



LGA Behavioural Insights Programme 2019-2020

Rethinking Transport: Behavioural Insights

Scoping Report: Promoting sustainable modes of transport and reducing road congestion for Surrey Research Park

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Introduction

In February 2020, Surrey County Council (SCC) commissioned [The Behaviouralist](#) (TB) to deliver a project to conduct a behavioural insights trial with the goal of reducing road congestion in Guildford, reducing CO₂ emissions by transportation modal shift to the Surrey Research Park (SRP), and promoting more active modes of transport to the SRP.

The project is funded by the Local Government Association (LGA) as part of the [Behavioural Insights Programme](#) 2019-20 cohort.

The purpose of this scoping report is to provide insights from the fieldwork conducted during the scoping phase, outlining the feasibility of delivering an impactful and evidence-led research project with Surrey County Council (SCC). This report provides initial ideas for interventions while outlining trial design, sample size, statistical power analysis, and timelines. The purpose of these high-level ideas is to prompt discussion with SCC and partners and does not represent the final plan for the project.

Introduction cont.

This project has been initiated under the extra-ordinary circumstances of the onset of the Covid-19 pandemic. It is impossible to predict the impact the pandemic will have on this project. We know it will be significant and have completed an initial risk assessment of the project. We will continue to review and engage with project stakeholders to understand how this can be best delivered.

TB are committed to this project and believe we can deliver a valuable project. Our first priority is the safety of all internal and external stakeholders, including potential trial participants. For this reason, we propose an initial delay of 2 months, to allow the SCC and TB teams to re-assess project affordances, should the pandemic risks be largely mitigated. In the event that we are still in the midst of the pandemic after 2 months, we will discuss a continuance of the delay for a more appropriate time. In the meantime, the TB team will continue work on all appropriate desk research and planning to ensure a timely delivery of the final project once it is safe to carry it forward.

Project Aims

Primary outcomes

Through the intervention(s) we aim to change the some or all of the following behaviour(s):

- Decrease the frequency of single-occupancy vehicles transporting commuters to the SRP
- Increase the take up and engagement with lift sharing initiatives at the SRP
- **Increase the take up and engagement with car club initiatives at the SRP**
- increase the frequency of multiple occupancy vehicles and ride-sharing / carpooling commuters to the SRP
- Increase the frequency of public transit (bus & train) use for commuters to the SRP
- Increase the frequency of active modes of transit (walking & cycling) to the SRP
- Increase the frequency of avoided journeys to the SRP via work from home initiatives

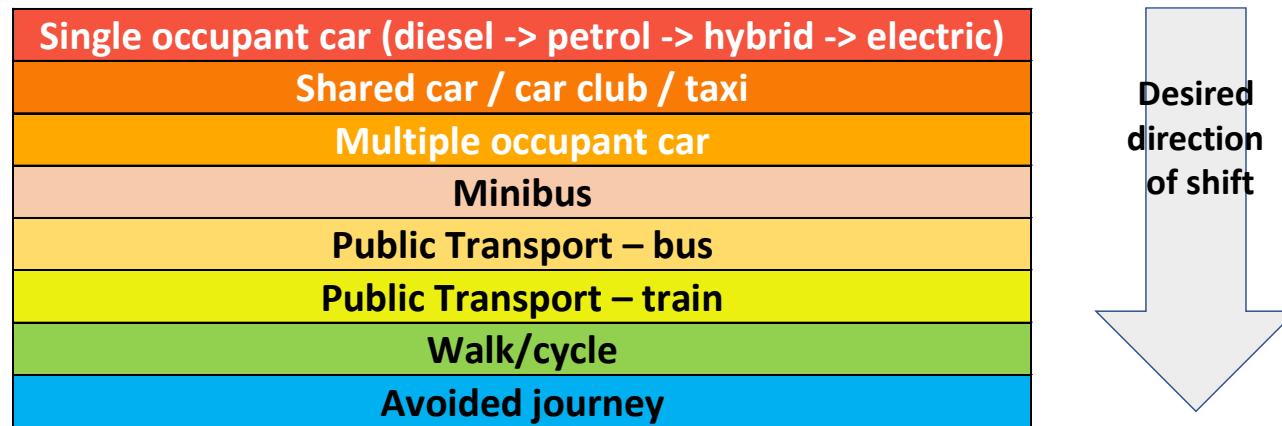
Secondary outcomes

- Increase SRP employee satisfaction
- Increase engagement and collaboration between the SCC, SRP and partner transit organisations.

Project Aims cont.

Primary outcomes

The primary outcomes in the previous page are visualised in this travel impact hierarchy:



Scoping Phase: Aims

During the scoping phase, we set out to accomplish the following:

- To scope opportunities for potential interventions and to scope the feasibility of developing, delivering and evaluating each of these interventions.
- To engage SCC and project stakeholders through face-to-face meetings and semi structured interviews to understand and define project goals and outcomes of interest.
- To identify any ethical approvals or requirements that may be needed, including approvals from local stakeholders and/or travel authorities.
- To provide high-level intervention ideas including trial design, sample size and statistical power calculations, for further discussion with SCC and stakeholders.

Scoping Phase: Steps

During the scoping phase, we completed the following key steps:

1. *Project kick-off meeting* - This meeting was held in person at the Surrey County Council headquarters in Kingston on March 10th 2020. In attendance, was the SCC Rethinking Transport team, the TB team, and representatives from a concurrent project within the council, Mobility as a Service (MaaS), whose goals and scope are highly related.
2. *Internal review of documents and academic literature* - We reviewed all the documents provided to us by Surrey County Council and stakeholders, as well as some studies from the academic literature to help inform the scoping report and gain a critical understanding of the context of transport issues and initiatives around the Guildford area.

Scoping Phase: Steps cont.

3. *Initial interviews with internal (SCC) and external stakeholders* – We conducted interviews with key stakeholders from within SCC as well as from the Surrey Research Park and the University of Surrey with the purpose of learning about the context of the project and the capabilities and roles of potential project partners. Due to the COVID-19 pandemic, we conduct all of our interviews over telephone or teleconferencing software. The interviews were conducted with staff from the following teams:
 - SCC partnership office
 - SCC strategic transport group
 - SCC bus service planning team
 - SCC highways team
 - SCC Mobility as a Service (MaaS) project team
 - Surrey Research Park (CEO and Operations Manager)
 - University of Surrey (Senior Transport researcher)

Scoping Summary

Through the scoping research we have:

1. Identified traffic data sources within the SCC, namely within the Highways department
2. Identified historic and contemporary employee travel and attitudes data within the SRP
3. Identified potential avenues of transport mode data collection within the SRP
4. Uncovered attitudes, culture, and motivations of stakeholders at the SRP
5. Uncovered attitudes, culture, and motivations of stakeholders within the SCC
6. Highlighted alignment of project goals, scope, target population, and infrastructure between the Rethinking Transport & Maas projects. The Maas team and partners are building an app to provide transport route recommendations for employees at the SRP based on location, which integrates lift sharing, public transit across companies, bike sharing, and incentive systems. Users can purchase tickets or arrange lift shares within the app, mitigating complexity and safety limitations of the public transit systems and lift sharing arrangements.
7. Considered the impact of COVID-19 on the project, which, in its current state, is unfeasible until employees of the SRP return to working on site
8. Concluded that there are a range of interventions – both in conjunction with and independent from the Maas project – which are feasible. As such, we would recommend the project continues as soon as the COVID-19 pandemic is under control and professional life returns to ‘normal’ in Surrey County.

Initial concepts

This table summarises a number of potential interventions identified to date. In the following slides we provide further detail on these concepts.

Concept	Touchpoint	Outcome Metric(s)	RCT Feasible	Practically Feasible
1. Nudging via SRP messages	Employees receive emails / letters from SRP	Employee self-reported transport choices	Yes. Randomisation at individual level	Yes. Low data collection resources needed
2. Nudging via business messages	Employees receive emails / letters from their employer	Employee self-reported transport choices	Yes. Randomisation at business level	Yes. Low data collection resources needed
3. Nudging via business or SRP messages	Employees receive emails / letters from the SRP or their employer	Car count per business	Likely. Randomisation at the business level	Likely. Car park security personnel collect daily data
4. Incentivising MaaS app sign-up	Employees receive emails / letters from SRP or their employer re: MaaS app	App downloads, membership sign-ups	Yes. Randomisation at the individual or business level	Yes. Data collection via app infrastructure
5. Incentivising MaaS app engagement	Employees receive emails / letters from SRP or their employer re: MaaS app	In app use metrics: active members, trips shared, tickets purchased	Yes. Randomisation at the individual or business level	Yes. Data collection via app infrastructure

Concept 1 & 2: Messages and Self-report

Concept

These two concepts rely on the SRP or individual businesses for sending behaviourally informed messages that nudge employees of the SRP to shift transport modes down the impact hierarchy. Messages can include multiple behavioural insights, including descriptive and injunctive social norms, commitment devices, and collective framing that increase the salience of a shared group identity and purpose. Messages can also contain gamifying incentives (e.g. business to business competition).

Methodological details

The outcome of interest here would be the frequency of transport choices on levels of the impact hierarchy. Data would be collected via extremely brief regular surveys (1 to 2 questions) delivered electronically to SRP employees. Randomisation for these two options can occur at the level of the individual or the business depending on specifics of the intervention.

Feasibility

These two concepts present highly feasible randomised controlled trial options; we would not require externally collected data and we would be able to randomise treatments without any inconvenient.

Concept 3: Messages and observation

Concept

This concept relies on the same potential behaviourally informed messages as the first two concepts, with one crucial difference: this concept measures observed behaviour instead of self-reported data. The drawback of relying on self-reported data is that people may have expectations of what the researchers are looking for and may adjust their responses in a biased way.

Observing actual behaviour instead of relying on people to report honestly and accurately, therefore, measures the target behaviours in an often more reliable and accurate way. The drawback of this behavioural measurement method is that it is more costly in terms of personnel resources. In this case, the parking and grounds security guard would be responsible for counting cars for each business-specific car park allotment in the SRP on a regular basis.

Concept 3: Messages and observation cont.

Methodological details

The outcome of interest here would be the number of cars parked in the lot at the business or SRP level. From this measure, we would infer that a decrease in cars compared to the control group is an indication of an increase in: public transit use, lift sharing, walking, biking, or working from home. Randomisation would occur at the level of the business.

Feasibility

This concept presents a likely feasible randomised controlled trial design, with limitations expected in personnel costs associated with data collection.

Concept 4 & 5: MaaS app participation

Concept

A range of 'nudges' or behavioural principles could be applied across the app deployment process. These possibilities are numerous and could involve innovative co-creation between TB, SCC, and the MaaS team.

We could, for example, promote take up of first-time users, regular engagement with app features, or in-app referrals. We could also incentivise any of these actions through community based businesses or in-app points. Because the app is currently being developed, this represents a rich problem space and opportunity to involve behavioural insights to target a wide range of behaviours with minimal data collection costs.

An additional benefit of either of these concepts is that the MaaS app will integrate transport choices all down the impact hierarchy, allowing for multiple wide-ranging behavioural measurement.

Concept 4 & 5: MaaS app integration

Methodological details

The outcome(s) of interest here could vary depending on collaboration between the SCC and TB team and the MaaS team. These discussions are ongoing. With digital data collection providing a reliable means of measuring sign ups, shared rides, bus/train tickets purchased, and referrals, this option presents a highly efficient and reliable means of measuring behaviour change. In addition, the digital environment of the app presents a platform that can be altered and iteratively tested with relative ease to operationalise behavioural concepts with minimal infrastructure costs. Randomisation could occur at the level of the business or the individual.

Feasibility

These two concepts present highly feasible randomised controlled trial opportunities. The limitations we expect would involve communicative costs between two project teams, as aligning goals and methods across the two funding structures will require extra management. However, the added value here would be found in the fast-paced, accurate, reliable, and low cost intervention and data collection infrastructure of the digital app environment.

Final concept

We will continue to develop ideas for the final concept in collaboration with the SCC Rethinking Transport team, our academic partner, the MaaS team, and the Surrey Research Park.

From experience, we believe this intervention will be most successful when it delivers a:

Win for SRP employees. Gains for the employee include cleaner air, decreased commuting costs, decreased commuting time, increased job satisfaction, and an increased sense of community connectivity.

Win for Guildford residents. Commuters and residents throughout the Guildford area and its surroundings will gain from cleaner air quality and decreased congestion, particularly around the hospital, SRP, and the Tesco roundabout, where there have been significant congestion problems.

Win for similar business parks. Once we have empirically tested a behavioural solution, we will be able to scale up the findings throughout Surrey County and potentially across the UK in similar business park contexts.

According to the evidence we have thus far collected, we predict these positive outcomes to be not only achievable but also likely.

Statistical power and RCT sample size

There are a range of metrics which could be used to track changes in SRP employee commuting choices and/or attitudes, including (but not limited to) self-reporting surveys, random parking scan sampling conducted by SRP security or student assistants/interns, or app metrics within the MaaS digital environment.

Sample size considerations. Based on the scoping phase research we conducted, the Surrey Research Park had approximately 4,100 – 4,500 daily commuting employees across 170 businesses prior to the Coronavirus pandemic. Should this estimate remain accurate after the pandemic subsides, this sample of employees and businesses will provide an adequate statistical power to detect a change in behaviour as a result of our intervention(s).

For example, we already know that approximately 65% of SRP employees drive to work. If there are 1,500 employees in our test group and 1,500 employees in our control group and our main outcome is the number of employees who drive to work, we will have 80% statistical power to detect a drop in 5 percentage points of people commuting via car with a 95% confidence level.

Statistical power and RCT sample size cont.

Sample size considerations, continued. If our main outcome of interest is instead the number of first time sign-ups to the MaaS app, we can expect to have a smaller sample size because the baseline of sign-ups will be close to zero.

Say, for example, that our control group has an initial sign-up rate of 1%. We will be able to detect a causal effect of our intervention of 9 percentage points increase in our test group with a 95% confidence level and 80% statistical power if each group only has 100 SRP employees in it.

With such small sample size requirements, this allows us room in our statistical power estimates to test not just a control and a test group, but multiple test treatments across a larger population of employees.

Scoping results

TB recommend that the trial proceeds, but after an initial pause period of two months to allow appropriate attention to be paid to the COVID-19 pandemic.

Once the pandemic has eased, there are multiple feasible interventions which could be developed and trialled robustly across within the SRP transport environment.

There exist a number of different primary and secondary metric data collection opportunities, both within and independent of the MaaS app.

Further data affordances will continue to be discussed with the SCC team and partners during the delivery phase of the project. This presents additional opportunities to conduct and measure the impact of any intervention(s).

Partners at the University, in the MaaS team, and at the SRP have indicated they are engaged in the project and are aligned with the projects goals.

COVID-19 Impact

TB and SCC are willing to discuss the feasibility and timing of delivering a project amidst the current pandemic situation.

A range of interventions have been identified that represent a cost- and resource-efficient measures. The merits and feasibility of each of these interventions will be discussed during the project delivery phase.

TB, SCC (RT and MaaS), SRP, and partners are willing to be flexible and practical about how we approach the trial and will be adapting to changes in how people continue to work and travel as the pandemic progresses (and eventually dissipates).

In the event in which SRP employees continue to work from home after the pandemic has eased, we are willing and open to discuss altering the scope of the project to target active modes of transport in Guildford and/or capitalising on the cultural shift to promote sustainability more broadly.

Next Steps

1. Discuss the impact of COVID-19 on the scope, feasibility, and general project approach.
2. Coordinate with the MaaS team on an appropriate delay period due to Covid-19 pandemic.
3. As an initial precaution, delay both projects by two months and then re-assess feasibility.
4. Once the pandemic has eased and normal transport behaviours resume, initiate the Discovery Phase of the project.
5. Should ‘normal’ transport behaviours not return to pre-COVID-19 levels, remain in ongoing discussions with all stakeholders and partners to find appropriate alternative scoping directions.

Provisional Timeline

		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 58	Week 59	Week 73
WP 1.0	Project management	Mar-02	Mar-09	Mar-16	Jun-01	Jun-08	Jun-15	Jun-22	Jun-29	Jul-06	Jun-07	Jun-14	Sep-20
WP 1.1	Project management												
WP 1.2	Project orientation meeting												
WP 1.3	Regular meetings between TB & SCC												
WP 2.0	Phase: Scoping												
WP 2.1	Field research with businesses and employees at SRP												
WP 2.2	Liaise with existing project leads for data sharing opportunities												
WP 2.3	Literature review for existing evidence of relevant methods												
WP 2.4	Scoping report submission												
WP 3.0	Phase: Delivery - Behavioural Diagnostic												
WP 3.1	Finalise literature review												
WP 3.2	Conduct qualitative data collection at SRP (e.g. interviews)												
WP 3.3	Conduct quantitative data collection at SRP (e.g. surveys)												
WP 3.4	Submit Behavioural Diagnostic Report												
WP 4.0	Phase: Delivery - Intervene												
WP 4.1	Intervention design meeting with SCC												
WP 4.2	Finalise sample size calculations												
WP 4.3	Internal meetings with behavioural science team												
WP 4.4	Submit intervention design report to SCC												
WP 5.0	Phase: Delivery - Assess												
WP 5.1	Trial kickoff meeting with stakeholders at SRP												
WP 5.2	Data collection begins												
WP 5.3	Data collection ends												
WP 5.4	All data compiled and analysed by TB data science team												
WP 5.5	Submit final evaluation report to SCC												
WP 6.0	Phase: Delivery - Scale												
WP 6.1	Presentation 1: results of pilot												
WP 6.2	Presentation 2: Behavioural Science capacity building												

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Trial ongoing

Final Report ongoing

Risk Register

We have provided an updated risk register outlining how we will address how the COVID-19 pandemic may impact day-to-day work and the delivery of the project.

We have adjusted elements of the project plan accordingly:

- 1) All F2F meetings have been changed to virtual meetings and conference calls. Both TB and SCC have conference calling and web-based calling facilities to ensure that this is feasible and has relatively little impact on project communication.
- 2) Delaying project timelines: It is both infeasible and unethical to proceed with a project targeting transport behaviour change during the COVID-19 pandemic. For this reason we will delay the delivery phase of the project, initially by two months, and then we will re-assess whether a further delay period is necessary. During this time we will continue all safe and remote work activities, including desk research, literature reviews, and project management meetings.