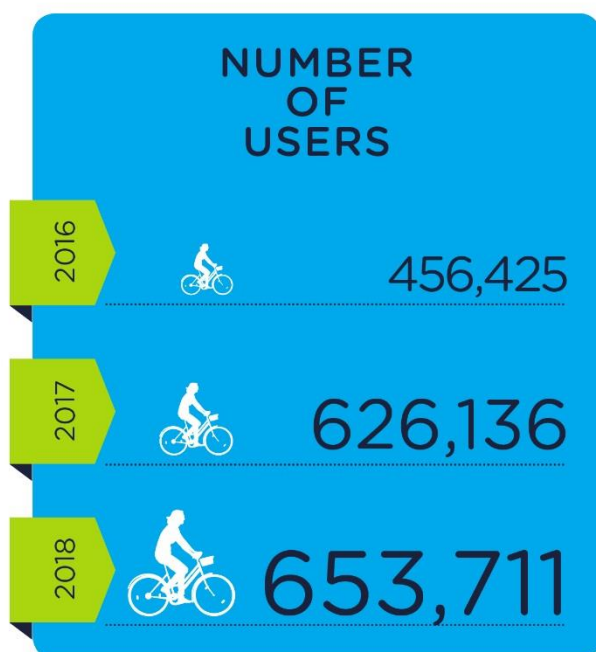**0113 410 5260** | info@carplus.org.uk

carplus bikeplus
supporting shared transport

Annexe 3: Summary CoMoUK on UK bike share

Report	Year	Location	Scope	Link
Bikeplus annual survey of bike-share schemes 2016,	September 2016	UK	Bike-share scheme; Scale, markets, impacts and benefits.	
Bikeplus annual survey of bike-share schemes 2017.	September 2017	UK	Bike-share scheme; Scale, markets, impacts and benefits.	
Bikeplus annual survey of bike-share schemes 2018.	September 2018	UK	Bike-share scheme; Scale, markets, impacts and benefits.	
Bikes4All – Social Inclusion access to bikes project	September 2018	Glasgow, Scotland	Social Inclusion and Bike share	

NUMBER OF USERS

Year	Users
2016	456,425
2017	626,136
2018	653,711

TOTAL NUMBER OF BIKES

Year	Bikes
2016	17,354
2017	22,412
2018	24,871

AVERAGE TRIPS PER DAY IN UK

Year	Trips
2016	29,437
2017	47,710
2018	52,321

The demographics of bike share users

THE GENDER SPLIT FOR BIKE SHARE
SCHEMES IS FAIRLY EVEN

42%
FEMALE

56%
MALE

BIKESHARE USERS

58%
MEN

41%
WOMEN

PEOPLE WHO STARTED OR RE-STARTED CYCLING

43%
MEN

55%
WOMEN
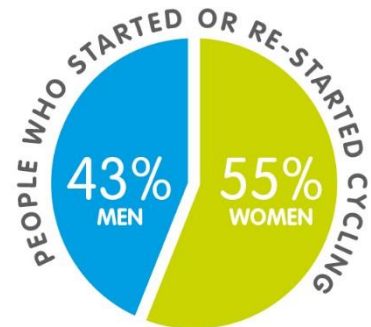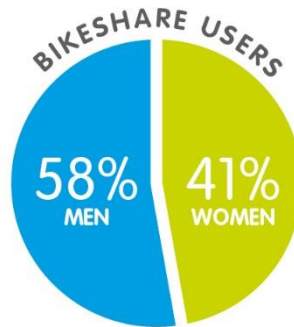
The potential to attract new cyclists and the change in number of cycling trips

BIKE SHARE IS A TOOL TO RE-ENGAGE
LAPSED CYCLISTS

43%
HADN'T RIDDEN FOR
AT LEAST A YEAR

23%
started or re-started
cycling (after a gap of
at least 5 years)

43%
started riding more as
a result of joining the
bike share scheme

Impacts on health

2.5HRS

78%
OF RESPONDENTS HAD UNDERTAKEN
SOME MODERATE OR VIGOROUS
EXERCISE AS A RESULT OF CYCLING IN
THE LAST WEEK

BIKE SHARE IS A TOOL TO
INCREASE CYCLING TRIPS

59%
ARE CYCLING MORE OFTEN

Personal benefits of bike share

BIKE SHARE SCHEMES COMPLEMENT OWNERSHIP EG: THROUGH 1 WAY TRIPS

56%
ALREADY OWN A BIKE

68% of of bike share uses stated their main reason for using bike share was exercise, 79% convenience, and 56% time savings

56% TIME SAVING
68% EXERCISE AND FRESH AIR
79% CONVENIENCE

Modal shift relating to the use of bike share

BIKE SHARE REDUCES CAR USE

14%
SWITCHED THEIR TRIP FROM CAR TO BIKE SHARE

BIKE SHARE IS A TOOL TO REDUCE CAR TRIPS

33%
SAID THEY WERE USING THEIR CAR EITHER MUCH LESS (12%) OR LESS (21%)

Use of other co-mobility services

BIKE SHARE USERS ARE LIKELY TO USE OTHER SHARED MOBILITY SERVICES

65%
EBIKES

22%
RIDE SHARE

41%
MOBILITY AS A SERVICE

28%
CAR CLUBS

32%
SHARED TAXIS

25%
used bike share bikes in combination with the bus

40%
used bike share bikes in combination with the train